Prevalence of *Trypanosoma* and *Sodalis* in wild populations of tsetse flies and their Impact on Sterile Insect Technique programmes for tsetse eradication

Mouhamadou M. Dieng, Kiswend-sida M. Dera, Percy Moyaba, Gisele M. S. Ouedraogo2, Guler Demirbas-Uzel, Fabian Gstöttenmayer, Fernando C. Mulandane, Luis Neves, Sihle Mdluli, Jean-Baptiste Rayaisse, Adrien M. G. Belem, Soumaïla Pagabeleguem, Chantel J. de Beer, Andrew G. Parker, Jan Van Den Abbeele, Robert L. Mach, Marc J. B. Vreysen, and Adly M. M. Abd-Alla

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```
library(ggplot2)

## Warning: package 'ggplot2' was built under R version 4.0.5

library(lattice)
library(gcookbook)
library(ggfortify)
library(datasets)
library(MASS)
library(survival)
library(rmarkdown)
library(knitr)
library(coxme)

## Loading required package: bdsmatrix

##
## Attaching package: 'bdsmatrix'

## The following object is masked from 'package:base':
##
##     backsolve

library(lme4)

## Loading required package: Matrix

library(nlme)

##
## Attaching package: 'nlme'

## The following object is masked from 'package:lme4':
##
##     lmList
```

```
library(tidyverse)

## Warning: package 'tidyverse' was built under R version 4.0.5

## -- Attaching packages --------------------------------------- tidyverse 1.
3.1 --

## v tibble  3.1.1     v dplyr   1.0.5
## v tidyr   1.1.3     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.1
## v purrr   0.3.4

## Warning: package 'tibble' was built under R version 4.0.5

## Warning: package 'dplyr' was built under R version 4.0.5

## -- Conflicts ------------------------------------------ tidyverse_conflict
s() --
## x dplyr::collapse() masks nlme::collapse()
## x tidyr::expand()   masks Matrix::expand()
## x dplyr::filter()   masks stats::filter()
## x dplyr::lag()      masks stats::lag()
## x tidyr::pack()     masks Matrix::pack()
## x dplyr::select()   masks MASS::select()
## x tidyr::unpack()   masks Matrix::unpack()

library(gapminder)
library(rcompanion)
library(FSA)

## ## FSA v0.8.32. See citation('FSA') if used in publication.
## ## Run fishR() for related website and fishR('IFAR') for related book.

library(stats)
library(RCA)

## Loading required package: igraph

##
## Attaching package: 'igraph'

## The following objects are masked from 'package:dplyr':
##
##     as_data_frame, groups, union

## The following objects are masked from 'package:purrr':
##
##     compose, simplify

## The following object is masked from 'package:tidyr':
##
##     crossing
```

```
## The following object is masked from 'package:tibble':
##
##     as_data_frame

## The following objects are masked from 'package:stats':
##
##     decompose, spectrum

## The following object is masked from 'package:base':
##
##     union

## Loading required package: gplots

## Registered S3 method overwritten by 'gplots':
##   method         from
##   reorder.factor DescTools

##
## Attaching package: 'gplots'

## The following object is masked from 'package:stats':
##
##     lowess

library(broom)

## Warning: package 'broom' was built under R version 4.0.5

library(sp)
library(MuMIn)

## Registered S3 methods overwritten by 'MuMIn':
##   method        from
##   formula.coxme coxme
##   logLik.coxme  coxme
##   logLik.lmekin coxme

library(ggpubr)

## Registered S3 methods overwritten by 'car':
##   method                           from
##   influence.merMod                 lme4
##   cooks.distance.influence.merMod lme4
##   dfbeta.influence.merMod          lme4
##   dfbetas.influence.merMod         lme4

library(AICcmodavg)

##
## Attaching package: 'AICcmodavg'
```

```
## The following objects are masked from 'package:MuMIn':
##
##     AICc, DIC, importance

## The following object is masked from 'package:lme4':
##
##     checkConv

library(car)

## Warning: package 'car' was built under R version 4.0.5

## Loading required package: carData

##
## Attaching package: 'car'

## The following object is masked from 'package:FSA':
##
##     bootCase

## The following object is masked from 'package:dplyr':
##
##     recode

## The following object is masked from 'package:purrr':
##
##     some

library(ggthemes)

## Warning: package 'ggthemes' was built under R version 4.0.5
```

prepare the data

```
data=read.csv("rawdata_statistic_sod_tryp_bio2.csv")
str(data)

## 'data.frame':    157 obs. of  18 variables:
##  $ Country     : chr  "ETH" "BKF" "BKF" "SEN" ...
##  $ Localisation: chr  "Arba minch, nech SAFr" "Comoe" "Comoe" "Pout" ...
##  $ Species     : chr  "Gp" "Gt" "Gt" "Gpg" ...
##  $ Sex         : chr  "NI" "F" "M" "NI" ...
##  $ Sample      : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ Prev_Sod    : num  20.5 0 0 0 42.6 ...
##  $ Prev_Tspp   : num  20.04 16.54 15 7.04 88.72 ...
##  $ Prev_Tc     : num  6.1 1.1 3.64 1.51 21.54 ...
##  $ Prev_Tv     : num  0.65 13.24 11.36 2.01 15.38 ...
##  $ Prev_Tz     : num  1.09 0.37 0 0.5 0.51 1.03 0 0.68 0.68 0 ...
##  $ Prev_Tsg    : num  10.46 0 0 3.02 26.15 ...
##  $ Prev_TcTv   : num  0 0.74 0 0 6.67 1.03 0 0 0 0 ...
##  $ Prev_TcTz   : num  0 1.1 0 0 1.54 0.51 0 0 0 0.76 ...
##  $ Prev_TcTsg  : num  0.65 0 0 0 15.9 0.51 0 7.53 0.68 0 ...
```

```
##  $ Prev_TvTz   : num  0 0 0 0 1.03 0 0 0 0 0 ...
##  $ Prev_TvTsg  : num  0.44 0 0 0 0 0 0 0 0.68 0 ...
##  $ Prev_TzTsg  : num  0.65 0 0 0 0 1.03 0 0 0.68 0 ...
##  $ Prev_TcTvTz : num  0 0 0 0 0 0 0 0 0 0 ...

attach(data)
head(data)

##   Country          Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev
_Tc
## 1     ETH Arba minch, nech SAFr      Gp  NI      1    20.48     20.04    6
.10
## 2     BKF                 Comoe      Gt   F      2     0.00     16.54    1
.10
## 3     BKF                 Comoe      Gt   M      3     0.00     15.00    3
.64
## 4     SEN                  Pout     Gpg  NI      4     0.00      7.04    1
.51
## 5     KEN               Katotoi      Gp  NI      5    42.56     88.72   21
.54
## 6     KEN                  Mwea      Gp  NI      6     3.08     19.49    7
.18
##   Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_T
vTsg
## 1    0.65    1.09    10.46      0.00      0.00       0.65      0.00
0.44
## 2   13.24    0.37     0.00      0.74      1.10       0.00      0.00
0.00
## 3   11.36    0.00     0.00      0.00      0.00       0.00      0.00
0.00
## 4    2.01    0.50     3.02      0.00      0.00       0.00      0.00
0.00
## 5   15.38    0.51    26.15      6.67      1.54      15.90      1.03
0.00
## 6    0.51    1.03     7.69      1.03      0.51       0.51      0.00
0.00
##   Prev_TzTsg Prev_TcTvTz
## 1       0.65           0
## 2       0.00           0
## 3       0.00           0
## 4       0.00           0
## 5       0.00           0
## 6       1.03           0

data=na.omit(data)
data

##     Country                 Localisation Species Sex Sample Prev_Sod Prev_
Tspp
## 1       ETH        Arba minch, nech SAFr      Gp  NI      1    20.48     2
0.04
```

```
## 2       BKF                    Comoe      Gt   F      2     0.00     1
6.54
## 3       BKF                    Comoe      Gt   M      3     0.00     1
5.00
## 4       SEN                     Pout     Gpg  NI      4     0.00
7.04
## 5       KEN                  Katotoi      Gp  NI      5    42.56     8
8.72
## 6       KEN                    Mwea      Gp  NI      6     3.08     1
9.49
## 7       SAF                   Phinda      Gb  NI      7     4.12
0.00
## 8       ZAM                    Mfuwe      Gp  NI      8     2.05     4
5.21
## 9       URT                 URTzania      Gp  NI      9    78.77     1
9.86
## 10      BKF                    Comoe    Gmsm   F     10     0.00
9.16
## 11      BKF                   Folonzo      Gt   F     11     0.00     1
8.87
## 12      BKF                   Folonzo     Gpg   F     12     0.00
7.55
## 13      BKF                   Folonzo     Gpg   M     13     1.89     1
6.04
## 14      BKF                   Folonzo      Gt   M     14     0.00     3
2.63
## 15      GUI                 Kangoliya     Gpg   F     15    95.74
0.00
## 16      UGA              Buvuma island     Gff  NI     16     4.26     1
0.64
## 17      KEN                      Kari      Gp  NI     17    89.36
2.13
## 18      SEN                     Kayar     Gpg  NI     18     0.00
1.14
## 19      KEN                    Koibos      Gp  NI     19     0.00     7
1.59
## 20      KEN             Meru nat. parc      Gp  NI     20    22.99     7
0.11
## 21      KEN                      Kari     Gmm  NI     21    63.53
2.35
## 22      URT               MaSAFng-URTga     Gmm  NI     22    76.54     5
3.09
## 23      KEN             Ruma nat. parc      Gp  NI     23    26.25     1
7.50
## 24      GHA                  Walewale      Gt   M     24     0.00     5
3.85
## 25      BKF                Moussodougou     Gpg   F     25     0.00     4
4.87
## 26      ZIM                     Makuti     Gmm  NI     26    26.92     9
1.03
```

```
## 27      SAF               False Bay Park      Ga  NI     27     0.00
2.60
## 28      BKF                      Comoe    Gmsm   M     28     0.00     1
0.67
## 29      BKF                    Folonzo    Gmsm   M     29     0.00     4
0.00
## 30      BKF                      Comoe     Gpg   F     30     0.00
2.82
## 31      URT               MaSAFng-URTga      Gp  NI     31    66.20     7
3.24
## 32      BKF                    Kartasso     Gpg   F     32     0.00
0.00
## 33      BKF                    Kartasso     Gpg   M     33     0.00
0.00
## 34      SEN             DiackSAFo Peulh     Gpg  NI     34     0.00
7.69
## 35      BKF                Moussodougou     Gpg   M     35     0.00     2
1.88
## 37      BKF                      Comoe    Gmed   M     37     6.56     2
4.59
## 38      KEN                      Emsos      Gp  NI     38     0.00     9
3.33
## 39      BKF                    Folonzo    Gmsm   F     39     1.69     2
0.34
## 40      MLI                       Bani     Gpg   F     40     0.00
1.72
## 41      SAF                SAFint Lucia      Ga  NI     41     0.00     3
8.60
## 42      UGA                      Budaka      Gp  NI     42    94.55
7.27
## 43      GHA                    Walewale      Gt   F     43     0.00     6
6.04
## 44      BKF                       Arly      Gt   F     44     0.00
1.89
## 45      BKF                     Kampty     Gpg   F     45     0.00     9
0.57
## 46      SAF                Lower Mkhuze      Ga  NI     46     0.00     4
3.40
## 47      BKF                      Comoe     Gpg   M     47     0.00
1.92
## 48      MLI                        SEN     Gpg   M     48     0.00
7.69
## 49      KEN                    Ikapolok     Gff  NI     49    39.22     3
7.25
## 50      SAF                    Hluhluwe      Gb  NI     50     0.00     3
2.00
## 51      SAF North eastern KwaZulu-Natal       Gb  NI     51     0.00
4.00
## 52      MOZ   Reserva Especial de Maputo      Gb  NI     52    14.00
6.00
```

```
## 53      MOZ   Reserva Especial de Maputo      Ga  NI     53     0.00     1
0.00
## 54      BKF                         Bama     Gpg   F     54     0.00
0.00
## 55      BKF                         Arly      Gt   M     55     0.00
0.00
## 56      SEN                  Tambacounda     Gpg   F     56     0.00     4
1.46
## 57      SEN                  Tambacounda     Gpg   M     57     0.00     7
1.79
## 58      SEN                   SebikoURTe     Gpg  NI     58     0.00
5.13
## 59      SAF North eastern KwaZulu-Natal       Ga  NI     59     5.13
5.13
## 60      ZIM                       Makuti      Gp  NI     60    15.79     8
6.84
## 61      KEN                       Obekai     Gff  NI     61     0.00
5.26
## 62      MLI                          SEN     Gpg   F     62     0.00
0.00
## 63      ZAI                          ZAI     Gpp  NI     63    11.43
2.86
## 64      BKF                         Bama     Gpg   M     64     0.00
0.00
## 65      MLI                        Banco     Gpg   F     65     0.00     2
0.59
## 66      BKF                     Dedougou     Gpg   F     66     0.00     5
2.94
## 67      MLI                       Sikasso     Gpg   F     67     0.00
6.06
## 68      BKF                         Comoe    Gmed   F     68    12.12     5
1.52
## 69      GHA                       MorURTi      Gt   M     69     0.00     5
0.00
## 70      BKF                       Sissili      Gt   M     70     0.00     2
5.00
## 71      GUI                     Kangoliya     Gpg   M     71     0.00
0.00
## 72      BKF                       Folonzo    Gmed   F     72     0.00     5
0.00
## 73      BKF                       Folonzo    Gmed   M     73     0.00     4
6.67
## 74      SAF                  SAFint Lucia      Gb  NI     74     0.00     4
3.33
## 75      SWA      Mlawula Nature Reserve       Ga  NI     75     0.00
0.00
## 76      URT                  Uguja island      Ga  NI     76     6.67     1
0.00
## 77      GUI                          Mini     Gpg   F     77     0.00
3.45
```

```
## 78      SEN                      Hann     Gpg  NI     78     0.00
0.00
## 79      UGA                     Omugo      Gp  NI     79   100.00
0.00
## 80      BKF                    Kampty     Gpg   M     80     0.00     8
0.77
## 81      ZIM                   Mushumb      Gp  NI     81     3.85     1
9.23
## 82      GUI                    Kifala     Gpg   M     82     0.00
0.00
## 83      MLI                   Sikasso     Gpg   M     83     0.00
0.00
## 84      MLI                        SS     Gpg   F     84     0.00
4.00
## 85      UGA                      Lira      Gp  NI     85     0.00     1
6.00
## 86      BKF                 Kenedougou     Gpg   F     86     0.00
0.00
## 87      MLI                        SS     Gpg   M     87     0.00
0.00
## 88      BKF                   Dedougou     Gpg   M     88     0.00     6
9.57
## 89      GUI                     Bafing     Gpg   F     89     0.00
5.00
## 90      KEN                      Kiria      Gp  NI     90     0.00     8
0.00
## 91      BKF                    Kampty     Gpg  NI     91     0.00     8
4.21
## 92      GUI                   Tinkisso     Gpg   M     92     0.00
5.56
## 93      ZIM                   Kemukura     Gmm  NI     93    22.22
5.56
## 94      BKF                 Kenedougou     Gpg   M     94     0.00
0.00
## 95      GHA                 Bougouhiya      Gt   F     95     0.00     1
8.75
## 96      GUI                  Dekonkore     Gpg   F     96     0.00
6.25
## 97      GUI                       Mini     Gpg   M     97     0.00
0.00
## 98      SEN              Fleuve Gambie     Gpg   M     98     0.00     4
3.75
## 99      BKF                    Sissili      Gt   F     99     0.00     1
3.33
## 100     ZIM                  Rukomeshi     Gmm  NI    100    20.00
0.00
## 101     KEN             Mwea nat. parc      Gp  NI    101     0.00     1
3.33
## 102     GUI                     Bafing     Gpg   M    102     0.00
0.00
```

```
## 103     GUI                  Tinkisso     Gpg   F    103     0.00
7.69
## 104     BKF          Bouroum bouroum     Gpg   F    104     0.00     9
2.31
## 105     ZIM                Mukondore     Gmm  NI    105    23.08
7.69
## 106     GUI                 Karifale     Gpg   M    106     0.00
8.33
## 107     GUI                 Lemonako     Gpg   F    107     0.00
0.00
## 108     BKF               KouriGUIon     Gpg   F    108     0.00     5
0.00
## 109     MLI                    Bani     Gpg   M    109     0.00
0.00
## 110     MLI                    Sybi     Gpg   F    110     0.00
0.00
## 111     MLI                    Sybi     Gpg   M    111     0.00
0.00
## 112     GHA                  MorURTi      Gt   F    112     0.00     6
6.67
## 113     SEN                 Fleueve G     Gpg   F    113     0.00     1
1.11
## 114     BKF               KouriGUIon     Gpg  NI    114     0.00     2
2.22
## 115     ZIM                 M. chiuyi     Gmm  NI    115    11.11
0.00
## 116     GHA                  Fumbissi      Gt   F    116     0.00    10
0.00
## 117     GUI                 Lemonako     Gpg   M    117     0.00
0.00
## 118     UGA                    Moyo       Gp  NI    118    87.50     1
2.50
## 119     SEN                 Diaguiri     Gpg   F    119     0.00
0.00
## 120     MLI                   Banco     Gpg   M    120     0.00     2
8.57
## 121     MLI                  Baoule     Gpg   F    121     0.00     4
2.86
## 122     MLI                  Baoule     Gpg   M    122     0.00     4
2.86
## 123     MLI                Bougouni     Gpg   M    123     0.00
0.00
## 124     BKF                Lorepeni     Gpg   F    124     0.00     7
1.43
## 125     GHA                  Fumbissi      Gt   M    125     0.00    10
0.00
## 126     GHA                   Grogro       Gt   M    126     0.00    10
0.00
## 127     SEN               MousSAFlla     Gpg   M    127     0.00
0.00
```

```
## 128     MLI                  Baguineda     Gpg   F    128     0.00     1
6.67
## 129     MLI                   Bougouni     Gpg   F    129     0.00
0.00
## 130     MLI                       Kita     Gpg   M    130     0.00     1
6.67
## 131     ZIM                    Mushumb     Gmm  NI    131     0.00     3
3.33
## 132     URT                    Zanzibar      Ga  NI    132    16.67
0.00
## 133     GHA                     Grogro      Gt   F    133     0.00    10
0.00
## 134     GHA                     Kumpole     Gt   F    134     0.00    10
0.00
## 135     GHA                Sissili Bidge     Gt   F    135     0.00    10
0.00
## 136     GUI                     Kifala     Gpg   F    136     0.00
0.00
## 137     BKF             Bouroum bouroum     Gpg   M    137     0.00     8
0.00
## 138     SEN               Fleuve Gambie     Gpg   F    138     0.00     2
5.00
## 139     ZIM                  Rukomeshi      Gp  NI    139     0.00
0.00
## 140     ZIM                      Gokwe      Gp  NI    140     0.00
0.00
## 141     URT                     Jozani      Ga  NI    141     0.00     2
5.00
## 142     GHA                 Bougouhiya      Gt   M    142     0.00
0.00
## 143     SEN                     Niokolo     Gpg   M    143     0.00
0.00
## 144     BKF                     Sissili    Gmsm   M    144     0.00
0.00
## 145     BKF                   Lorepeni     Gpg   M    145     0.00    10
0.00
## 146     BKF                KouriGUIon      Gpg   M    146     0.00     6
6.67
## 147     BKF                   Ouarkoye     Gpg   M    147     0.00    10
0.00
## 148     GHA                     Kumpole     Gt   M    148     0.00    10
0.00
## 149     GHA                      Psikp_     Gt   M    149     0.00    10
0.00
## 150     SEN                   Diaguiri     Gpg   M    150     0.00     5
0.00
## 151     BKF                   Ouarkoye     Gpg   F    151     0.00    10
0.00
## 152     GHA                   Kandiaga      Gt   M    152     0.00    10
0.00
```

```
## 153     GHA                Sissili Bidge      Gt   M    153     0.00    10
0.00
## 154     GHA                      Nabogo      Gt   F    154     0.00
0.00
## 155     GHA                Volta Blanche      Gt   F    155     0.00
0.00
## 156     GUI                     Karifale     Gpg   F    156     0.00
0.00
## 157     SEN                        Mako     Gpg   M    157     0.00    10
0.00
##     Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_T
vTz
## 1      6.10    0.65    1.09    10.46      0.00      0.00       0.65      0
.00
## 2      1.10   13.24    0.37     0.00      0.74      1.10       0.00      0
.00
## 3      3.64   11.36    0.00     0.00      0.00      0.00       0.00      0
.00
## 4      1.51    2.01    0.50     3.02      0.00      0.00       0.00      0
.00
## 5     21.54   15.38    0.51    26.15      6.67      1.54      15.90      1
.03
## 6      7.18    0.51    1.03     7.69      1.03      0.51       0.51      0
.00
## 7      0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 8      1.37    0.68    0.68    34.93      0.00      0.00       7.53      0
.00
## 9      6.16    2.74    0.68     8.22      0.00      0.00       0.68      0
.00
## 10     5.34    3.05    0.00     0.00      0.00      0.76       0.00      0
.00
## 11     1.89   12.26    1.89     0.00      1.89      0.94       0.00      0
.00
## 12     0.94    2.83    1.89     0.00      0.00      0.00       0.00      1
.89
## 13     0.00    5.66    5.66     0.00      0.00      1.89       0.00      2
.83
## 14     2.11   27.37    1.05     0.00      0.00      1.05       0.00      1
.05
## 15     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 16     3.19    2.13    1.06     3.19      0.00      0.00       1.06      0
.00
## 17     1.06    0.00    1.06     0.00      0.00      0.00       0.00      0
.00
## 18     0.00    0.00    0.00     1.14      0.00      0.00       0.00      0
.00
## 19    15.91    9.09    0.00    28.41      0.00      0.00      15.91      0
.00
```

```
## 20    29.89    4.60    0.00    25.29       0.00       0.00       10.34       0
.00
## 21     2.35    0.00    0.00     0.00       0.00       0.00        0.00       0
.00
## 22    18.52    1.23    1.23    18.52       0.00       0.00        6.17       0
.00
## 23    10.00    2.50    2.50     0.00       1.25       0.00        0.00       0
.00
## 24     3.85   12.82    8.97     0.00       0.00      10.26        0.00      14
.10
## 25     0.00   20.51   12.82     0.00       0.00       0.00        0.00      11
.54
## 26    11.54    0.00    2.56    69.23       0.00       0.00        7.69       0
.00
## 27     2.60    0.00    0.00     0.00       0.00       0.00        0.00       0
.00
## 28     5.33    2.67    1.33     0.00       0.00       1.33        0.00       0
.00
## 29     5.33   34.67    0.00     0.00       0.00       0.00        0.00       0
.00
## 30     1.41    1.41    0.00     0.00       0.00       0.00        0.00       0
.00
## 31    33.80    0.00    0.00    14.08       0.00       1.41       21.13       1
.41
## 32     0.00    0.00    0.00     0.00       0.00       0.00        0.00       0
.00
## 33     0.00    0.00    0.00     0.00       0.00       0.00        0.00       0
.00
## 34     0.00    1.54    1.54     4.62       0.00       0.00        0.00       0
.00
## 35     0.00    6.25   15.63     0.00       0.00       0.00        0.00       0
.00
## 37     6.56   13.11    4.92     0.00       0.00       0.00        0.00       0
.00
## 38    15.00    8.33    0.00    58.33       1.67       0.00       10.00       0
.00
## 39     5.08   11.86    1.69     0.00       0.00       1.69        0.00       0
.00
## 40     0.00    1.72    0.00     0.00       0.00       0.00        0.00       0
.00
## 41    10.53    0.00   10.53    15.79       0.00       0.00        1.75       0
.00
## 42     1.82    0.00    0.00     5.45       0.00       0.00        0.00       0
.00
## 43     1.89    9.43   24.53     0.00       0.00      16.98        0.00       7
.55
## 44     0.00    0.00    1.89     0.00       0.00       0.00        0.00       0
.00
## 45     1.89   62.26    1.89    11.32       0.00       0.00        0.00       0
.00
```

```
## 46     9.43    1.89    3.77    24.53       1.89       0.00       1.89       0
.00
## 47     1.92    0.00    0.00     0.00       0.00       0.00       0.00       0
.00
## 48     1.92    1.92    3.85     0.00       0.00       0.00       0.00       0
.00
## 49     1.96    9.80    0.00    19.61       3.92       1.96       0.00       0
.00
## 50    12.00    2.00   14.00     4.00       0.00       0.00       0.00       0
.00
## 51     2.00    0.00    0.00     2.00       0.00       0.00       0.00       0
.00
## 52     0.00    2.00    0.00     2.00       0.00       0.00       0.00       0
.00
## 53     6.00    0.00    0.00     4.00       0.00       0.00       0.00       0
.00
## 54     0.00    0.00    0.00     0.00       0.00       0.00       0.00       0
.00
## 55     0.00    0.00    0.00     0.00       0.00       0.00       0.00       0
.00
## 56     0.00   26.83    7.32     0.00       0.00       0.00       0.00       7
.32
## 57     0.00   53.85    2.56     0.00       0.00       0.00       0.00      15
.38
## 58     0.00    5.13    0.00     0.00       0.00       0.00       0.00       0
.00
## 59     2.56    0.00    0.00     2.56       0.00       0.00       0.00       0
.00
## 60     7.89    0.00    0.00    73.68       0.00       0.00       5.26       0
.00
## 61     2.63    2.63    0.00     0.00       0.00       0.00       0.00       0
.00
## 62     0.00    0.00    0.00     0.00       0.00       0.00       0.00       0
.00
## 63     0.00    2.86    0.00     0.00       0.00       0.00       0.00       0
.00
## 64     0.00    0.00    0.00     0.00       0.00       0.00       0.00       0
.00
## 65     0.00   20.59    0.00     0.00       0.00       0.00       0.00       0
.00
## 66     0.00   26.47    0.00    23.53       0.00       0.00       0.00       0
.00
## 67     0.00    0.00    6.06     0.00       0.00       0.00       0.00       0
.00
## 68    30.30   18.18    0.00     0.00       0.00       0.00       0.00       0
.00
## 69     0.00   15.63   15.63     0.00       0.00      18.75       0.00       0
.00
## 70    12.50   12.50    0.00     0.00       0.00       0.00       0.00       0
.00
```

```
## 71     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 72     0.00   13.33   26.67     0.00      0.00      3.33       0.00      3
.33
## 73     0.00    0.00   33.33     0.00      6.67      3.33       0.00      0
.00
## 74     0.00    3.33    3.33    36.67      0.00      0.00       0.00      0
.00
## 75     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 76     0.00    6.67    3.33     0.00      0.00      0.00       0.00      0
.00
## 77     0.00    3.45    0.00     0.00      0.00      0.00       0.00      0
.00
## 78     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 79     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 80     0.00   65.38    0.00     7.69      0.00      0.00       0.00      0
.00
## 81     3.85    0.00    7.69     3.85      0.00      0.00       3.85      0
.00
## 82     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 83     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 84     0.00    4.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 85     8.00    0.00    4.00     4.00      0.00      0.00       0.00      0
.00
## 86     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 87     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 88     4.35   30.43   13.04     4.35      0.00      0.00       4.35      0
.00
## 89     0.00    5.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 90    55.00    5.00    0.00    10.00     10.00      0.00       0.00      0
.00
## 91     0.00   26.32    5.26    21.05      0.00      0.00       0.00      0
.00
## 92     0.00    5.56    0.00     0.00      0.00      0.00       0.00      0
.00
## 93     0.00    5.56    0.00     0.00      0.00      0.00       0.00      0
.00
## 94     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 95     0.00    6.25    0.00     0.00      0.00      0.00       0.00     12
.50
```

```
## 96     0.00    6.25    0.00     0.00      0.00      0.00       0.00      0
.00
## 97     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 98     0.00   43.75    0.00     0.00      0.00      0.00       0.00      0
.00
## 99     6.67    6.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 100    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 101   13.33    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 102    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 103    0.00    7.69    0.00     0.00      0.00      0.00       0.00      0
.00
## 104    0.00   53.85    0.00    23.08      0.00      0.00       0.00      0
.00
## 105    7.69    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 106    0.00    8.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 107    0.00    8.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 108    0.00    0.00    0.00    33.33      0.00      0.00       0.00      0
.00
## 109    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 110    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 111    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 112    0.00    0.00   33.33     0.00      0.00     22.22       0.00     11
.11
## 113    0.00   11.11    0.00     0.00      0.00      0.00       0.00      0
.00
## 114    0.00    0.00    0.00    11.11      0.00      0.00       0.00      0
.00
## 115    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 116    0.00    0.00   37.50     0.00      0.00      0.00       0.00     62
.50
## 117    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 118    0.00    0.00    0.00    12.50      0.00      0.00       0.00      0
.00
## 119    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 120    0.00   28.57    0.00     0.00      0.00      0.00       0.00      0
.00
```

```
## 121    0.00   42.86    0.00     0.00      0.00      0.00       0.00      0
.00
## 122    0.00   42.86    0.00     0.00      0.00      0.00       0.00      0
.00
## 123    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 124    0.00   14.29    0.00    28.57      0.00      0.00       0.00      0
.00
## 125    0.00   66.67   33.33     0.00      0.00      0.00       0.00      0
.00
## 126    0.00    0.00   16.67     0.00      0.00      0.00       0.00     83
.33
## 127    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 128    0.00   16.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 129    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 130    0.00   16.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 131   16.67    0.00    0.00    16.67      0.00      0.00       0.00      0
.00
## 132    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 133    0.00   80.00   20.00     0.00      0.00      0.00       0.00      0
.00
## 134    0.00   40.00   60.00     0.00      0.00      0.00       0.00      0
.00
## 135    0.00   20.00   80.00     0.00      0.00      0.00       0.00      0
.00
## 136    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 137    0.00   40.00    0.00    20.00      0.00      0.00       0.00      0
.00
## 138    0.00   25.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 139    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 140    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 141    0.00    0.00   25.00     0.00      0.00      0.00       0.00      0
.00
## 142    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 143    0.00   66.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 144    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 145    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
```

```
## 146    0.00   33.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 147    0.00   33.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 148    0.00   50.00   50.00     0.00      0.00      0.00       0.00      0
.00
## 149    0.00    0.00   50.00     0.00      0.00      0.00       0.00     50
.00
## 150    0.00    0.00   50.00     0.00      0.00      0.00       0.00      0
.00
## 151   50.00   50.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 152    0.00    0.00  100.00     0.00      0.00      0.00       0.00      0
.00
## 153    0.00    0.00  100.00     0.00      0.00      0.00       0.00      0
.00
## 154    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 155    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 156    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 157    0.00  100.00    0.00     0.00      0.00      0.00       0.00      0
.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 1         0.44       0.65        0.00
## 2         0.00       0.00        0.00
## 3         0.00       0.00        0.00
## 4         0.00       0.00        0.00
## 5         0.00       0.00        0.00
## 6         0.00       1.03        0.00
## 7         0.00       0.00        0.00
## 8         0.00       0.00        0.00
## 9         0.68       0.68        0.00
## 10        0.00       0.00        0.00
## 11        0.00       0.00        0.00
## 12        0.00       0.00        0.00
## 13        0.00       0.00        0.00
## 14        0.00       0.00        0.00
## 15        0.00       0.00        0.00
## 16        0.00       0.00        0.00
## 17        0.00       0.00        0.00
## 18        0.00       0.00        0.00
## 19        0.00       2.27        0.00
## 20        0.00       0.00        0.00
## 21        0.00       0.00        0.00
## 22        6.17       1.23        0.00
## 23        1.25       0.00        0.00
## 24        0.00       0.00        1.28
## 25        0.00       0.00        0.00
```

```
## 26        0.00       0.00        0.00
## 27        0.00       0.00        0.00
## 28        0.00       0.00        0.00
## 29        0.00       0.00        0.00
## 30        0.00       0.00        0.00
## 31        0.00       1.41        0.00
## 32        0.00       0.00        0.00
## 33        0.00       0.00        0.00
## 34        0.00       0.00        0.00
## 35        0.00       0.00        0.00
## 37        0.00       0.00        0.00
## 38        0.00       0.00        0.00
## 39        0.00       0.00        0.00
## 40        0.00       0.00        0.00
## 41        0.00       0.00        0.00
## 42        0.00       0.00        0.00
## 43        0.00       0.00        5.66
## 44        0.00       0.00        0.00
## 45        9.43       3.77        0.00
## 46        0.00       0.00        0.00
## 47        0.00       0.00        0.00
## 48        0.00       0.00        0.00
## 49        0.00       0.00        0.00
## 50        0.00       0.00        0.00
## 51        0.00       0.00        0.00
## 52        2.00       0.00        0.00
## 53        0.00       0.00        0.00
## 54        0.00       0.00        0.00
## 55        0.00       0.00        0.00
## 56        0.00       0.00        0.00
## 57        0.00       0.00        0.00
## 58        0.00       0.00        0.00
## 59        0.00       0.00        0.00
## 60        0.00       0.00        0.00
## 61        0.00       0.00        0.00
## 62        0.00       0.00        0.00
## 63        0.00       0.00        0.00
## 64        0.00       0.00        0.00
## 65        0.00       0.00        0.00
## 66        2.94       0.00        0.00
## 67        0.00       0.00        0.00
## 68        0.00       0.00        0.00
## 69        0.00       0.00        0.00
## 70        0.00       0.00        0.00
## 71        0.00       0.00        0.00
## 72        0.00       0.00        3.33
## 73        0.00       0.00        3.33
## 74        0.00       0.00        0.00
## 75        0.00       0.00        0.00
## 76        0.00       0.00        0.00
```

```
## 77        0.00       0.00        0.00
## 78        0.00       0.00        0.00
## 79        0.00       0.00        0.00
## 80        7.69       0.00        0.00
## 81        0.00       0.00        0.00
## 82        0.00       0.00        0.00
## 83        0.00       0.00        0.00
## 84        0.00       0.00        0.00
## 85        0.00       0.00        0.00
## 86        0.00       0.00        0.00
## 87        0.00       0.00        0.00
## 88        4.35       8.70        0.00
## 89        0.00       0.00        0.00
## 90        0.00       0.00        0.00
## 91       31.58       0.00        0.00
## 92        0.00       0.00        0.00
## 93        0.00       0.00        0.00
## 94        0.00       0.00        0.00
## 95        0.00       0.00        0.00
## 96        0.00       0.00        0.00
## 97        0.00       0.00        0.00
## 98        0.00       0.00        0.00
## 99        0.00       0.00        0.00
## 100       0.00       0.00        0.00
## 101       0.00       0.00        0.00
## 102       0.00       0.00        0.00
## 103       0.00       0.00        0.00
## 104      15.38       0.00        0.00
## 105       0.00       0.00        0.00
## 106       0.00       0.00        0.00
## 107       0.00       0.00        0.00
## 108      16.67       0.00        0.00
## 109       0.00       0.00        0.00
## 110       0.00       0.00        0.00
## 111       0.00       0.00        0.00
## 112       0.00       0.00        0.00
## 113       0.00       0.00        0.00
## 114      11.11       0.00        0.00
## 115       0.00       0.00        0.00
## 116       0.00       0.00        0.00
## 117       0.00       0.00        0.00
## 118       0.00       0.00        0.00
## 119       0.00       0.00        0.00
## 120       0.00       0.00        0.00
## 121       0.00       0.00        0.00
## 122       0.00       0.00        0.00
## 123       0.00       0.00        0.00
## 124      28.57       0.00        0.00
## 125       0.00       0.00        0.00
## 126       0.00       0.00        0.00
```

```
## 127       0.00       0.00        0.00
## 128       0.00       0.00        0.00
## 129       0.00       0.00        0.00
## 130       0.00       0.00        0.00
## 131       0.00       0.00        0.00
## 132       0.00       0.00        0.00
## 133       0.00       0.00        0.00
## 134       0.00       0.00        0.00
## 135       0.00       0.00        0.00
## 136       0.00       0.00        0.00
## 137      20.00       0.00        0.00
## 138       0.00       0.00        0.00
## 139       0.00       0.00        0.00
## 140       0.00       0.00        0.00
## 141       0.00       0.00        0.00
## 142       0.00       0.00        0.00
## 143       0.00       0.00        0.00
## 144       0.00       0.00        0.00
## 145      66.67      33.33        0.00
## 146      33.33       0.00        0.00
## 147      33.33      33.33        0.00
## 148       0.00       0.00        0.00
## 149       0.00       0.00        0.00
## 150       0.00       0.00        0.00
## 151       0.00       0.00        0.00
## 152       0.00       0.00        0.00
## 153       0.00       0.00        0.00
## 154       0.00       0.00        0.00
## 155       0.00       0.00        0.00
## 156       0.00       0.00        0.00
## 157       0.00       0.00        0.00
```

```
data$Country=as.factor(data$Country)
data$Localisation=as.factor(data$Localisation)
data$Species=as.factor(data$Species)
data$Sex=as.factor(data$Sex)
str(data)
```

```
## 'data.frame':    156 obs. of  18 variables:
##  $ Country     : Factor w/ 15 levels "BKF","ETH","GHA",..: 2 1 1 9 5 5 8 1
4 12 1 ...
##  $ Localisation: Factor w/ 94 levels "Arba minch, nech SAFr",..: 1 14 14 7
4 37 65 73 56 90 14 ...
##  $ Species     : Factor w/ 10 levels "Ga","Gb","Gff",..: 7 10 10 8 7 7 2 7
7 6 ...
##  $ Sex         : Factor w/ 3 levels "F","M","NI": 3 1 2 3 3 3 3 3 3 1 ...
##  $ Sample      : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ Prev_Sod    : num  20.5 0 0 0 42.6 ...
##  $ Prev_Tspp   : num  20.04 16.54 15 7.04 88.72 ...
##  $ Prev_Tc     : num  6.1 1.1 3.64 1.51 21.54 ...
```

```
##  $ Prev_Tv     : num  0.65 13.24 11.36 2.01 15.38 ...
##  $ Prev_Tz     : num  1.09 0.37 0 0.5 0.51 1.03 0 0.68 0.68 0 ...
##  $ Prev_Tsg    : num  10.46 0 0 3.02 26.15 ...
##  $ Prev_TcTv   : num  0 0.74 0 0 6.67 1.03 0 0 0 0 ...
##  $ Prev_TcTz   : num  0 1.1 0 0 1.54 0.51 0 0 0 0.76 ...
##  $ Prev_TcTsg  : num  0.65 0 0 0 15.9 0.51 0 7.53 0.68 0 ...
##  $ Prev_TvTz   : num  0 0 0 0 1.03 0 0 0 0 0 ...
##  $ Prev_TvTsg  : num  0.44 0 0 0 0 0 0 0 0.68 0 ...
##  $ Prev_TzTsg  : num  0.65 0 0 0 0 1.03 0 0 0.68 0 ...
##  $ Prev_TcTvTz : num  0 0 0 0 0 0 0 0 0 0 ...
##  - attr(*, "na.action")= 'omit' Named int 36
##   ..- attr(*, "names")= chr "36"

attach(data)

## The following objects are masked from data (pos = 3):
##
##     Country, Localisation, Prev_Sod, Prev_Tc, Prev_TcTsg, Prev_TcTv,
##     Prev_TcTvTz, Prev_TcTz, Prev_Tsg, Prev_Tspp, Prev_Tv, Prev_TvTsg,
##     Prev_TvTz, Prev_Tz, Prev_TzTsg, Sample, Sex, Species

head(data)

##   Country          Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev
_Tc
## 1     ETH Arba minch, nech SAFr      Gp  NI      1    20.48     20.04    6
.10
## 2     BKF                 Comoe      Gt   F      2     0.00     16.54    1
.10
## 3     BKF                 Comoe      Gt   M      3     0.00     15.00    3
.64
## 4     SEN                  Pout     Gpg  NI      4     0.00      7.04    1
.51
## 5     KEN               Katotoi      Gp  NI      5    42.56     88.72   21
.54
## 6     KEN                  Mwea      Gp  NI      6     3.08     19.49    7
.18
##   Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_T
vTsg
## 1    0.65    1.09    10.46      0.00      0.00       0.65      0.00
0.44
## 2   13.24    0.37     0.00      0.74      1.10       0.00      0.00
0.00
## 3   11.36    0.00     0.00      0.00      0.00       0.00      0.00
0.00
## 4    2.01    0.50     3.02      0.00      0.00       0.00      0.00
0.00
## 5   15.38    0.51    26.15      6.67      1.54      15.90      1.03
0.00
## 6    0.51    1.03     7.69      1.03      0.51       0.51      0.00
0.00
```

```
##   Prev_TzTsg Prev_TcTvTz
## 1       0.65           0
## 2       0.00           0
## 3       0.00           0
## 4       0.00           0
## 5       0.00           0
## 6       1.03           0

data=na.omit(data)
data

##     Country                 Localisation Species Sex Sample Prev_Sod Prev_
Tspp
## 1       ETH        Arba minch, nech SAFr      Gp  NI      1    20.48     2
0.04
## 2       BKF                       Comoe      Gt   F      2     0.00     1
6.54
## 3       BKF                       Comoe      Gt   M      3     0.00     1
5.00
## 4       SEN                        Pout     Gpg  NI      4     0.00
7.04
## 5       KEN                     Katotoi      Gp  NI      5    42.56     8
8.72
## 6       KEN                       Mwea      Gp  NI      6     3.08     1
9.49
## 7       SAF                      Phinda      Gb  NI      7     4.12
0.00
## 8       ZAM                       Mfuwe      Gp  NI      8     2.05     4
5.21
## 9       URT                     URTzania      Gp  NI      9    78.77     1
9.86
## 10      BKF                       Comoe    Gmsm   F     10     0.00
9.16
## 11      BKF                     Folonzo      Gt   F     11     0.00     1
8.87
## 12      BKF                     Folonzo     Gpg   F     12     0.00
7.55
## 13      BKF                     Folonzo     Gpg   M     13     1.89     1
6.04
## 14      BKF                     Folonzo      Gt   M     14     0.00     3
2.63
## 15      GUI                    Kangoliya     Gpg   F     15    95.74
0.00
## 16      UGA                Buvuma island     Gff  NI     16     4.26     1
0.64
## 17      KEN                        Kari      Gp  NI     17    89.36
2.13
## 18      SEN                       Kayar     Gpg  NI     18     0.00
1.14
## 19      KEN                      Koibos      Gp  NI     19     0.00     7
```

```
1.59
## 20      KEN               Meru nat. parc      Gp  NI     20    22.99     7
0.11
## 21      KEN                         Kari     Gmm  NI     21    63.53
2.35
## 22      URT                MaSAFng-URTga     Gmm  NI     22    76.54     5
3.09
## 23      KEN               Ruma nat. parc      Gp  NI     23    26.25     1
7.50
## 24      GHA                      Walewale     Gt   M     24     0.00     5
3.85
## 25      BKF                  Moussodougou     Gpg  F     25     0.00     4
4.87
## 26      ZIM                        Makuti     Gmm  NI     26    26.92     9
1.03
## 27      SAF               False Bay Park      Ga  NI     27     0.00
2.60
## 28      BKF                         Comoe    Gmsm   M     28     0.00     1
0.67
## 29      BKF                       Folonzo    Gmsm   M     29     0.00     4
0.00
## 30      BKF                         Comoe     Gpg   F     30     0.00
2.82
## 31      URT                MaSAFng-URTga      Gp  NI     31    66.20     7
3.24
## 32      BKF                      Kartasso     Gpg   F     32     0.00
0.00
## 33      BKF                      Kartasso     Gpg   M     33     0.00
0.00
## 34      SEN              DiackSAFo Peulh      Gpg  NI     34     0.00
7.69
## 35      BKF                  Moussodougou     Gpg   M     35     0.00     2
1.88
## 37      BKF                         Comoe    Gmed   M     37     6.56     2
4.59
## 38      KEN                         Emsos      Gp  NI     38     0.00     9
3.33
## 39      BKF                       Folonzo    Gmsm   F     39     1.69     2
0.34
## 40      MLI                          Bani     Gpg   F     40     0.00
1.72
## 41      SAF                 SAFint Lucia      Ga  NI     41     0.00     3
8.60
## 42      UGA                        Budaka      Gp  NI     42    94.55
7.27
## 43      GHA                      Walewale      Gt   F     43     0.00     6
6.04
## 44      BKF                          Arly      Gt   F     44     0.00
1.89
## 45      BKF                        Kampty     Gpg   F     45     0.00     9
```

```
0.57
## 46      SAF                 Lower Mkhuze      Ga  NI     46     0.00     4
3.40
## 47      BKF                        Comoe     Gpg   M     47     0.00
1.92
## 48      MLI                          SEN     Gpg   M     48     0.00
7.69
## 49      KEN                      Ikapolok     Gff  NI     49    39.22     3
7.25
## 50      SAF                      Hluhluwe      Gb  NI     50     0.00     3
2.00
## 51      SAF North eastern KwaZulu-Natal       Gb  NI     51     0.00
4.00
## 52      MOZ   Reserva Especial de Maputo      Gb  NI     52    14.00
6.00
## 53      MOZ   Reserva Especial de Maputo      Ga  NI     53     0.00     1
0.00
## 54      BKF                          Bama     Gpg   F     54     0.00
0.00
## 55      BKF                          Arly      Gt   M     55     0.00
0.00
## 56      SEN                   Tambacounda     Gpg   F     56     0.00     4
1.46
## 57      SEN                   Tambacounda     Gpg   M     57     0.00     7
1.79
## 58      SEN                    SebikoURTe     Gpg  NI     58     0.00
5.13
## 59      SAF North eastern KwaZulu-Natal       Ga  NI     59     5.13
5.13
## 60      ZIM                        Makuti      Gp  NI     60    15.79     8
6.84
## 61      KEN                        Obekai     Gff  NI     61     0.00
5.26
## 62      MLI                          SEN     Gpg   F     62     0.00
0.00
## 63      ZAI                          ZAI     Gpp  NI     63    11.43
2.86
## 64      BKF                          Bama     Gpg   M     64     0.00
0.00
## 65      MLI                          Banco     Gpg   F     65     0.00     2
0.59
## 66      BKF                       Dedougou     Gpg   F     66     0.00     5
2.94
## 67      MLI                        Sikasso     Gpg   F     67     0.00
6.06
## 68      BKF                          Comoe    Gmed   F     68    12.12     5
1.52
## 69      GHA                        MorURTi      Gt   M     69     0.00     5
0.00
## 70      BKF                        Sissili      Gt   M     70     0.00     2
```

```
5.00
## 71      GUI                    Kangoliya     Gpg   M     71     0.00
0.00
## 72      BKF                      Folonzo    Gmed   F     72     0.00     5
0.00
## 73      BKF                      Folonzo    Gmed   M     73     0.00     4
6.67
## 74      SAF                  SAFint Lucia      Gb  NI     74     0.00     4
3.33
## 75      SWA      Mlawula Nature Reserve       Ga  NI     75     0.00
0.00
## 76      URT                  Uguja island      Ga  NI     76     6.67     1
0.00
## 77      GUI                         Mini     Gpg   F     77     0.00
3.45
## 78      SEN                         Hann     Gpg  NI     78     0.00
0.00
## 79      UGA                        Omugo      Gp  NI     79   100.00
0.00
## 80      BKF                       Kampty     Gpg   M     80     0.00     8
0.77
## 81      ZIM                       Mushumb      Gp  NI     81     3.85     1
9.23
## 82      GUI                        Kifala     Gpg   M     82     0.00
0.00
## 83      MLI                       Sikasso     Gpg   M     83     0.00
0.00
## 84      MLI                            SS     Gpg   F     84     0.00
4.00
## 85      UGA                          Lira      Gp  NI     85     0.00     1
6.00
## 86      BKF                     Kenedougou     Gpg   F     86     0.00
0.00
## 87      MLI                            SS     Gpg   M     87     0.00
0.00
## 88      BKF                       Dedougou     Gpg   M     88     0.00     6
9.57
## 89      GUI                        Bafing     Gpg   F     89     0.00
5.00
## 90      KEN                         Kiria      Gp  NI     90     0.00     8
0.00
## 91      BKF                       Kampty     Gpg  NI     91     0.00     8
4.21
## 92      GUI                       Tinkisso     Gpg   M     92     0.00
5.56
## 93      ZIM                       Kemukura     Gmm  NI     93    22.22
5.56
## 94      BKF                     Kenedougou     Gpg   M     94     0.00
0.00
## 95      GHA                     Bougouhiya      Gt   F     95     0.00     1
```

```
8.75
## 96      GUI                    Dekonkore     Gpg   F     96     0.00
6.25
## 97      GUI                         Mini     Gpg   M     97     0.00
0.00
## 98      SEN                 Fleuve Gambie     Gpg   M     98     0.00     4
3.75
## 99      BKF                       Sissili      Gt   F     99     0.00     1
3.33
## 100     ZIM                    Rukomeshi     Gmm  NI    100    20.00
0.00
## 101     KEN                Mwea nat. parc      Gp  NI    101     0.00     1
3.33
## 102     GUI                         Bafing     Gpg   M    102     0.00
0.00
## 103     GUI                       Tinkisso     Gpg   F    103     0.00
7.69
## 104     BKF                Bouroum bouroum     Gpg   F    104     0.00     9
2.31
## 105     ZIM                    Mukondore     Gmm  NI    105    23.08
7.69
## 106     GUI                       Karifale     Gpg   M    106     0.00
8.33
## 107     GUI                       Lemonako     Gpg   F    107     0.00
0.00
## 108     BKF                    KouriGUIon     Gpg   F    108     0.00     5
0.00
## 109     MLI                         Bani     Gpg   M    109     0.00
0.00
## 110     MLI                         Sybi     Gpg   F    110     0.00
0.00
## 111     MLI                         Sybi     Gpg   M    111     0.00
0.00
## 112     GHA                      MorURTi      Gt   F    112     0.00     6
6.67
## 113     SEN                    Fleueve G     Gpg   F    113     0.00     1
1.11
## 114     BKF                    KouriGUIon     Gpg  NI    114     0.00     2
2.22
## 115     ZIM                     M. chiuyi     Gmm  NI    115    11.11
0.00
## 116     GHA                       Fumbissi      Gt   F    116     0.00    10
0.00
## 117     GUI                       Lemonako     Gpg   M    117     0.00
0.00
## 118     UGA                          Moyo      Gp  NI    118    87.50     1
2.50
## 119     SEN                       Diaguiri     Gpg   F    119     0.00
0.00
## 120     MLI                          Banco     Gpg   M    120     0.00     2
```

```
8.57
## 121     MLI                    Baoule     Gpg   F    121     0.00     4
2.86
## 122     MLI                    Baoule     Gpg   M    122     0.00     4
2.86
## 123     MLI                  Bougouni     Gpg   M    123     0.00
0.00
## 124     BKF                  Lorepeni     Gpg   F    124     0.00     7
1.43
## 125     GHA                  Fumbissi      Gt   M    125     0.00    10
0.00
## 126     GHA                    Grogro      Gt   M    126     0.00    10
0.00
## 127     SEN                 MousSAFlla     Gpg   M    127     0.00
0.00
## 128     MLI                  Baguineda     Gpg   F    128     0.00     1
6.67
## 129     MLI                  Bougouni     Gpg   F    129     0.00
0.00
## 130     MLI                      Kita     Gpg   M    130     0.00     1
6.67
## 131     ZIM                   Mushumb     Gmm  NI    131     0.00     3
3.33
## 132     URT                  Zanzibar      Ga  NI    132    16.67
0.00
## 133     GHA                    Grogro      Gt   F    133     0.00    10
0.00
## 134     GHA                   Kumpole      Gt   F    134     0.00    10
0.00
## 135     GHA             Sissili Bidge      Gt   F    135     0.00    10
0.00
## 136     GUI                    Kifala     Gpg   F    136     0.00
0.00
## 137     BKF           Bouroum bouroum     Gpg   M    137     0.00     8
0.00
## 138     SEN             Fleuve Gambie     Gpg   F    138     0.00     2
5.00
## 139     ZIM                 Rukomeshi      Gp  NI    139     0.00
0.00
## 140     ZIM                     Gokwe      Gp  NI    140     0.00
0.00
## 141     URT                    Jozani      Ga  NI    141     0.00     2
5.00
## 142     GHA                 Bougouhiya      Gt   M    142     0.00
0.00
## 143     SEN                    Niokolo     Gpg   M    143     0.00
0.00
## 144     BKF                    Sissili    Gmsm   M    144     0.00
0.00
## 145     BKF                  Lorepeni     Gpg   M    145     0.00    10
```

```
0.00
## 146     BKF                   KouriGUIon     Gpg   M    146     0.00     6
6.67
## 147     BKF                     Ouarkoye     Gpg   M    147     0.00    10
0.00
## 148     GHA                      Kumpole      Gt   M    148     0.00    10
0.00
## 149     GHA                       Psikp_      Gt   M    149     0.00    10
0.00
## 150     SEN                     Diaguiri     Gpg   M    150     0.00     5
0.00
## 151     BKF                     Ouarkoye     Gpg   F    151     0.00    10
0.00
## 152     GHA                     Kandiaga      Gt   M    152     0.00    10
0.00
## 153     GHA                Sissili Bidge      Gt   M    153     0.00    10
0.00
## 154     GHA                       Nabogo      Gt   F    154     0.00
0.00
## 155     GHA                Volta Blanche      Gt   F    155     0.00
0.00
## 156     GUI                      Karifale     Gpg   F    156     0.00
0.00
## 157     SEN                         Mako     Gpg   M    157     0.00    10
0.00
##     Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_T
vTz
## 1      6.10    0.65    1.09    10.46      0.00      0.00       0.65      0
.00
## 2      1.10   13.24    0.37     0.00      0.74      1.10       0.00      0
.00
## 3      3.64   11.36    0.00     0.00      0.00      0.00       0.00      0
.00
## 4      1.51    2.01    0.50     3.02      0.00      0.00       0.00      0
.00
## 5     21.54   15.38    0.51    26.15      6.67      1.54      15.90      1
.03
## 6      7.18    0.51    1.03     7.69      1.03      0.51       0.51      0
.00
## 7      0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 8      1.37    0.68    0.68    34.93      0.00      0.00       7.53      0
.00
## 9      6.16    2.74    0.68     8.22      0.00      0.00       0.68      0
.00
## 10     5.34    3.05    0.00     0.00      0.00      0.76       0.00      0
.00
## 11     1.89   12.26    1.89     0.00      1.89      0.94       0.00      0
.00
## 12     0.94    2.83    1.89     0.00      0.00      0.00       0.00      1
```

```
.89
## 13     0.00    5.66    5.66     0.00      0.00      1.89       0.00      2
.83
## 14     2.11   27.37    1.05     0.00      0.00      1.05       0.00      1
.05
## 15     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 16     3.19    2.13    1.06     3.19      0.00      0.00       1.06      0
.00
## 17     1.06    0.00    1.06     0.00      0.00      0.00       0.00      0
.00
## 18     0.00    0.00    0.00     1.14      0.00      0.00       0.00      0
.00
## 19    15.91    9.09    0.00    28.41      0.00      0.00      15.91      0
.00
## 20    29.89    4.60    0.00    25.29      0.00      0.00      10.34      0
.00
## 21     2.35    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 22    18.52    1.23    1.23    18.52      0.00      0.00       6.17      0
.00
## 23    10.00    2.50    2.50     0.00      1.25      0.00       0.00      0
.00
## 24     3.85   12.82    8.97     0.00      0.00     10.26       0.00     14
.10
## 25     0.00   20.51   12.82     0.00      0.00      0.00       0.00     11
.54
## 26    11.54    0.00    2.56    69.23      0.00      0.00       7.69      0
.00
## 27     2.60    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 28     5.33    2.67    1.33     0.00      0.00      1.33       0.00      0
.00
## 29     5.33   34.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 30     1.41    1.41    0.00     0.00      0.00      0.00       0.00      0
.00
## 31    33.80    0.00    0.00    14.08      0.00      1.41      21.13      1
.41
## 32     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 33     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 34     0.00    1.54    1.54     4.62      0.00      0.00       0.00      0
.00
## 35     0.00    6.25   15.63     0.00      0.00      0.00       0.00      0
.00
## 37     6.56   13.11    4.92     0.00      0.00      0.00       0.00      0
.00
## 38    15.00    8.33    0.00    58.33      1.67      0.00      10.00      0
```

```
.00
## 39     5.08   11.86    1.69     0.00      0.00      1.69       0.00      0
.00
## 40     0.00    1.72    0.00     0.00      0.00      0.00       0.00      0
.00
## 41    10.53    0.00   10.53    15.79      0.00      0.00       1.75      0
.00
## 42     1.82    0.00    0.00     5.45      0.00      0.00       0.00      0
.00
## 43     1.89    9.43   24.53     0.00      0.00     16.98       0.00      7
.55
## 44     0.00    0.00    1.89     0.00      0.00      0.00       0.00      0
.00
## 45     1.89   62.26    1.89    11.32      0.00      0.00       0.00      0
.00
## 46     9.43    1.89    3.77    24.53      1.89      0.00       1.89      0
.00
## 47     1.92    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 48     1.92    1.92    3.85     0.00      0.00      0.00       0.00      0
.00
## 49     1.96    9.80    0.00    19.61      3.92      1.96       0.00      0
.00
## 50    12.00    2.00   14.00     4.00      0.00      0.00       0.00      0
.00
## 51     2.00    0.00    0.00     2.00      0.00      0.00       0.00      0
.00
## 52     0.00    2.00    0.00     2.00      0.00      0.00       0.00      0
.00
## 53     6.00    0.00    0.00     4.00      0.00      0.00       0.00      0
.00
## 54     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 55     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 56     0.00   26.83    7.32     0.00      0.00      0.00       0.00      7
.32
## 57     0.00   53.85    2.56     0.00      0.00      0.00       0.00     15
.38
## 58     0.00    5.13    0.00     0.00      0.00      0.00       0.00      0
.00
## 59     2.56    0.00    0.00     2.56      0.00      0.00       0.00      0
.00
## 60     7.89    0.00    0.00    73.68      0.00      0.00       5.26      0
.00
## 61     2.63    2.63    0.00     0.00      0.00      0.00       0.00      0
.00
## 62     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 63     0.00    2.86    0.00     0.00      0.00      0.00       0.00      0
```

```
.00
## 64     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 65     0.00   20.59    0.00     0.00      0.00      0.00       0.00      0
.00
## 66     0.00   26.47    0.00    23.53      0.00      0.00       0.00      0
.00
## 67     0.00    0.00    6.06     0.00      0.00      0.00       0.00      0
.00
## 68    30.30   18.18    0.00     0.00      0.00      0.00       0.00      0
.00
## 69     0.00   15.63   15.63     0.00      0.00     18.75       0.00      0
.00
## 70    12.50   12.50    0.00     0.00      0.00      0.00       0.00      0
.00
## 71     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 72     0.00   13.33   26.67     0.00      0.00      3.33       0.00      3
.33
## 73     0.00    0.00   33.33     0.00      6.67      3.33       0.00      0
.00
## 74     0.00    3.33    3.33    36.67      0.00      0.00       0.00      0
.00
## 75     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 76     0.00    6.67    3.33     0.00      0.00      0.00       0.00      0
.00
## 77     0.00    3.45    0.00     0.00      0.00      0.00       0.00      0
.00
## 78     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 79     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 80     0.00   65.38    0.00     7.69      0.00      0.00       0.00      0
.00
## 81     3.85    0.00    7.69     3.85      0.00      0.00       3.85      0
.00
## 82     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 83     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 84     0.00    4.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 85     8.00    0.00    4.00     4.00      0.00      0.00       0.00      0
.00
## 86     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 87     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 88     4.35   30.43   13.04     4.35      0.00      0.00       4.35      0
```

```
.00
## 89     0.00    5.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 90    55.00    5.00    0.00    10.00     10.00      0.00       0.00      0
.00
## 91     0.00   26.32    5.26    21.05      0.00      0.00       0.00      0
.00
## 92     0.00    5.56    0.00     0.00      0.00      0.00       0.00      0
.00
## 93     0.00    5.56    0.00     0.00      0.00      0.00       0.00      0
.00
## 94     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 95     0.00    6.25    0.00     0.00      0.00      0.00       0.00     12
.50
## 96     0.00    6.25    0.00     0.00      0.00      0.00       0.00      0
.00
## 97     0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 98     0.00   43.75    0.00     0.00      0.00      0.00       0.00      0
.00
## 99     6.67    6.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 100    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 101   13.33    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 102    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 103    0.00    7.69    0.00     0.00      0.00      0.00       0.00      0
.00
## 104    0.00   53.85    0.00    23.08      0.00      0.00       0.00      0
.00
## 105    7.69    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 106    0.00    8.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 107    0.00    8.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 108    0.00    0.00    0.00    33.33      0.00      0.00       0.00      0
.00
## 109    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 110    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 111    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 112    0.00    0.00   33.33     0.00      0.00     22.22       0.00     11
.11
## 113    0.00   11.11    0.00     0.00      0.00      0.00       0.00      0
```

```
.00
## 114    0.00    0.00    0.00    11.11      0.00      0.00       0.00      0
.00
## 115    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 116    0.00    0.00   37.50     0.00      0.00      0.00       0.00     62
.50
## 117    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 118    0.00    0.00    0.00    12.50      0.00      0.00       0.00      0
.00
## 119    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 120    0.00   28.57    0.00     0.00      0.00      0.00       0.00      0
.00
## 121    0.00   42.86    0.00     0.00      0.00      0.00       0.00      0
.00
## 122    0.00   42.86    0.00     0.00      0.00      0.00       0.00      0
.00
## 123    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 124    0.00   14.29    0.00    28.57      0.00      0.00       0.00      0
.00
## 125    0.00   66.67   33.33     0.00      0.00      0.00       0.00      0
.00
## 126    0.00    0.00   16.67     0.00      0.00      0.00       0.00     83
.33
## 127    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 128    0.00   16.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 129    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 130    0.00   16.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 131   16.67    0.00    0.00    16.67      0.00      0.00       0.00      0
.00
## 132    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 133    0.00   80.00   20.00     0.00      0.00      0.00       0.00      0
.00
## 134    0.00   40.00   60.00     0.00      0.00      0.00       0.00      0
.00
## 135    0.00   20.00   80.00     0.00      0.00      0.00       0.00      0
.00
## 136    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 137    0.00   40.00    0.00    20.00      0.00      0.00       0.00      0
.00
## 138    0.00   25.00    0.00     0.00      0.00      0.00       0.00      0
```

```
.00
## 139    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 140    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 141    0.00    0.00   25.00     0.00      0.00      0.00       0.00      0
.00
## 142    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 143    0.00   66.67    0.00     0.00      0.00      0.00       0.00      0
.00
## 144    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 145    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 146    0.00   33.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 147    0.00   33.33    0.00     0.00      0.00      0.00       0.00      0
.00
## 148    0.00   50.00   50.00     0.00      0.00      0.00       0.00      0
.00
## 149    0.00    0.00   50.00     0.00      0.00      0.00       0.00     50
.00
## 150    0.00    0.00   50.00     0.00      0.00      0.00       0.00      0
.00
## 151   50.00   50.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 152    0.00    0.00  100.00     0.00      0.00      0.00       0.00      0
.00
## 153    0.00    0.00  100.00     0.00      0.00      0.00       0.00      0
.00
## 154    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 155    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 156    0.00    0.00    0.00     0.00      0.00      0.00       0.00      0
.00
## 157    0.00  100.00    0.00     0.00      0.00      0.00       0.00      0
.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 1         0.44       0.65        0.00
## 2         0.00       0.00        0.00
## 3         0.00       0.00        0.00
## 4         0.00       0.00        0.00
## 5         0.00       0.00        0.00
## 6         0.00       1.03        0.00
## 7         0.00       0.00        0.00
## 8         0.00       0.00        0.00
## 9         0.68       0.68        0.00
## 10        0.00       0.00        0.00
```

```
## 11        0.00       0.00        0.00
## 12        0.00       0.00        0.00
## 13        0.00       0.00        0.00
## 14        0.00       0.00        0.00
## 15        0.00       0.00        0.00
## 16        0.00       0.00        0.00
## 17        0.00       0.00        0.00
## 18        0.00       0.00        0.00
## 19        0.00       2.27        0.00
## 20        0.00       0.00        0.00
## 21        0.00       0.00        0.00
## 22        6.17       1.23        0.00
## 23        1.25       0.00        0.00
## 24        0.00       0.00        1.28
## 25        0.00       0.00        0.00
## 26        0.00       0.00        0.00
## 27        0.00       0.00        0.00
## 28        0.00       0.00        0.00
## 29        0.00       0.00        0.00
## 30        0.00       0.00        0.00
## 31        0.00       1.41        0.00
## 32        0.00       0.00        0.00
## 33        0.00       0.00        0.00
## 34        0.00       0.00        0.00
## 35        0.00       0.00        0.00
## 37        0.00       0.00        0.00
## 38        0.00       0.00        0.00
## 39        0.00       0.00        0.00
## 40        0.00       0.00        0.00
## 41        0.00       0.00        0.00
## 42        0.00       0.00        0.00
## 43        0.00       0.00        5.66
## 44        0.00       0.00        0.00
## 45        9.43       3.77        0.00
## 46        0.00       0.00        0.00
## 47        0.00       0.00        0.00
## 48        0.00       0.00        0.00
## 49        0.00       0.00        0.00
## 50        0.00       0.00        0.00
## 51        0.00       0.00        0.00
## 52        2.00       0.00        0.00
## 53        0.00       0.00        0.00
## 54        0.00       0.00        0.00
## 55        0.00       0.00        0.00
## 56        0.00       0.00        0.00
## 57        0.00       0.00        0.00
## 58        0.00       0.00        0.00
## 59        0.00       0.00        0.00
## 60        0.00       0.00        0.00
## 61        0.00       0.00        0.00
```

```
## 62        0.00       0.00        0.00
## 63        0.00       0.00        0.00
## 64        0.00       0.00        0.00
## 65        0.00       0.00        0.00
## 66        2.94       0.00        0.00
## 67        0.00       0.00        0.00
## 68        0.00       0.00        0.00
## 69        0.00       0.00        0.00
## 70        0.00       0.00        0.00
## 71        0.00       0.00        0.00
## 72        0.00       0.00        3.33
## 73        0.00       0.00        3.33
## 74        0.00       0.00        0.00
## 75        0.00       0.00        0.00
## 76        0.00       0.00        0.00
## 77        0.00       0.00        0.00
## 78        0.00       0.00        0.00
## 79        0.00       0.00        0.00
## 80        7.69       0.00        0.00
## 81        0.00       0.00        0.00
## 82        0.00       0.00        0.00
## 83        0.00       0.00        0.00
## 84        0.00       0.00        0.00
## 85        0.00       0.00        0.00
## 86        0.00       0.00        0.00
## 87        0.00       0.00        0.00
## 88        4.35       8.70        0.00
## 89        0.00       0.00        0.00
## 90        0.00       0.00        0.00
## 91       31.58       0.00        0.00
## 92        0.00       0.00        0.00
## 93        0.00       0.00        0.00
## 94        0.00       0.00        0.00
## 95        0.00       0.00        0.00
## 96        0.00       0.00        0.00
## 97        0.00       0.00        0.00
## 98        0.00       0.00        0.00
## 99        0.00       0.00        0.00
## 100       0.00       0.00        0.00
## 101       0.00       0.00        0.00
## 102       0.00       0.00        0.00
## 103       0.00       0.00        0.00
## 104      15.38       0.00        0.00
## 105       0.00       0.00        0.00
## 106       0.00       0.00        0.00
## 107       0.00       0.00        0.00
## 108      16.67       0.00        0.00
## 109       0.00       0.00        0.00
## 110       0.00       0.00        0.00
## 111       0.00       0.00        0.00
```

```
## 112       0.00       0.00        0.00
## 113       0.00       0.00        0.00
## 114      11.11       0.00        0.00
## 115       0.00       0.00        0.00
## 116       0.00       0.00        0.00
## 117       0.00       0.00        0.00
## 118       0.00       0.00        0.00
## 119       0.00       0.00        0.00
## 120       0.00       0.00        0.00
## 121       0.00       0.00        0.00
## 122       0.00       0.00        0.00
## 123       0.00       0.00        0.00
## 124      28.57       0.00        0.00
## 125       0.00       0.00        0.00
## 126       0.00       0.00        0.00
## 127       0.00       0.00        0.00
## 128       0.00       0.00        0.00
## 129       0.00       0.00        0.00
## 130       0.00       0.00        0.00
## 131       0.00       0.00        0.00
## 132       0.00       0.00        0.00
## 133       0.00       0.00        0.00
## 134       0.00       0.00        0.00
## 135       0.00       0.00        0.00
## 136       0.00       0.00        0.00
## 137      20.00       0.00        0.00
## 138       0.00       0.00        0.00
## 139       0.00       0.00        0.00
## 140       0.00       0.00        0.00
## 141       0.00       0.00        0.00
## 142       0.00       0.00        0.00
## 143       0.00       0.00        0.00
## 144       0.00       0.00        0.00
## 145      66.67      33.33        0.00
## 146      33.33       0.00        0.00
## 147      33.33      33.33        0.00
## 148       0.00       0.00        0.00
## 149       0.00       0.00        0.00
## 150       0.00       0.00        0.00
## 151       0.00       0.00        0.00
## 152       0.00       0.00        0.00
## 153       0.00       0.00        0.00
## 154       0.00       0.00        0.00
## 155       0.00       0.00        0.00
## 156       0.00       0.00        0.00
## 157       0.00       0.00        0.00
```

Statistics showen in the mansucript consequently

```
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
```

```r
model3<-glm((Prev_Tspp) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Tspp) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Tspp) ~ Country*Species+Localisation,data=data, family=gaus
sian())
model6<-glm((Prev_Tspp) ~ Country+Species+Localisation,data=data, family=gaus
sian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model1  16 1521.35       0.00    0.9    0.9 -742.72
## model4  23 1525.81       4.46    0.1    1.0 -735.72
## model3  27 1534.50      13.15    0.0    1.0 -734.34
## model2  11 1545.55      24.20    0.0    1.0 -760.86
## model6 100 1571.61      50.26    0.0    1.0 -502.17
## model5 103 1614.79      93.44    0.0    1.0 -498.39

summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   35.627      4.536   7.855 9.24e-13 ***
## CountryETH   -15.587     30.088  -0.518 0.605225
## CountryGHA    34.112      8.350   4.085 7.35e-05 ***
## CountryGUI   -33.209      8.919  -3.723 0.000284 ***
## CountryKEN     6.128      9.711   0.631 0.529059
## CountryMLI   -25.200      8.350  -3.018 0.003021 **
## CountryMOZ   -27.627     21.516  -1.284 0.201227
## CountrySAF   -14.495     11.453  -1.266 0.207727
## CountrySEN   -11.353      8.919  -1.273 0.205148
## CountrySWA   -35.627     30.088  -1.184 0.238360
## CountryUGA   -26.345     14.054  -1.875 0.062918 .
## CountryURT    -5.429     12.962  -0.419 0.675975
## CountryZAI   -32.767     30.088  -1.089 0.277985
## CountryZAM     9.583     30.088   0.318 0.750587
```

```
## CountryZIM   -11.259     10.442  -1.078 0.282769
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country    63.56 14   2.76e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Species   21.863  9   0.009324 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-----------------------------------------------------------------------
#impact of taxa and countries

# statistics in the manuscript
data_ga <- subset(data, Species=="Ga")
data_ga
```

```
##     Country                Localisation Species Sex Sample Prev_Sod Prev_
Tspp
## 27      SAF               False Bay Park      Ga  NI     27     0.00
2.60
## 41      SAF                 SAFint Lucia      Ga  NI     41     0.00     3
8.60
## 46      SAF                 Lower Mkhuze      Ga  NI     46     0.00     4
3.40
## 53      MOZ   Reserva Especial de Maputo      Ga  NI     53     0.00     1
0.00
## 59      SAF North eastern KwaZulu-Natal       Ga  NI     59     5.13
5.13
```

```
## 75      SWA      Mlawula Nature Reserve       Ga  NI     75     0.00
0.00
## 76      URT                 Uguja island      Ga  NI     76     6.67     1
0.00
## 132     URT                     Zanzibar      Ga  NI    132    16.67
0.00
## 141     URT                       Jozani      Ga  NI    141     0.00     2
5.00
##     Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_T
vTz
## 27     2.60    0.00    0.00     0.00      0.00         0       0.00
0
## 41    10.53    0.00   10.53    15.79      0.00         0       1.75
0
## 46     9.43    1.89    3.77    24.53      1.89         0       1.89
0
## 53     6.00    0.00    0.00     4.00      0.00         0       0.00
0
## 59     2.56    0.00    0.00     2.56      0.00         0       0.00
0
## 75     0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 76     0.00    6.67    3.33     0.00      0.00         0       0.00
0
## 132    0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 141    0.00    0.00   25.00     0.00      0.00         0       0.00
0
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 27           0          0           0
## 41           0          0           0
## 46           0          0           0
## 53           0          0           0
## 59           0          0           0
## 75           0          0           0
## 76           0          0           0
## 132          0          0           0
## 141          0          0           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -19.832   16.168   20.968    0.000  -17.302    0.000   -1.667  -11.667
##     141
```

```
##  13.333
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.000     18.495   0.541    0.612
## CountrySAF    12.433     20.678   0.601    0.574
## CountrySWA   -10.000     26.156  -0.382    0.718
## CountryURT     1.667     21.357   0.078    0.941
##
## (Dispersion parameter for gaussian family taken to be 342.0791)
##
##     Null deviance: 2214.7  on 8  degrees of freedom
## Residual deviance: 1710.4  on 5  degrees of freedom
## AIC: 82.766
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   1.4742  3     0.6882

#-----------------------------------------------
data_gb <- subset(data, Species=="Gb")
data_gb

##    Country                 Localisation Species Sex Sample Prev_Sod Prev_T
spp
## 7      SAF                       Phinda      Gb  NI      7     4.12      0
.00
## 50     SAF                     Hluhluwe      Gb  NI     50     0.00     32
.00
## 51     SAF North eastern KwaZulu-Natal       Gb  NI     51     0.00      4
.00
## 52     MOZ   Reserva Especial de Maputo      Gb  NI     52    14.00      6
.00
## 74     SAF                  SAFint Lucia      Gb  NI     74     0.00     43
.33
##    Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_Tv
Tz
## 7        0    0.00    0.00     0.00         0         0          0
0
## 50      12    2.00   14.00     4.00         0         0          0
0
## 51       2    0.00    0.00     2.00         0         0          0
0
## 52       0    2.00    0.00     2.00         0         0          0
0
```

```
## 74       0    3.33    3.33    36.67         0         0          0
0
##    Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 7           0          0          0
## 50          0          0          0
## 51          0          0          0
## 52          2          0          0
## 74          0          0          0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gb, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##      7      50      51      52      74
## -19.83   12.17  -15.83    0.00   23.50
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     6.00      21.17   0.283    0.795
## CountrySAF     13.83      23.67   0.584    0.600
##
## (Dispersion parameter for gaussian family taken to be 448.0589)
##
##     Null deviance: 1497.2  on 4  degrees of freedom
## Residual deviance: 1344.2  on 3  degrees of freedom
## AIC: 48.16
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country  0.34163  1     0.5589
```

```
#-----------------------------------------
data_gff <- subset(data, Species=="Gff")
data_gff
```

```
##    Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pre
v_Tv
## 16     UGA Buvuma island     Gff  NI     16     4.26     10.64    3.19
2.13
## 49     KEN      Ikapolok     Gff  NI     49    39.22     37.25    1.96
9.80
```

```
## 61     KEN        Obekai     Gff  NI     61     0.00      5.26    2.63
2.63
##    Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 16    1.06     3.19      0.00      0.00       1.06         0          0
## 49    0.00    19.61      3.92      1.96       0.00         0          0
## 61    0.00     0.00      0.00      0.00       0.00         0          0
##    Prev_TzTsg Prev_TcTvTz
## 16          0           0
## 49          0           0
## 61          0           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##   0.00   15.99  -15.99
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    21.26      16.00   1.329    0.411
## CountryUGA    -10.61      27.70  -0.383    0.767
##
## (Dispersion parameter for gaussian family taken to be 511.68)
##
##     Null deviance: 586.80  on 2  degrees of freedom
## Residual deviance: 511.68  on 1  degrees of freedom
## AIC: 29.931
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country  0.14681  1     0.7016
```

```
#-----------------------------------------
data_gmm <- subset(data, Species=="Gmm")
data_gmm
```

```
##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 21      KEN          Kari     Gmm  NI     21    63.53      2.35    2.35
0.00
```

```
## 22      URT MaSAFng-URTga     Gmm  NI     22    76.54     53.09   18.52
1.23
## 26      ZIM        Makuti     Gmm  NI     26    26.92     91.03   11.54
0.00
## 93      ZIM      Kemukura     Gmm  NI     93    22.22      5.56    0.00
5.56
## 100     ZIM     Rukomeshi     Gmm  NI    100    20.00      0.00    0.00
0.00
## 105     ZIM     Mukondore     Gmm  NI    105    23.08      7.69    7.69
0.00
## 115     ZIM     M. chiuyi     Gmm  NI    115    11.11      0.00    0.00
0.00
## 131     ZIM       Mushumb     Gmm  NI    131     0.00     33.33   16.67
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 21     0.00     0.00         0         0       0.00         0       0.00
## 22     1.23    18.52         0         0       6.17         0       6.17
## 26     2.56    69.23         0         0       7.69         0       0.00
## 93     0.00     0.00         0         0       0.00         0       0.00
## 100    0.00     0.00         0         0       0.00         0       0.00
## 105    0.00     0.00         0         0       0.00         0       0.00
## 115    0.00     0.00         0         0       0.00         0       0.00
## 131    0.00    16.67         0         0       0.00         0       0.00
##     Prev_TzTsg Prev_TcTvTz
## 21        0.00          0
## 22        1.23          0
## 26        0.00          0
## 93        0.00          0
## 100       0.00          0
## 105       0.00          0
## 115       0.00          0
## 131       0.00          0

model1<-glm((Prev_Tspp) ~ Country,data=data_gmm, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##   0.00    0.00   68.09  -17.38  -22.93  -15.24  -22.93   10.39
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     2.35      35.59   0.066    0.950
## CountryURT     50.74      50.32   1.008    0.360
## CountryZIM     20.59      38.44   0.536    0.615
##
```

```
## (Dispersion parameter for gaussian family taken to be 1266.263)
##
##     Null deviance: 7652.9  on 7  degrees of freedom
## Residual deviance: 6331.3  on 5  degrees of freedom
## AIC: 84.094
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   1.0437  2     0.5934

#-----------------------------------------------
data_gp <- subset(data, Species=="Gp")
data_gp

##     Country          Localisation Species Sex Sample Prev_Sod Prev_Tspp Pr
ev_Tc
## 1       ETH Arba minch, nech SAFr      Gp  NI      1    20.48     20.04
6.10
## 5       KEN               Katotoi      Gp  NI      5    42.56     88.72
21.54
## 6       KEN                  Mwea      Gp  NI      6     3.08     19.49
7.18
## 8       ZAM                 Mfuwe      Gp  NI      8     2.05     45.21
1.37
## 9       URT              URTzania      Gp  NI      9    78.77     19.86
6.16
## 17      KEN                  Kari      Gp  NI     17    89.36      2.13
1.06
## 19      KEN                Koibos      Gp  NI     19     0.00     71.59
15.91
## 20      KEN        Meru nat. parc      Gp  NI     20    22.99     70.11
29.89
## 23      KEN        Ruma nat. parc      Gp  NI     23    26.25     17.50
10.00
## 31      URT         MaSAFng-URTga      Gp  NI     31    66.20     73.24
33.80
## 38      KEN                 Emsos      Gp  NI     38     0.00     93.33
15.00
## 42      UGA                Budaka      Gp  NI     42    94.55      7.27
1.82
## 60      ZIM                Makuti      Gp  NI     60    15.79     86.84
7.89
## 79      UGA                 Omugo      Gp  NI     79   100.00      0.00
0.00
## 81      ZIM               Mushumb      Gp  NI     81     3.85     19.23
```

```
3.85
## 85      UGA                  Lira      Gp  NI     85     0.00     16.00
8.00
## 90      KEN                 Kiria      Gp  NI     90     0.00     80.00
55.00
## 101     KEN        Mwea nat. parc      Gp  NI    101     0.00     13.33
13.33
## 118     UGA                  Moyo      Gp  NI    118    87.50     12.50
0.00
## 139     ZIM             Rukomeshi      Gp  NI    139     0.00      0.00
0.00
## 140     ZIM                 Gokwe      Gp  NI    140     0.00      0.00
0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 1      0.65    1.09    10.46      0.00      0.00       0.65      0.00
## 5     15.38    0.51    26.15      6.67      1.54      15.90      1.03
## 6      0.51    1.03     7.69      1.03      0.51       0.51      0.00
## 8      0.68    0.68    34.93      0.00      0.00       7.53      0.00
## 9      2.74    0.68     8.22      0.00      0.00       0.68      0.00
## 17     0.00    1.06     0.00      0.00      0.00       0.00      0.00
## 19     9.09    0.00    28.41      0.00      0.00      15.91      0.00
## 20     4.60    0.00    25.29      0.00      0.00      10.34      0.00
## 23     2.50    2.50     0.00      1.25      0.00       0.00      0.00
## 31     0.00    0.00    14.08      0.00      1.41      21.13      1.41
## 38     8.33    0.00    58.33      1.67      0.00      10.00      0.00
## 42     0.00    0.00     5.45      0.00      0.00       0.00      0.00
## 60     0.00    0.00    73.68      0.00      0.00       5.26      0.00
## 79     0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 81     0.00    7.69     3.85      0.00      0.00       3.85      0.00
## 85     0.00    4.00     4.00      0.00      0.00       0.00      0.00
## 90     5.00    0.00    10.00     10.00      0.00       0.00      0.00
## 101    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 118    0.00    0.00    12.50      0.00      0.00       0.00      0.00
## 139    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 140    0.00    0.00     0.00      0.00      0.00       0.00      0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 1         0.44       0.65           0
## 5         0.00       0.00           0
## 6         0.00       1.03           0
## 8         0.00       0.00           0
## 9         0.68       0.68           0
## 17        0.00       0.00           0
## 19        0.00       2.27           0
## 20        0.00       0.00           0
## 23        1.25       0.00           0
## 31        0.00       1.41           0
## 38        0.00       0.00           0
## 42        0.00       0.00           0
## 60        0.00       0.00           0
## 79        0.00       0.00           0
```

```
## 81        0.00       0.00           0
## 85        0.00       0.00           0
## 90        0.00       0.00           0
## 101       0.00       0.00           0
## 118       0.00       0.00           0
## 139       0.00       0.00           0
## 140       0.00       0.00           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -48.56  -26.52    0.00   20.90   60.32
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   20.040     34.093   0.588    0.565
## CountryKEN    30.649     35.937   0.853    0.407
## CountryUGA   -11.097     38.117  -0.291    0.775
## CountryURT    26.510     41.755   0.635    0.535
## CountryZAM    25.170     48.214   0.522    0.609
## CountryZIM     6.478     38.117   0.170    0.867
##
## (Dispersion parameter for gaussian family taken to be 1162.303)
##
##     Null deviance: 23227  on 20  degrees of freedom
## Residual deviance: 17435  on 15  degrees of freedom
## AIC: 214.75
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   4.9833  5     0.4179
```

```
#-----------------------------------------------
data_gpg <- subset(data, Species=="Gpg")
data_gpg
```

```
##     Country    Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc
## 4       SEN            Pout     Gpg  NI      4     0.00      7.04    1.51
## 12      BKF         Folonzo     Gpg   F     12     0.00      7.55    0.94
```

```
## 13      BKF          Folonzo     Gpg   M     13     1.89     16.04    0.00
## 15      GUI        Kangoliya     Gpg   F     15    95.74      0.00    0.00
## 18      SEN            Kayar     Gpg  NI     18     0.00      1.14    0.00
## 25      BKF     Moussodougou     Gpg   F     25     0.00     44.87    0.00
## 30      BKF            Comoe     Gpg   F     30     0.00      2.82    1.41
## 32      BKF         Kartasso     Gpg   F     32     0.00      0.00    0.00
## 33      BKF         Kartasso     Gpg   M     33     0.00      0.00    0.00
## 34      SEN DiackSAFo Peulh      Gpg  NI     34     0.00      7.69    0.00
## 35      BKF     Moussodougou     Gpg   M     35     0.00     21.88    0.00
## 40      MLI             Bani     Gpg   F     40     0.00      1.72    0.00
## 45      BKF           Kampty     Gpg   F     45     0.00     90.57    1.89
## 47      BKF            Comoe     Gpg   M     47     0.00      1.92    1.92
## 48      MLI              SEN     Gpg   M     48     0.00      7.69    1.92
## 54      BKF             Bama     Gpg   F     54     0.00      0.00    0.00
## 56      SEN      Tambacounda     Gpg   F     56     0.00     41.46    0.00
## 57      SEN      Tambacounda     Gpg   M     57     0.00     71.79    0.00
## 58      SEN       SebikoURTe     Gpg  NI     58     0.00      5.13    0.00
## 62      MLI              SEN     Gpg   F     62     0.00      0.00    0.00
## 64      BKF             Bama     Gpg   M     64     0.00      0.00    0.00
## 65      MLI            Banco     Gpg   F     65     0.00     20.59    0.00
## 66      BKF         Dedougou     Gpg   F     66     0.00     52.94    0.00
## 67      MLI          Sikasso     Gpg   F     67     0.00      6.06    0.00
## 71      GUI        Kangoliya     Gpg   M     71     0.00      0.00    0.00
## 77      GUI             Mini     Gpg   F     77     0.00      3.45    0.00
## 78      SEN             Hann     Gpg  NI     78     0.00      0.00    0.00
## 80      BKF           Kampty     Gpg   M     80     0.00     80.77    0.00
## 82      GUI           Kifala     Gpg   M     82     0.00      0.00    0.00
## 83      MLI          Sikasso     Gpg   M     83     0.00      0.00    0.00
## 84      MLI               SS     Gpg   F     84     0.00      4.00    0.00
## 86      BKF       Kenedougou     Gpg   F     86     0.00      0.00    0.00
## 87      MLI               SS     Gpg   M     87     0.00      0.00    0.00
## 88      BKF         Dedougou     Gpg   M     88     0.00     69.57    4.35
## 89      GUI           Bafing     Gpg   F     89     0.00      5.00    0.00
## 91      BKF           Kampty     Gpg  NI     91     0.00     84.21    0.00
## 92      GUI         Tinkisso     Gpg   M     92     0.00      5.56    0.00
## 94      BKF       Kenedougou     Gpg   M     94     0.00      0.00    0.00
## 96      GUI        Dekonkore     Gpg   F     96     0.00      6.25    0.00
## 97      GUI             Mini     Gpg   M     97     0.00      0.00    0.00
## 98      SEN    Fleuve Gambie     Gpg   M     98     0.00     43.75    0.00
## 102     GUI           Bafing     Gpg   M    102     0.00      0.00    0.00
## 103     GUI         Tinkisso     Gpg   F    103     0.00      7.69    0.00
## 104     BKF Bouroum bouroum      Gpg   F    104     0.00     92.31    0.00
## 106     GUI         Karifale     Gpg   M    106     0.00      8.33    0.00
## 107     GUI         Lemonako     Gpg   F    107     0.00      0.00    0.00
## 108     BKF       KouriGUIon     Gpg   F    108     0.00     50.00    0.00
## 109     MLI             Bani     Gpg   M    109     0.00      0.00    0.00
## 110     MLI             Sybi     Gpg   F    110     0.00      0.00    0.00
## 111     MLI             Sybi     Gpg   M    111     0.00      0.00    0.00
## 113     SEN        Fleueve G     Gpg   F    113     0.00     11.11    0.00
## 114     BKF       KouriGUIon     Gpg  NI    114     0.00     22.22    0.00
```

```
## 117     GUI        Lemonako     Gpg   M    117     0.00      0.00    0.00
## 119     SEN        Diaguiri     Gpg   F    119     0.00      0.00    0.00
## 120     MLI           Banco     Gpg   M    120     0.00     28.57    0.00
## 121     MLI          Baoule     Gpg   F    121     0.00     42.86    0.00
## 122     MLI          Baoule     Gpg   M    122     0.00     42.86    0.00
## 123     MLI        Bougouni     Gpg   M    123     0.00      0.00    0.00
## 124     BKF        Lorepeni     Gpg   F    124     0.00     71.43    0.00
## 127     SEN      MousSAFlla     Gpg   M    127     0.00      0.00    0.00
## 128     MLI       Baguineda     Gpg   F    128     0.00     16.67    0.00
## 129     MLI        Bougouni     Gpg   F    129     0.00      0.00    0.00
## 130     MLI            Kita     Gpg   M    130     0.00     16.67    0.00
## 136     GUI          Kifala     Gpg   F    136     0.00      0.00    0.00
## 137     BKF Bouroum bouroum     Gpg   M    137     0.00     80.00    0.00
## 138     SEN   Fleuve Gambie     Gpg   F    138     0.00     25.00    0.00
## 143     SEN         Niokolo     Gpg   M    143     0.00      0.00    0.00
## 145     BKF        Lorepeni     Gpg   M    145     0.00    100.00    0.00
## 146     BKF      KouriGUIon     Gpg   M    146     0.00     66.67    0.00
## 147     BKF        Ouarkoye     Gpg   M    147     0.00    100.00    0.00
## 150     SEN        Diaguiri     Gpg   M    150     0.00     50.00    0.00
## 151     BKF        Ouarkoye     Gpg   F    151     0.00    100.00   50.00
## 156     GUI        Karifale     Gpg   F    156     0.00      0.00    0.00
## 157     SEN            Mako     Gpg   M    157     0.00    100.00    0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 4      2.01    0.50     3.02         0      0.00       0.00      0.00
## 12     2.83    1.89     0.00         0      0.00       0.00      1.89
## 13     5.66    5.66     0.00         0      1.89       0.00      2.83
## 15     0.00    0.00     0.00         0      0.00       0.00      0.00
## 18     0.00    0.00     1.14         0      0.00       0.00      0.00
## 25    20.51   12.82     0.00         0      0.00       0.00     11.54
## 30     1.41    0.00     0.00         0      0.00       0.00      0.00
## 32     0.00    0.00     0.00         0      0.00       0.00      0.00
## 33     0.00    0.00     0.00         0      0.00       0.00      0.00
## 34     1.54    1.54     4.62         0      0.00       0.00      0.00
## 35     6.25   15.63     0.00         0      0.00       0.00      0.00
## 40     1.72    0.00     0.00         0      0.00       0.00      0.00
## 45    62.26    1.89    11.32         0      0.00       0.00      0.00
## 47     0.00    0.00     0.00         0      0.00       0.00      0.00
## 48     1.92    3.85     0.00         0      0.00       0.00      0.00
## 54     0.00    0.00     0.00         0      0.00       0.00      0.00
## 56    26.83    7.32     0.00         0      0.00       0.00      7.32
## 57    53.85    2.56     0.00         0      0.00       0.00     15.38
## 58     5.13    0.00     0.00         0      0.00       0.00      0.00
## 62     0.00    0.00     0.00         0      0.00       0.00      0.00
## 64     0.00    0.00     0.00         0      0.00       0.00      0.00
## 65    20.59    0.00     0.00         0      0.00       0.00      0.00
## 66    26.47    0.00    23.53         0      0.00       0.00      0.00
## 67     0.00    6.06     0.00         0      0.00       0.00      0.00
## 71     0.00    0.00     0.00         0      0.00       0.00      0.00
## 77     3.45    0.00     0.00         0      0.00       0.00      0.00
## 78     0.00    0.00     0.00         0      0.00       0.00      0.00
```

```
## 80    65.38    0.00     7.69          0      0.00       0.00      0.00
## 82     0.00    0.00     0.00          0      0.00       0.00      0.00
## 83     0.00    0.00     0.00          0      0.00       0.00      0.00
## 84     4.00    0.00     0.00          0      0.00       0.00      0.00
## 86     0.00    0.00     0.00          0      0.00       0.00      0.00
## 87     0.00    0.00     0.00          0      0.00       0.00      0.00
## 88    30.43   13.04     4.35          0      0.00       4.35      0.00
## 89     5.00    0.00     0.00          0      0.00       0.00      0.00
## 91    26.32    5.26    21.05          0      0.00       0.00      0.00
## 92     5.56    0.00     0.00          0      0.00       0.00      0.00
## 94     0.00    0.00     0.00          0      0.00       0.00      0.00
## 96     6.25    0.00     0.00          0      0.00       0.00      0.00
## 97     0.00    0.00     0.00          0      0.00       0.00      0.00
## 98    43.75    0.00     0.00          0      0.00       0.00      0.00
## 102    0.00    0.00     0.00          0      0.00       0.00      0.00
## 103    7.69    0.00     0.00          0      0.00       0.00      0.00
## 104   53.85    0.00    23.08          0      0.00       0.00      0.00
## 106    8.33    0.00     0.00          0      0.00       0.00      0.00
## 107    8.33    0.00     0.00          0      0.00       0.00      0.00
## 108    0.00    0.00    33.33          0      0.00       0.00      0.00
## 109    0.00    0.00     0.00          0      0.00       0.00      0.00
## 110    0.00    0.00     0.00          0      0.00       0.00      0.00
## 111    0.00    0.00     0.00          0      0.00       0.00      0.00
## 113   11.11    0.00     0.00          0      0.00       0.00      0.00
## 114    0.00    0.00    11.11          0      0.00       0.00      0.00
## 117    0.00    0.00     0.00          0      0.00       0.00      0.00
## 119    0.00    0.00     0.00          0      0.00       0.00      0.00
## 120   28.57    0.00     0.00          0      0.00       0.00      0.00
## 121   42.86    0.00     0.00          0      0.00       0.00      0.00
## 122   42.86    0.00     0.00          0      0.00       0.00      0.00
## 123    0.00    0.00     0.00          0      0.00       0.00      0.00
## 124   14.29    0.00    28.57          0      0.00       0.00      0.00
## 127    0.00    0.00     0.00          0      0.00       0.00      0.00
## 128   16.67    0.00     0.00          0      0.00       0.00      0.00
## 129    0.00    0.00     0.00          0      0.00       0.00      0.00
## 130   16.67    0.00     0.00          0      0.00       0.00      0.00
## 136    0.00    0.00     0.00          0      0.00       0.00      0.00
## 137   40.00    0.00    20.00          0      0.00       0.00      0.00
## 138   25.00    0.00     0.00          0      0.00       0.00      0.00
## 143   66.67    0.00     0.00          0      0.00       0.00      0.00
## 145    0.00    0.00     0.00          0      0.00       0.00      0.00
## 146   33.33    0.00     0.00          0      0.00       0.00      0.00
## 147   33.33    0.00     0.00          0      0.00       0.00      0.00
## 150    0.00   50.00     0.00          0      0.00       0.00      0.00
## 151   50.00    0.00     0.00          0      0.00       0.00      0.00
## 156    0.00    0.00     0.00          0      0.00       0.00      0.00
## 157  100.00    0.00     0.00          0      0.00       0.00      0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 4         0.00       0.00           0
## 12        0.00       0.00           0
```

```
## 13        0.00       0.00           0
## 15        0.00       0.00           0
## 18        0.00       0.00           0
## 25        0.00       0.00           0
## 30        0.00       0.00           0
## 32        0.00       0.00           0
## 33        0.00       0.00           0
## 34        0.00       0.00           0
## 35        0.00       0.00           0
## 40        0.00       0.00           0
## 45        9.43       3.77           0
## 47        0.00       0.00           0
## 48        0.00       0.00           0
## 54        0.00       0.00           0
## 56        0.00       0.00           0
## 57        0.00       0.00           0
## 58        0.00       0.00           0
## 62        0.00       0.00           0
## 64        0.00       0.00           0
## 65        0.00       0.00           0
## 66        2.94       0.00           0
## 67        0.00       0.00           0
## 71        0.00       0.00           0
## 77        0.00       0.00           0
## 78        0.00       0.00           0
## 80        7.69       0.00           0
## 82        0.00       0.00           0
## 83        0.00       0.00           0
## 84        0.00       0.00           0
## 86        0.00       0.00           0
## 87        0.00       0.00           0
## 88        4.35       8.70           0
## 89        0.00       0.00           0
## 91       31.58       0.00           0
## 92        0.00       0.00           0
## 94        0.00       0.00           0
## 96        0.00       0.00           0
## 97        0.00       0.00           0
## 98        0.00       0.00           0
## 102       0.00       0.00           0
## 103       0.00       0.00           0
## 104      15.38       0.00           0
## 106       0.00       0.00           0
## 107       0.00       0.00           0
## 108      16.67       0.00           0
## 109       0.00       0.00           0
## 110       0.00       0.00           0
## 111       0.00       0.00           0
## 113       0.00       0.00           0
## 114      11.11       0.00           0
```

```
## 117       0.00       0.00           0
## 119       0.00       0.00           0
## 120       0.00       0.00           0
## 121       0.00       0.00           0
## 122       0.00       0.00           0
## 123       0.00       0.00           0
## 124      28.57       0.00           0
## 127       0.00       0.00           0
## 128       0.00       0.00           0
## 129       0.00       0.00           0
## 130       0.00       0.00           0
## 136       0.00       0.00           0
## 137      20.00       0.00           0
## 138       0.00       0.00           0
## 143       0.00       0.00           0
## 145      66.67      33.33           0
## 146      33.33       0.00           0
## 147      33.33      33.33           0
## 150       0.00       0.00           0
## 151       0.00       0.00           0
## 156       0.00       0.00           0
## 157       0.00       0.00           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -44.453  -17.072   -2.419   15.430   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   44.453      5.521   8.052 1.47e-11 ***
## CountryGUI   -42.034      9.127  -4.605 1.79e-05 ***
## CountryMLI   -34.025      8.632  -3.942 0.000189 ***
## CountrySEN   -20.179      9.127  -2.211 0.030320 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 792.4573)
##
##     Null deviance: 76638  on 73  degrees of freedom
## Residual deviance: 55472  on 70  degrees of freedom
## AIC: 709.85
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   26.709  3  6.776e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-----------------------------------------------
data_gt <- subset(data, Species=="Gt")
data_gt

##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 2       BKF         Comoe      Gt   F      2        0     16.54    1.10
13.24
## 3       BKF         Comoe      Gt   M      3        0     15.00    3.64
11.36
## 11      BKF       Folonzo      Gt   F     11        0     18.87    1.89
12.26
## 14      BKF       Folonzo      Gt   M     14        0     32.63    2.11
27.37
## 24      GHA      Walewale      Gt   M     24        0     53.85    3.85
12.82
## 43      GHA      Walewale      Gt   F     43        0     66.04    1.89
9.43
## 44      BKF          Arly      Gt   F     44        0      1.89    0.00
0.00
## 55      BKF          Arly      Gt   M     55        0      0.00    0.00
0.00
## 69      GHA       MorURTi      Gt   M     69        0     50.00    0.00
15.63
## 70      BKF       Sissili      Gt   M     70        0     25.00   12.50
12.50
## 95      GHA    Bougouhiya      Gt   F     95        0     18.75    0.00
6.25
## 99      BKF       Sissili      Gt   F     99        0     13.33    6.67
6.67
## 112     GHA       MorURTi      Gt   F    112        0     66.67    0.00
0.00
## 116     GHA      Fumbissi      Gt   F    116        0    100.00    0.00
0.00
## 125     GHA      Fumbissi      Gt   M    125        0    100.00    0.00
66.67
## 126     GHA        Grogro      Gt   M    126        0    100.00    0.00
0.00
## 133     GHA        Grogro      Gt   F    133        0    100.00    0.00
80.00
```

```
## 134     GHA       Kumpole      Gt   F    134        0    100.00    0.00
40.00
## 135     GHA Sissili Bidge      Gt   F    135        0    100.00    0.00
20.00
## 142     GHA    Bougouhiya      Gt   M    142        0      0.00    0.00
0.00
## 148     GHA       Kumpole      Gt   M    148        0    100.00    0.00
50.00
## 149     GHA        Psikp_      Gt   M    149        0    100.00    0.00
0.00
## 152     GHA      Kandiaga      Gt   M    152        0    100.00    0.00
0.00
## 153     GHA Sissili Bidge      Gt   M    153        0    100.00    0.00
0.00
## 154     GHA        Nabogo      Gt   F    154        0      0.00    0.00
0.00
## 155     GHA Volta Blanche      Gt   F    155        0      0.00    0.00
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 2      0.37        0      0.74      1.10          0      0.00          0
## 3      0.00        0      0.00      0.00          0      0.00          0
## 11     1.89        0      1.89      0.94          0      0.00          0
## 14     1.05        0      0.00      1.05          0      1.05          0
## 24     8.97        0      0.00     10.26          0     14.10          0
## 43    24.53        0      0.00     16.98          0      7.55          0
## 44     1.89        0      0.00      0.00          0      0.00          0
## 55     0.00        0      0.00      0.00          0      0.00          0
## 69    15.63        0      0.00     18.75          0      0.00          0
## 70     0.00        0      0.00      0.00          0      0.00          0
## 95     0.00        0      0.00      0.00          0     12.50          0
## 99     0.00        0      0.00      0.00          0      0.00          0
## 112   33.33        0      0.00     22.22          0     11.11          0
## 116   37.50        0      0.00      0.00          0     62.50          0
## 125   33.33        0      0.00      0.00          0      0.00          0
## 126   16.67        0      0.00      0.00          0     83.33          0
## 133   20.00        0      0.00      0.00          0      0.00          0
## 134   60.00        0      0.00      0.00          0      0.00          0
## 135   80.00        0      0.00      0.00          0      0.00          0
## 142    0.00        0      0.00      0.00          0      0.00          0
## 148   50.00        0      0.00      0.00          0      0.00          0
## 149   50.00        0      0.00      0.00          0     50.00          0
## 152  100.00        0      0.00      0.00          0      0.00          0
## 153  100.00        0      0.00      0.00          0      0.00          0
## 154    0.00        0      0.00      0.00          0      0.00          0
## 155    0.00        0      0.00      0.00          0      0.00          0
##     Prev_TzTsg Prev_TcTvTz
## 2            0        0.00
## 3            0        0.00
## 11           0        0.00
## 14           0        0.00
```

```
## 24           0        1.28
## 43           0        5.66
## 44           0        0.00
## 55           0        0.00
## 69           0        0.00
## 70           0        0.00
## 95           0        0.00
## 99           0        0.00
## 112          0        0.00
## 116          0        0.00
## 125          0        0.00
## 126          0        0.00
## 133          0        0.00
## 134          0        0.00
## 135          0        0.00
## 142          0        0.00
## 148          0        0.00
## 149          0        0.00
## 152          0        0.00
## 153          0        0.00
## 154          0        0.00
## 155          0        0.00
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -14.935    2.298   30.261   30.261
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    15.41      12.04   1.280 0.212940
## CountryGHA     54.33      14.47   3.754 0.000978 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1159.976)
##
##     Null deviance: 44189  on 25  degrees of freedom
## Residual deviance: 27839  on 24  degrees of freedom
## AIC: 261.16
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   14.095  1  0.0001738 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-----------------------------------------------------
# all species

model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   35.627      4.536   7.855 9.24e-13 ***
## CountryETH   -15.587     30.088  -0.518 0.605225
## CountryGHA    34.112      8.350   4.085 7.35e-05 ***
## CountryGUI   -33.209      8.919  -3.723 0.000284 ***
## CountryKEN     6.128      9.711   0.631 0.529059
## CountryMLI   -25.200      8.350  -3.018 0.003021 **
## CountryMOZ   -27.627     21.516  -1.284 0.201227
## CountrySAF   -14.495     11.453  -1.266 0.207727
## CountrySEN   -11.353      8.919  -1.273 0.205148
## CountrySWA   -35.627     30.088  -1.184 0.238360
## CountryUGA   -26.345     14.054  -1.875 0.062918 .
## CountryURT    -5.429     12.962  -0.419 0.675975
## CountryZAI   -32.767     30.088  -1.089 0.277985
## CountryZAM     9.583     30.088   0.318 0.750587
## CountryZIM   -11.259     10.442  -1.078 0.282769
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country    63.56 14   2.76e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics for Table 2

```
#Glm Tspp per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   35.627      4.536   7.855 9.24e-13 ***
## CountryETH   -15.587     30.088  -0.518 0.605225
## CountryGHA    34.112      8.350   4.085 7.35e-05 ***
## CountryGUI   -33.209      8.919  -3.723 0.000284 ***
## CountryKEN     6.128      9.711   0.631 0.529059
## CountryMLI   -25.200      8.350  -3.018 0.003021 **
## CountryMOZ   -27.627     21.516  -1.284 0.201227
## CountrySAF   -14.495     11.453  -1.266 0.207727
## CountrySEN   -11.353      8.919  -1.273 0.205148
## CountrySWA   -35.627     30.088  -1.184 0.238360
## CountryUGA   -26.345     14.054  -1.875 0.062918 .
## CountryURT    -5.429     12.962  -0.419 0.675975
## CountryZAI   -32.767     30.088  -1.089 0.277985
## CountryZAM     9.583     30.088   0.318 0.750587
## CountryZIM   -11.259     10.442  -1.078 0.282769
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   69.739      7.011   9.948  < 2e-16 ***
## CountryBKF   -34.112      8.350  -4.085 7.35e-05 ***
## CountryETH   -49.699     30.559  -1.626 0.106109
## CountryGUI   -67.321     10.399  -6.474 1.47e-09 ***
## CountryKEN   -27.984     11.085  -2.525 0.012692 *
## CountryMLI   -59.312      9.915  -5.982 1.72e-08 ***
## CountryMOZ   -61.739     22.170  -2.785 0.006092 **
## CountrySAF   -48.607     12.639  -3.846 0.000181 ***
## CountrySEN   -45.465     10.399  -4.372 2.37e-05 ***
## CountrySWA   -69.739     30.559  -2.282 0.023979 *
## CountryUGA   -60.457     15.036  -4.021 9.41e-05 ***
## CountryURT   -39.541     14.021  -2.820 0.005494 **
## CountryZAI   -66.879     30.559  -2.189 0.030277 *
## CountryZAM   -24.529     30.559  -0.803 0.423504
## CountryZIM   -45.371     11.731  -3.868 0.000167 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.4187     7.6799   0.315 0.753275
## CountryGHA   67.3208    10.3986   6.474 1.47e-09 ***
## CountryBKF   33.2088     8.9193   3.723 0.000284 ***
## CountryETH   17.6213    30.7194   0.574 0.567137
## CountryKEN   39.3363    11.5198   3.415 0.000834 ***
## CountryMLI    8.0086    10.3986   0.770 0.442494
## CountryMOZ    5.5813    22.3904   0.249 0.803512
## CountrySAF   18.7138    13.0218   1.437 0.152901
## CountrySEN   21.8553    10.8610   2.012 0.046095 *
## CountrySWA   -2.4187    30.7194  -0.079 0.937356
## CountryUGA    6.8633    15.3597   0.447 0.655676
## CountryURT   27.7797    14.3677   1.933 0.055181 .
## CountryZAI    0.4413    30.7194   0.014 0.988558
## CountryZAM   42.7913    30.7194   1.393 0.165820
## CountryZIM   21.9493    12.1429   1.808 0.072803 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   20.040     29.744   0.674    0.502
## CountryGUI   -17.621     30.719  -0.574    0.567
## CountryGHA    49.699     30.559   1.626    0.106
## CountryBKF    15.587     30.088   0.518    0.605
```

```
## CountryKEN    21.715     30.958   0.701    0.484
## CountryMLI    -9.613     30.559  -0.315    0.754
## CountryMOZ   -12.040     36.429  -0.331    0.742
## CountrySAF     1.092     31.548   0.035    0.972
## CountrySEN     4.234     30.719   0.138    0.891
## CountrySWA   -20.040     42.064  -0.476    0.635
## CountryUGA   -10.758     32.583  -0.330    0.742
## CountryURT    10.158     32.127   0.316    0.752
## CountryZAI   -17.180     42.064  -0.408    0.684
## CountryZAM    25.170     42.064   0.598    0.551
## CountryZIM     4.328     31.196   0.139    0.890
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41.755      8.586   4.863 3.05e-06 ***
## CountryETH   -21.715     30.958  -0.701 0.484195
## CountryGUI   -39.336     11.520  -3.415 0.000834 ***
## CountryGHA    27.984     11.085   2.525 0.012692 *
## CountryBKF    -6.128      9.711  -0.631 0.529059
## CountryMLI   -31.328     11.085  -2.826 0.005396 **
## CountryMOZ   -33.755     22.717  -1.486 0.139546
## CountrySAF   -20.622     13.576  -1.519 0.130997
## CountrySEN   -17.481     11.520  -1.517 0.131385
## CountrySWA   -41.755     30.958  -1.349 0.179582
## CountryUGA   -32.473     15.832  -2.051 0.042114 *
## CountryURT   -11.557     14.872  -0.777 0.438415
## CountryZAI   -38.895     30.958  -1.256 0.211063
## CountryZAM     3.455     30.958   0.112 0.911298
## CountryZIM   -17.387     12.736  -1.365 0.174356
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.427      7.011   1.487  0.13916
## CountryKEN    31.328     11.085   2.826  0.00540 **
## CountryETH     9.613     30.559   0.315  0.75356
## CountryGUI    -8.009     10.399  -0.770  0.44249
## CountryGHA    59.312      9.915   5.982 1.72e-08 ***
## CountryBKF    25.200      8.350   3.018  0.00302 **
## CountryMOZ    -2.427     22.170  -0.109  0.91297
## CountrySAF    10.705     12.639   0.847  0.39842
## CountrySEN    13.847     10.399   1.332  0.18514
## CountrySWA   -10.427     30.559  -0.341  0.73345
## CountryUGA    -1.145     15.036  -0.076  0.93940
## CountryURT    19.771     14.021   1.410  0.16072
## CountryZAI    -7.567     30.559  -0.248  0.80478
## CountryZAM    34.783     30.559   1.138  0.25696
## CountryZIM    13.941     11.731   1.188  0.23669
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    8.000     21.032   0.380  0.70424
## CountryMLI     2.427     22.170   0.109  0.91297
## CountryKEN    33.755     22.717   1.486  0.13955
## CountryETH    12.040     36.429   0.331  0.74151
## CountryGUI    -5.581     22.390  -0.249  0.80351
## CountryGHA    61.739     22.170   2.785  0.00609 **
## CountryBKF    27.627     21.516   1.284  0.20123
## CountrySAF    13.132     23.515   0.558  0.57740
## CountrySEN    16.274     22.390   0.727  0.46854
## CountrySWA    -8.000     36.429  -0.220  0.82650
## CountryUGA     1.282     24.886   0.052  0.95899
## CountryURT    22.198     24.286   0.914  0.36225
## CountryZAI    -5.140     36.429  -0.141  0.88799
## CountryZAM    37.210     36.429   1.021  0.30879
## CountryZIM    16.368     23.040   0.710  0.47861
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.8600    29.7439   0.096   0.9235
## CountryMOZ    5.1400    36.4287   0.141   0.8880
## CountryMLI    7.5672    30.5590   0.248   0.8048
## CountryKEN   38.8950    30.9585   1.256   0.2111
## CountryETH   17.1800    42.0643   0.408   0.6836
## CountryGUI   -0.4413    30.7194  -0.014   0.9886
## CountryGHA   66.8794    30.5590   2.189   0.0303 *
## CountryBKF   32.7674    30.0878   1.089   0.2780
## CountrySAF   18.2725    31.5482   0.579   0.5634
## CountrySEN   21.4140    30.7194   0.697   0.4869
## CountrySWA   -2.8600    42.0643  -0.068   0.9459
## CountryUGA    6.4220    32.5829   0.197   0.8440
## CountryURT   27.3383    32.1271   0.851   0.3962
## CountryZAM   42.3500    42.0643   1.007   0.3158
## CountryZIM   21.5080    31.1957   0.689   0.4917
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24.274      7.680   3.161  0.00193 **
## CountryZAI   -21.414     30.719  -0.697  0.48690
## CountryMOZ   -16.274     22.390  -0.727  0.46854
## CountryMLI   -13.847     10.399  -1.332  0.18514
## CountryKEN    17.481     11.520   1.517  0.13139
## CountryETH    -4.234     30.719  -0.138  0.89057
```

```
## CountryGUI   -21.855     10.861  -2.012  0.04609 *
## CountryGHA    45.465     10.399   4.372 2.37e-05 ***
## CountryBKF    11.353      8.919   1.273  0.20515
## CountrySAF    -3.142     13.022  -0.241  0.80971
## CountrySWA   -24.274     30.719  -0.790  0.43075
## CountryUGA   -14.992     15.360  -0.976  0.33071
## CountryURT     5.924     14.368   0.412  0.68072
## CountryZAM    20.936     30.719   0.682  0.49666
## CountryZIM     0.094     12.143   0.008  0.99383
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 4.935e-13  2.974e+01   0.000    1.000
## CountrySEN  2.427e+01  3.072e+01   0.790    0.431
## CountryZAI  2.860e+00  4.206e+01   0.068    0.946
## CountryMOZ  8.000e+00  3.643e+01   0.220    0.826
## CountryMLI  1.043e+01  3.056e+01   0.341    0.733
## CountryKEN  4.175e+01  3.096e+01   1.349    0.180
## CountryETH  2.004e+01  4.206e+01   0.476    0.635
## CountryGUI  2.419e+00  3.072e+01   0.079    0.937
## CountryGHA  6.974e+01  3.056e+01   2.282    0.024 *
## CountryBKF  3.563e+01  3.009e+01   1.184    0.238
## CountrySAF  2.113e+01  3.155e+01   0.670    0.504
## CountryUGA  9.282e+00  3.258e+01   0.285    0.776
## CountryURT  3.020e+01  3.213e+01   0.940    0.349
## CountryZAM  4.521e+01  4.206e+01   1.075    0.284
## CountryZIM  2.437e+01  3.120e+01   0.781    0.436
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   30.198     12.143   2.487  0.01405 *
## CountrySWA   -30.198     32.127  -0.940  0.34884
## CountrySEN    -5.924     14.368  -0.412  0.68072
## CountryZAI   -27.338     32.127  -0.851  0.39624
## CountryMOZ   -22.198     24.286  -0.914  0.36225
## CountryMLI   -19.771     14.021  -1.410  0.16072
## CountryKEN    11.557     14.872   0.777  0.43842
## CountryETH   -10.158     32.127  -0.316  0.75232
## CountryGUI   -27.780     14.368  -1.933  0.05518 .
## CountryGHA    39.541     14.021   2.820  0.00549 **
## CountryBKF     5.429     12.962   0.419  0.67597
## CountrySAF    -9.066     16.064  -0.564  0.57340
## CountryUGA   -20.916     18.011  -1.161  0.24747
## CountryZAM    15.012     32.127   0.467  0.64104
## CountryZIM    -5.830     15.360  -0.380  0.70482
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.282     13.302   0.698   0.4865
## CountryURT    20.916     18.011   1.161   0.2475
## CountrySWA    -9.282     32.583  -0.285   0.7762
## CountrySEN    14.992     15.360   0.976   0.3307
## CountryZAI    -6.422     32.583  -0.197   0.8440
## CountryMOZ    -1.282     24.886  -0.052   0.9590
## CountryMLI     1.145     15.036   0.076   0.9394
## CountryKEN    32.473     15.832   2.051   0.0421 *
## CountryETH    10.758     32.583   0.330   0.7418
## CountryGUI    -6.863     15.360  -0.447   0.6557
## CountryGHA    60.457     15.036   4.021 9.41e-05 ***
## CountryBKF    26.345     14.054   1.875   0.0629 .
## CountrySAF    11.850     16.957   0.699   0.4858
## CountryZAM    35.928     32.583   1.103   0.2721
## CountryZIM    15.086     16.291   0.926   0.3560
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   21.133     10.516   2.010 0.046388 *
## CountryUGA   -11.850     16.957  -0.699 0.485784
## CountryURT     9.066     16.064   0.564 0.573397
## CountrySWA   -21.133     31.548  -0.670 0.504050
## CountrySEN     3.141     13.022   0.241 0.809713
## CountryZAI   -18.272     31.548  -0.579 0.563383
## CountryMOZ   -13.132     23.515  -0.558 0.577401
## CountryMLI   -10.705     12.639  -0.847 0.398419
## CountryKEN    20.623     13.576   1.519 0.130997
## CountryETH    -1.092     31.548  -0.035 0.972424
## CountryGUI   -18.714     13.022  -1.437 0.152901
## CountryGHA    48.607     12.639   3.846 0.000181 ***
## CountryBKF    14.495     11.453   1.266 0.207727
## CountryZAM    24.077     31.548   0.763 0.446621
## CountryZIM     3.235     14.109   0.229 0.818949
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   45.210     29.744   1.520    0.131
## CountrySAF   -24.078     31.548  -0.763    0.447
## CountryUGA   -35.928     32.583  -1.103    0.272
## CountryURT   -15.012     32.127  -0.467    0.641
## CountrySWA   -45.210     42.064  -1.075    0.284
## CountrySEN   -20.936     30.719  -0.682    0.497
```

```
## CountryZAI   -42.350     42.064  -1.007    0.316
## CountryMOZ   -37.210     36.429  -1.021    0.309
## CountryMLI   -34.783     30.559  -1.138    0.257
## CountryKEN    -3.455     30.958  -0.112    0.911
## CountryETH   -25.170     42.064  -0.598    0.551
## CountryGUI   -42.791     30.719  -1.393    0.166
## CountryGHA    24.529     30.559   0.803    0.424
## CountryBKF    -9.583     30.088  -0.318    0.751
## CountryZIM   -20.842     31.196  -0.668    0.505
##
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Tspp) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -19.625   -2.419   17.636   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24.368      9.406   2.591 0.010584 *
## CountryZAM    20.842     31.196   0.668 0.505159
## CountrySAF    -3.236     14.109  -0.229 0.818949
## CountryUGA   -15.086     16.291  -0.926 0.356024
## CountryURT     5.830     15.360   0.380 0.704824
## CountrySWA   -24.368     31.196  -0.781 0.436034
## CountrySEN    -0.094     12.143  -0.008 0.993834
## CountryZAI   -21.508     31.196  -0.689 0.491671
## CountryMOZ   -16.368     23.040  -0.710 0.478611
## CountryMLI   -13.941     11.731  -1.188 0.236692
## CountryKEN    17.387     12.736   1.365 0.174356
## CountryETH    -4.328     31.196  -0.139 0.889856
## CountryGUI   -21.949     12.143  -1.808 0.072803 .
## CountryGHA    45.371     11.731   3.868 0.000167 ***
## CountryBKF    11.259     10.442   1.078 0.282769
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 884.7024)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 124743  on 141  degrees of freedom
## AIC: 1517.4
##
## Number of Fisher Scoring iterations: 2

#-------------------------------------------------------------
# for Sodalis

# model selection
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_Sod) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Sod) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Sod) ~ Country*Species+Localisation,data=data, family=gauss
ian())
model6<-glm((Prev_Sod) ~ Country+Species+Localisation,data=data, family=gauss
ian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model3  27 1296.12       0.00   0.97   0.97 -615.15
## model4  23 1302.75       6.64   0.03   1.00 -624.19
## model1  16 1330.18      34.06   0.00   1.00 -647.13
## model2  11 1346.01      49.90   0.00   1.00 -661.09
## model6 100 1563.38     267.27   0.00   1.00 -498.05
## model5 103 1596.16     300.05   0.00   1.00 -489.08

summary(model3)

##
## Call:
## glm(formula = (Prev_Sod) ~ Country * Species, family = gaussian(),
##     data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -70.512   -0.338    0.000    0.000   89.357
##
## Coefficients: (124 not defined because of singularities)
```

```
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)            -59.79500   14.23246  -4.201 4.89e-05 ***
## CountryZAM              -2.86000   15.28811  -0.187 0.851895
## CountrySAF              61.07750   15.78949   3.868 0.000173 ***
## CountryUGA              65.60250    9.66905   6.785 3.71e-10 ***
## CountryURT              67.57500   11.84212   5.706 7.43e-08 ***
## CountrySWA              59.79500   19.73687   3.030 0.002955 **
## CountrySEN              59.72231   15.67139   3.811 0.000213 ***
## CountryZAI              71.22500   19.73687   3.609 0.000438 ***
## CountryMOZ              59.79500   19.73687   3.030 0.002955 **
## CountryMLI              59.72231   15.60496   3.827 0.000201 ***
## CountryKEN              15.56111    8.21711   1.894 0.060481 .
## CountryETH              15.57000   15.28811   1.018 0.310361
## CountryGUI              66.10497   15.67139   4.218 4.58e-05 ***
## CountryGHA              59.79500   14.59283   4.098 7.30e-05 ***
## CountryBKF              59.79500   15.03115   3.978 0.000115 ***
## SpeciesGb               14.00000   19.33810   0.724 0.470391
## SpeciesGff              63.84389   16.43423   3.885 0.000162 ***
## SpeciesGmed              4.67000    8.37364   0.558 0.578007
## SpeciesGmm              77.01667   15.28811   5.038 1.54e-06 ***
## SpeciesGmsm              0.33800    7.79544   0.043 0.965482
## SpeciesGp               64.70500   12.48269   5.184 8.11e-07 ***
## SpeciesGpg               0.07269    5.52849   0.013 0.989529
## SpeciesGpp                    NA         NA      NA       NA
## SpeciesGt                     NA         NA      NA       NA
## CountryZAM:SpeciesGb          NA         NA      NA       NA
## CountrySAF:SpeciesGb   -14.25250   21.62065  -0.659 0.510928
## CountryUGA:SpeciesGb          NA         NA      NA       NA
## CountryURT:SpeciesGb          NA         NA      NA       NA
## CountrySWA:SpeciesGb          NA         NA      NA       NA
## CountrySEN:SpeciesGb          NA         NA      NA       NA
## CountryZAI:SpeciesGb          NA         NA      NA       NA
## CountryMOZ:SpeciesGb          NA         NA      NA       NA
## CountryMLI:SpeciesGb          NA         NA      NA       NA
## CountryKEN:SpeciesGb          NA         NA      NA       NA
## CountryETH:SpeciesGb          NA         NA      NA       NA
## CountryGUI:SpeciesGb          NA         NA      NA       NA
## CountryGHA:SpeciesGb          NA         NA      NA       NA
## CountryBKF:SpeciesGb          NA         NA      NA       NA
## CountryZAM:SpeciesGff         NA         NA      NA       NA
## CountrySAF:SpeciesGff         NA         NA      NA       NA
## CountryUGA:SpeciesGff  -65.39139   18.65456  -3.505 0.000626 ***
## CountryURT:SpeciesGff         NA         NA      NA       NA
## CountrySWA:SpeciesGff         NA         NA      NA       NA
## CountrySEN:SpeciesGff         NA         NA      NA       NA
## CountryZAI:SpeciesGff         NA         NA      NA       NA
## CountryMOZ:SpeciesGff         NA         NA      NA       NA
## CountryMLI:SpeciesGff         NA         NA      NA       NA
## CountryKEN:SpeciesGff         NA         NA      NA       NA
## CountryETH:SpeciesGff         NA         NA      NA       NA
```

```
## CountryGUI:SpeciesGff          NA          NA      NA       NA
## CountryGHA:SpeciesGff          NA          NA      NA       NA
## CountryBKF:SpeciesGff          NA          NA      NA       NA
## CountryZAM:SpeciesGmed         NA          NA      NA       NA
## CountrySAF:SpeciesGmed         NA          NA      NA       NA
## CountryUGA:SpeciesGmed         NA          NA      NA       NA
## CountryURT:SpeciesGmed         NA          NA      NA       NA
## CountrySWA:SpeciesGmed         NA          NA      NA       NA
## CountrySEN:SpeciesGmed         NA          NA      NA       NA
## CountryZAI:SpeciesGmed         NA          NA      NA       NA
## CountryMOZ:SpeciesGmed         NA          NA      NA       NA
## CountryMLI:SpeciesGmed         NA          NA      NA       NA
## CountryKEN:SpeciesGmed         NA          NA      NA       NA
## CountryETH:SpeciesGmed         NA          NA      NA       NA
## CountryGUI:SpeciesGmed         NA          NA      NA       NA
## CountryGHA:SpeciesGmed         NA          NA      NA       NA
## CountryBKF:SpeciesGmed         NA          NA      NA       NA
## CountryZAM:SpeciesGmm          NA          NA      NA       NA
## CountrySAF:SpeciesGmm          NA          NA      NA       NA
## CountryUGA:SpeciesGmm          NA          NA      NA       NA
## CountryURT:SpeciesGmm    -8.25667    18.93094  -0.436 0.663454
## CountrySWA:SpeciesGmm          NA          NA      NA       NA
## CountrySEN:SpeciesGmm          NA          NA      NA       NA
## CountryZAI:SpeciesGmm          NA          NA      NA       NA
## CountryMOZ:SpeciesGmm          NA          NA      NA       NA
## CountryMLI:SpeciesGmm          NA          NA      NA       NA
## CountryKEN:SpeciesGmm    30.74722    16.90164   1.819 0.071184 .
## CountryETH:SpeciesGmm          NA          NA      NA       NA
## CountryGUI:SpeciesGmm          NA          NA      NA       NA
## CountryGHA:SpeciesGmm          NA          NA      NA       NA
## CountryBKF:SpeciesGmm          NA          NA      NA       NA
## CountryZAM:SpeciesGmsm         NA          NA      NA       NA
## CountrySAF:SpeciesGmsm         NA          NA      NA       NA
## CountryUGA:SpeciesGmsm         NA          NA      NA       NA
## CountryURT:SpeciesGmsm         NA          NA      NA       NA
## CountrySWA:SpeciesGmsm         NA          NA      NA       NA
## CountrySEN:SpeciesGmsm         NA          NA      NA       NA
## CountryZAI:SpeciesGmsm         NA          NA      NA       NA
## CountryMOZ:SpeciesGmsm         NA          NA      NA       NA
## CountryMLI:SpeciesGmsm         NA          NA      NA       NA
## CountryKEN:SpeciesGmsm         NA          NA      NA       NA
## CountryETH:SpeciesGmsm         NA          NA      NA       NA
## CountryGUI:SpeciesGmsm         NA          NA      NA       NA
## CountryGHA:SpeciesGmsm         NA          NA      NA       NA
## CountryBKF:SpeciesGmsm         NA          NA      NA       NA
## CountryZAM:SpeciesGp           NA          NA      NA       NA
## CountrySAF:SpeciesGp           NA          NA      NA       NA
## CountryUGA:SpeciesGp           NA          NA      NA       NA
## CountryURT:SpeciesGp           NA          NA      NA       NA
## CountrySWA:SpeciesGp           NA          NA      NA       NA
```

```
## CountrySEN:SpeciesGp          NA          NA       NA       NA
## CountryZAI:SpeciesGp          NA          NA       NA       NA
## CountryMOZ:SpeciesGp          NA          NA       NA       NA
## CountryMLI:SpeciesGp          NA          NA       NA       NA
## CountryKEN:SpeciesGp          NA          NA       NA       NA
## CountryETH:SpeciesGp          NA          NA       NA       NA
## CountryGUI:SpeciesGp          NA          NA       NA       NA
## CountryGHA:SpeciesGp          NA          NA       NA       NA
## CountryBKF:SpeciesGp          NA          NA       NA       NA
## CountryZAM:SpeciesGpg         NA          NA       NA       NA
## CountrySAF:SpeciesGpg         NA          NA       NA       NA
## CountryUGA:SpeciesGpg         NA          NA       NA       NA
## CountryURT:SpeciesGpg         NA          NA       NA       NA
## CountrySWA:SpeciesGpg         NA          NA       NA       NA
## CountrySEN:SpeciesGpg         NA          NA       NA       NA
## CountryZAI:SpeciesGpg         NA          NA       NA       NA
## CountryMOZ:SpeciesGpg         NA          NA       NA       NA
## CountryMLI:SpeciesGpg         NA          NA       NA       NA
## CountryKEN:SpeciesGpg         NA          NA       NA       NA
## CountryETH:SpeciesGpg         NA          NA       NA       NA
## CountryGUI:SpeciesGpg         NA          NA       NA       NA
## CountryGHA:SpeciesGpg         NA          NA       NA       NA
## CountryBKF:SpeciesGpg         NA          NA       NA       NA
## CountryZAM:SpeciesGpp         NA          NA       NA       NA
## CountrySAF:SpeciesGpp         NA          NA       NA       NA
## CountryUGA:SpeciesGpp         NA          NA       NA       NA
## CountryURT:SpeciesGpp         NA          NA       NA       NA
## CountrySWA:SpeciesGpp         NA          NA       NA       NA
## CountrySEN:SpeciesGpp         NA          NA       NA       NA
## CountryZAI:SpeciesGpp         NA          NA       NA       NA
## CountryMOZ:SpeciesGpp         NA          NA       NA       NA
## CountryMLI:SpeciesGpp         NA          NA       NA       NA
## CountryKEN:SpeciesGpp         NA          NA       NA       NA
## CountryETH:SpeciesGpp         NA          NA       NA       NA
## CountryGUI:SpeciesGpp         NA          NA       NA       NA
## CountryGHA:SpeciesGpp         NA          NA       NA       NA
## CountryBKF:SpeciesGpp         NA          NA       NA       NA
## CountryZAM:SpeciesGt          NA          NA       NA       NA
## CountrySAF:SpeciesGt          NA          NA       NA       NA
## CountryUGA:SpeciesGt          NA          NA       NA       NA
## CountryURT:SpeciesGt          NA          NA       NA       NA
## CountrySWA:SpeciesGt          NA          NA       NA       NA
## CountrySEN:SpeciesGt          NA          NA       NA       NA
## CountryZAI:SpeciesGt          NA          NA       NA       NA
## CountryMOZ:SpeciesGt          NA          NA       NA       NA
## CountryMLI:SpeciesGt          NA          NA       NA       NA
## CountryKEN:SpeciesGt          NA          NA       NA       NA
## CountryETH:SpeciesGt          NA          NA       NA       NA
## CountryGUI:SpeciesGt          NA          NA       NA       NA
## CountryGHA:SpeciesGt          NA          NA       NA       NA
```

```
## CountryBKF:SpeciesGt          NA         NA      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 186.9811)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 24308  on 130  degrees of freedom
## AIC: 1284.3
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model3)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##                 LR Chisq Df Pr(>Chisq)
## Country           88.292 12  1.056e-13 ***
## Species           49.906  7  1.507e-08 ***
## Country:Species   15.979  4   0.003048 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   108.02 14  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Species   69.601  9  1.824e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5177     2.4578   0.211   0.8335
## CountryZIM   11.7793     5.6584   2.082   0.0392 *
## CountryZAM    1.5323    16.3035   0.094   0.9253
## CountrySAF    0.6386     6.2058   0.103   0.9182
## CountryUGA   56.7443     7.6154   7.451 8.47e-12 ***
## CountryURT   40.2907     7.0239   5.736 5.68e-08 ***
## CountrySWA   -0.5177    16.3035  -0.032   0.9747
## CountrySEN   -0.5177     4.8331  -0.107   0.9149
## CountryZAI   10.9123    16.3035   0.669   0.5044
## CountryMOZ    6.4823    11.6586   0.556   0.5791
## CountryMLI   -0.5177     4.5246  -0.114   0.9091
## CountryKEN   23.3982     5.2619   4.447 1.75e-05 ***
## CountryETH   19.9623    16.3035   1.224   0.2228
## CountryGUI    5.8650     4.8331   1.214   0.2270
## CountryGHA   -0.5177     4.5246  -0.114   0.9091
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.073e-14  3.799e+00   0.000 1.000000
## CountryBKF   5.177e-01  4.525e+00   0.114 0.909074
## CountryZIM   1.230e+01  6.357e+00   1.934 0.055055 .
## CountryZAM   2.050e+00  1.656e+01   0.124 0.901649
```

```
## CountrySAF   1.156e+00  6.848e+00   0.169 0.866170
## CountryUGA   5.726e+01  8.148e+00   7.028 8.24e-11 ***
## CountryURT   4.081e+01  7.598e+00   5.371 3.15e-07 ***
## CountrySWA   4.437e-14  1.656e+01   0.000 1.000000
## CountrySEN   6.333e-14  5.635e+00   0.000 1.000000
## CountryZAI   1.143e+01  1.656e+01   0.690 0.491162
## CountryMOZ   7.000e+00  1.201e+01   0.583 0.561026
## CountryMLI   2.074e-14  5.372e+00   0.000 1.000000
## CountryKEN   2.392e+01  6.007e+00   3.982 0.000109 ***
## CountryETH   2.048e+01  1.656e+01   1.237 0.218217
## CountryGUI   6.383e+00  5.635e+00   1.133 0.259238
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   6.3827     4.1614   1.534  0.12733
## CountryGHA   -6.3827     5.6346  -1.133  0.25924
## CountryBKF   -5.8650     4.8331  -1.214  0.22696
## CountryZIM    5.9143     6.5798   0.899  0.37026
## CountryZAM   -4.3327    16.6458  -0.260  0.79502
## CountrySAF   -5.2264     7.0561  -0.741  0.46011
## CountryUGA   50.8793     8.3229   6.113 9.05e-09 ***
## CountryURT   34.4257     7.7853   4.422 1.94e-05 ***
## CountrySWA   -6.3827    16.6458  -0.383  0.70197
## CountrySEN   -6.3827     5.8852  -1.085  0.27998
## CountryZAI    5.0473    16.6458   0.303  0.76217
## CountryMOZ    0.6173    12.1326   0.051  0.95949
## CountryMLI   -6.3827     5.6346  -1.133  0.25924
## CountryKEN   17.5332     6.2422   2.809  0.00568 **
```

```
## CountryETH   14.0973    16.6458   0.847  0.39848
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   20.480     16.117   1.271    0.206
## CountryGUI   -14.097     16.646  -0.847    0.398
## CountryGHA   -20.480     16.559  -1.237    0.218
## CountryBKF   -19.962     16.304  -1.224    0.223
## CountryZIM    -8.183     16.904  -0.484    0.629
## CountryZAM   -18.430     22.793  -0.809    0.420
## CountrySAF   -19.324     17.095  -1.130    0.260
## CountryUGA    36.782     17.656   2.083    0.039 *
## CountryURT    20.328     17.409   1.168    0.245
## CountrySWA   -20.480     22.793  -0.899    0.370
## CountrySEN   -20.480     16.646  -1.230    0.221
## CountryZAI    -9.050     22.793  -0.397    0.692
## CountryMOZ   -13.480     19.739  -0.683    0.496
## CountryMLI   -20.480     16.559  -1.237    0.218
## CountryKEN     3.436     16.775   0.205    0.838
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   23.916      4.653   5.140 8.99e-07 ***
## CountryETH    -3.436     16.775  -0.205 0.838012
## CountryGUI   -17.533      6.242  -2.809 0.005678 **
## CountryGHA   -23.916      6.007  -3.982 0.000109 ***
## CountryBKF   -23.398      5.262  -4.447 1.75e-05 ***
## CountryZIM   -11.619      6.901  -1.684 0.094462 .
## CountryZAM   -21.866     16.775  -1.303 0.194544
## CountrySAF   -22.760      7.356  -3.094 0.002383 **
## CountryUGA    33.346      8.579   3.887 0.000156 ***
## CountryURT    16.893      8.059   2.096 0.037850 *
## CountrySWA   -23.916     16.775  -1.426 0.156178
## CountrySEN   -23.916      6.242  -3.831 0.000191 ***
## CountryZAI   -12.486     16.775  -0.744 0.457935
## CountryMOZ   -16.916     12.310  -1.374 0.171564
## CountryMLI   -23.916      6.007  -3.982 0.000109 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.593e-14  3.799e+00   0.000 1.000000
## CountryKEN   2.392e+01  6.007e+00   3.982 0.000109 ***
## CountryETH   2.048e+01  1.656e+01   1.237 0.218217
## CountryGUI   6.383e+00  5.635e+00   1.133 0.259238
## CountryGHA   1.606e-14  5.372e+00   0.000 1.000000
## CountryBKF   5.177e-01  4.525e+00   0.114 0.909074
## CountryZIM   1.230e+01  6.357e+00   1.934 0.055055 .
## CountryZAM   2.050e+00  1.656e+01   0.124 0.901649
## CountrySAF   1.156e+00  6.848e+00   0.169 0.866170
## CountryUGA   5.726e+01  8.148e+00   7.028 8.24e-11 ***
## CountryURT   4.081e+01  7.598e+00   5.371 3.15e-07 ***
## CountrySWA  -1.030e-14  1.656e+01   0.000 1.000000
## CountrySEN  -5.405e-15  5.635e+00   0.000 1.000000
## CountryZAI   1.143e+01  1.656e+01   0.690 0.491162
## CountryMOZ   7.000e+00  1.201e+01   0.583 0.561026
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   7.0000    11.3966   0.614 0.540060
## CountryMLI   -7.0000    12.0130  -0.583 0.561026
## CountryKEN   16.9158    12.3097   1.374 0.171564
## CountryETH   13.4800    19.7395   0.683 0.495793
```

```
## CountryGUI   -0.6173    12.1326  -0.051 0.959491
## CountryGHA   -7.0000    12.0130  -0.583 0.561026
## CountryBKF   -6.4823    11.6586  -0.556 0.579084
## CountryZIM    5.2970    12.4843   0.424 0.672000
## CountryZAM   -4.9500    19.7395  -0.251 0.802359
## CountrySAF   -5.8438    12.7418  -0.459 0.647206
## CountryUGA   50.2620    13.4846   3.727 0.000279 ***
## CountryURT   33.8083    13.1596   2.569 0.011236 *
## CountrySWA   -7.0000    19.7395  -0.355 0.723404
## CountrySEN   -7.0000    12.1326  -0.577 0.564887
## CountryZAI    4.4300    19.7395   0.224 0.822753
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11.430     16.117   0.709   0.4794
## CountryMOZ    -4.430     19.739  -0.224   0.8228
## CountryMLI   -11.430     16.559  -0.690   0.4912
## CountryKEN    12.486     16.775   0.744   0.4579
## CountryETH     9.050     22.793   0.397   0.6919
## CountryGUI    -5.047     16.646  -0.303   0.7622
## CountryGHA   -11.430     16.559  -0.690   0.4912
## CountryBKF   -10.912     16.303  -0.669   0.5044
## CountryZIM     0.867     16.904   0.051   0.9592
## CountryZAM    -9.380     22.793  -0.412   0.6813
## CountrySAF   -10.274     17.095  -0.601   0.5488
## CountryUGA    45.832     17.655   2.596   0.0104 *
## CountryURT    29.378     17.409   1.688   0.0937 .
## CountrySWA   -11.430     22.793  -0.501   0.6168
```

```
## CountrySEN   -11.430     16.646  -0.687   0.4934
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.003e-14  4.161e+00   0.000 1.000000
## CountryZAI   1.143e+01  1.665e+01   0.687 0.493424
## CountryMOZ   7.000e+00  1.213e+01   0.577 0.564887
## CountryMLI   5.839e-14  5.635e+00   0.000 1.000000
## CountryKEN   2.392e+01  6.242e+00   3.831 0.000191 ***
## CountryETH   2.048e+01  1.665e+01   1.230 0.220618
## CountryGUI   6.383e+00  5.885e+00   1.085 0.279979
## CountryGHA   3.874e-14  5.635e+00   0.000 1.000000
## CountryBKF   5.177e-01  4.833e+00   0.107 0.914853
## CountryZIM   1.230e+01  6.580e+00   1.869 0.063712 .
## CountryZAM   2.050e+00  1.665e+01   0.123 0.902160
## CountrySAF   1.156e+00  7.056e+00   0.164 0.870071
## CountryUGA   5.726e+01  8.323e+00   6.880 1.80e-10 ***
## CountryURT   4.081e+01  7.785e+00   5.242 5.69e-07 ***
## CountrySWA   3.082e-13  1.665e+01   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.094e-13  1.612e+01   0.000  1.00000
## CountrySEN  -2.094e-13  1.665e+01   0.000  1.00000
## CountryZAI   1.143e+01  2.279e+01   0.501  0.61683
## CountryMOZ   7.000e+00  1.974e+01   0.355  0.72340
## CountryMLI  -2.721e-13  1.656e+01   0.000  1.00000
## CountryKEN   2.392e+01  1.678e+01   1.426  0.15618
## CountryETH   2.048e+01  2.279e+01   0.899  0.37044
## CountryGUI   6.383e+00  1.665e+01   0.383  0.70197
## CountryGHA  -1.970e-13  1.656e+01   0.000  1.00000
## CountryBKF   5.177e-01  1.630e+01   0.032  0.97471
## CountryZIM   1.230e+01  1.690e+01   0.727  0.46815
## CountryZAM   2.050e+00  2.279e+01   0.090  0.92846
## CountrySAF   1.156e+00  1.709e+01   0.068  0.94617
## CountryUGA   5.726e+01  1.766e+01   3.243  0.00148 **
## CountryURT   4.081e+01  1.741e+01   2.344  0.02047 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   40.808      6.580   6.202 5.82e-09 ***
## CountrySWA   -40.808     17.409  -2.344 0.020467 *
## CountrySEN   -40.808      7.785  -5.242 5.69e-07 ***
## CountryZAI   -29.378     17.409  -1.688 0.093703 .
## CountryMOZ   -33.808     13.160  -2.569 0.011236 *
## CountryMLI   -40.808      7.598  -5.371 3.15e-07 ***
## CountryKEN   -16.892      8.059  -2.096 0.037850 *
## CountryETH   -20.328     17.409  -1.168 0.244890
## CountryGUI   -34.426      7.785  -4.422 1.94e-05 ***
## CountryGHA   -40.808      7.598  -5.371 3.15e-07 ***
## CountryBKF   -40.291      7.024  -5.736 5.68e-08 ***
## CountryZIM   -28.511      8.323  -3.426 0.000804 ***
## CountryZAM   -38.758     17.409  -2.226 0.027574 *
## CountrySAF   -39.652      8.704  -4.555 1.12e-05 ***
## CountryUGA    16.454      9.759   1.686 0.094022 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   57.262      7.208   7.944 5.61e-13 ***
## CountryURT   -16.454      9.759  -1.686 0.094022 .
## CountrySWA   -57.262     17.656  -3.243 0.001475 **
## CountrySEN   -57.262      8.323  -6.880 1.80e-10 ***
```

```
## CountryZAI   -45.832     17.656  -2.596 0.010433 *
## CountryMOZ   -50.262     13.485  -3.727 0.000279 ***
## CountryMLI   -57.262      8.148  -7.028 8.24e-11 ***
## CountryKEN   -33.346      8.579  -3.887 0.000156 ***
## CountryETH   -36.782     17.656  -2.083 0.039028 *
## CountryGUI   -50.879      8.323  -6.113 9.05e-09 ***
## CountryGHA   -57.262      8.148  -7.028 8.24e-11 ***
## CountryBKF   -56.744      7.615  -7.451 8.47e-12 ***
## CountryZIM   -44.965      8.828  -5.094 1.11e-06 ***
## CountryZAM   -55.212     17.656  -3.127 0.002144 **
## CountrySAF   -56.106      9.188  -6.106 9.37e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.1562     5.6983   0.203  0.83950
## CountryUGA   56.1057     9.1882   6.106 9.37e-09 ***
## CountryURT   39.6521     8.7043   4.555 1.12e-05 ***
## CountrySWA   -1.1562    17.0949  -0.068  0.94617
## CountrySEN   -1.1563     7.0561  -0.164  0.87007
## CountryZAI   10.2737    17.0949   0.601  0.54882
## CountryMOZ    5.8438    12.7418   0.459  0.64721
## CountryMLI   -1.1562     6.8485  -0.169  0.86617
## CountryKEN   22.7596     7.3565   3.094  0.00238 **
## CountryETH   19.3238    17.0949   1.130  0.26023
## CountryGUI    5.2264     7.0561   0.741  0.46011
## CountryGHA   -1.1562     6.8485  -0.169  0.86617
## CountryBKF   -0.6386     6.2058  -0.103  0.91819
## CountryZIM   11.1408     7.6451   1.457  0.14727
```

```
## CountryZAM    0.8938    17.0949   0.052  0.95838
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.0500    16.1172   0.127  0.89897
## CountrySAF   -0.8937    17.0949  -0.052  0.95838
## CountryUGA   55.2120    17.6555   3.127  0.00214 **
## CountryURT   38.7583    17.4086   2.226  0.02757 *
## CountrySWA   -2.0500    22.7932  -0.090  0.92846
## CountrySEN   -2.0500    16.6458  -0.123  0.90216
## CountryZAI    9.3800    22.7932   0.412  0.68131
## CountryMOZ    4.9500    19.7395   0.251  0.80236
## CountryMLI   -2.0500    16.5588  -0.124  0.90165
## CountryKEN   21.8658    16.7753   1.303  0.19454
## CountryETH   18.4300    22.7932   0.809  0.42012
## CountryGUI    4.3327    16.6458   0.260  0.79502
## CountryGHA   -2.0500    16.5588  -0.124  0.90165
## CountryBKF   -1.5323    16.3035  -0.094  0.92525
## CountryZIM   10.2470    16.9039   0.606  0.54536
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
```

```
##
## Number of Fisher Scoring iterations: 2

data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Sod) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -57.262   -0.518    0.000    0.000   89.357
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   12.297      5.097   2.413 0.017118 *
## CountryZAM   -10.247     16.904  -0.606 0.545361
## CountrySAF   -11.141      7.645  -1.457 0.147271
## CountryUGA    44.965      8.828   5.094 1.11e-06 ***
## CountryURT    28.511      8.323   3.426 0.000804 ***
## CountrySWA   -12.297     16.904  -0.727 0.468146
## CountrySEN   -12.297      6.580  -1.869 0.063712 .
## CountryZAI    -0.867     16.904  -0.051 0.959167
## CountryMOZ    -5.297     12.484  -0.424 0.672000
## CountryMLI   -12.297      6.357  -1.934 0.055055 .
## CountryKEN    11.619      6.901   1.684 0.094462 .
## CountryETH     8.183     16.904   0.484 0.629073
## CountryGUI    -5.914      6.580  -0.899 0.370260
## CountryGHA   -12.297      6.357  -1.934 0.055055 .
## CountryBKF   -11.779      5.658  -2.082 0.039174 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 259.7641)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 36627  on 141  degrees of freedom
## AIC: 1326.3
##
## Number of Fisher Scoring iterations: 2
```

Statistics for table 3

```
# for trypanosome Tspp

data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.970     10.945   1.368  0.17349
## SpeciesGb      2.096     18.314   0.114  0.90904
## SpeciesGff     2.747     21.890   0.125  0.90032
## SpeciesGmed   28.225     19.731   1.430  0.15472
## SpeciesGmm     9.161     15.955   0.574  0.56672
## SpeciesGmsm    1.064     18.314   0.058  0.95375
## SpeciesGp     21.049     13.082   1.609  0.10977
## SpeciesGpg     8.596     11.591   0.742  0.45955
## SpeciesGpp   -12.110     34.611  -0.350  0.72692
## SpeciesGt     38.052     12.699   2.997  0.00321 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  17.0660    14.6841   1.162   0.2470
## SpeciesGa    -2.0960    18.3143  -0.114   0.9090
## SpeciesGff    0.6507    23.9790   0.027   0.9784
## SpeciesGmed  26.1290    22.0261   1.186   0.2374
## SpeciesGmm    7.0652    18.7186   0.377   0.7064
```

```
## SpeciesGmsm  -1.0320    20.7664  -0.050   0.9604
## SpeciesGp    18.9526    16.3390   1.160   0.2480
## SpeciesGpg    6.4995    15.1721   0.428   0.6690
## SpeciesGpp  -14.2060    35.9685  -0.395   0.6935
## SpeciesGt    35.9559    16.0340   2.242   0.0264 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  17.7167    18.9571   0.935   0.3516
## SpeciesGb    -0.6507    23.9790  -0.027   0.9784
## SpeciesGa    -2.7467    21.8898  -0.125   0.9003
## SpeciesGmed  25.4783    25.0779   1.016   0.3113
## SpeciesGmm    6.4146    22.2292   0.289   0.7733
## SpeciesGmsm  -1.6827    23.9790  -0.070   0.9442
## SpeciesGp    18.3019    20.2660   0.903   0.3680
## SpeciesGpg    5.8489    19.3375   0.302   0.7627
## SpeciesGpp  -14.8567    37.9142  -0.392   0.6957
## SpeciesGt    35.3053    20.0209   1.763   0.0799 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   43.195     16.417   2.631  0.00943 **
## SpeciesGff   -25.478     25.078  -1.016  0.31132
## SpeciesGb    -26.129     22.026  -1.186  0.23744
## SpeciesGa    -28.225     19.731  -1.430  0.15472
## SpeciesGmm   -19.064     20.107  -0.948  0.34464
## SpeciesGmsm  -27.161     22.026  -1.233  0.21951
## SpeciesGp     -7.176     17.913  -0.401  0.68928
## SpeciesGpg   -19.629     16.855  -1.165  0.24608
## SpeciesGpp   -40.335     36.710  -1.099  0.27369
## SpeciesGt      9.827     17.635   0.557  0.57822
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  24.1312    11.6088   2.079   0.0394 *
```

```
## SpeciesGmed  19.0637    20.1070   0.948   0.3446
## SpeciesGff   -6.4146    22.2292  -0.289   0.7733
## SpeciesGb    -7.0652    18.7186  -0.377   0.7064
## SpeciesGa    -9.1612    15.9548  -0.574   0.5667
## SpeciesGmsm  -8.0972    18.7186  -0.433   0.6660
## SpeciesGp    11.8873    13.6420   0.871   0.3850
## SpeciesGpg   -0.5657    12.2202  -0.046   0.9631
## SpeciesGpp  -21.2713    34.8264  -0.611   0.5423
## SpeciesGt    28.8907    13.2752   2.176   0.0311 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   16.034     14.684   1.092   0.2767
## SpeciesGmm     8.097     18.719   0.433   0.6660
## SpeciesGmed   27.161     22.026   1.233   0.2195
## SpeciesGff     1.683     23.979   0.070   0.9442
## SpeciesGb      1.032     20.766   0.050   0.9604
## SpeciesGa     -1.064     18.314  -0.058   0.9538
## SpeciesGp     19.985     16.339   1.223   0.2233
## SpeciesGpg     7.532     15.172   0.496   0.6204
## SpeciesGpp   -13.174     35.969  -0.366   0.7147
## SpeciesGt     36.988     16.034   2.307   0.0225 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
```

```
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   36.019      7.165   5.027 1.44e-06 ***
## SpeciesGmsm  -19.985     16.339  -1.223   0.2233
## SpeciesGmm   -11.887     13.642  -0.871   0.3850
## SpeciesGmed    7.176     17.913   0.401   0.6893
## SpeciesGff   -18.302     20.266  -0.903   0.3680
## SpeciesGb    -18.953     16.339  -1.160   0.2480
## SpeciesGa    -21.049     13.082  -1.609   0.1098
## SpeciesGpg   -12.453      8.118  -1.534   0.1272
## SpeciesGpp   -33.159     33.607  -0.987   0.3254
## SpeciesGt     17.003      9.634   1.765   0.0797 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
```

```
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  23.5655     3.8169   6.174 6.26e-09 ***
## SpeciesGp    12.4530     8.1184   1.534 0.127210
## SpeciesGmsm  -7.5315    15.1721  -0.496 0.620353
## SpeciesGmm    0.5657    12.2202   0.046 0.963140
## SpeciesGmed  19.6295    16.8552   1.165 0.246083
## SpeciesGff   -5.8489    19.3375  -0.302 0.762730
## SpeciesGb    -6.4995    15.1721  -0.428 0.669000
## SpeciesGa    -8.5955    11.5914  -0.742 0.459553
## SpeciesGpp  -20.7055    33.0557  -0.626 0.532042
## SpeciesGt    29.4564     7.4857   3.935 0.000128 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     2.86      32.84   0.087    0.931
## SpeciesGpg     20.71      33.06   0.626    0.532
## SpeciesGp      33.16      33.61   0.987    0.325
## SpeciesGmsm    13.17      35.97   0.366    0.715
## SpeciesGmm     21.27      34.83   0.611    0.542
## SpeciesGmed    40.34      36.71   1.099    0.274
## SpeciesGff     14.86      37.91   0.392    0.696
## SpeciesGb      14.21      35.97   0.395    0.693
## SpeciesGa      12.11      34.61   0.350    0.727
## SpeciesGt      50.16      33.46   1.499    0.136
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
```

```
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Tspp) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -53.02  -23.57  -14.97   21.89   76.43
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   53.022      6.439   8.234 9.33e-14 ***
## SpeciesGpp   -50.162     33.460  -1.499 0.135992
## SpeciesGpg   -29.456      7.486  -3.935 0.000128 ***
## SpeciesGp    -17.003      9.634  -1.765 0.079651 .
## SpeciesGmsm  -36.988     16.034  -2.307 0.022470 *
## SpeciesGmm   -28.891     13.275  -2.176 0.031141 *
## SpeciesGmed   -9.827     17.635  -0.557 0.578217
## SpeciesGff   -35.305     20.021  -1.763 0.079922 .
## SpeciesGb    -35.956     16.034  -2.242 0.026437 *
## SpeciesGa    -38.052     12.699  -2.997 0.003210 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1078.113)
##
##     Null deviance: 180975  on 155  degrees of freedom
## Residual deviance: 157405  on 146  degrees of freedom
## AIC: 1543.7
##
## Number of Fisher Scoring iterations: 2
```

```
#-------------------------------------------------------------
# for Sodalis

data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.1633     5.7738   0.548  0.58461
## SpeciesGt    -3.1633     6.6990  -0.472  0.63748
## SpeciesGpp    8.2667    18.2583   0.453  0.65139
## SpeciesGpg   -1.8440     6.1148  -0.302  0.76341
## SpeciesGp    27.9524     6.9010   4.050 8.27e-05 ***
## SpeciesGmsm  -2.8253     9.6614  -0.292  0.77037
## SpeciesGmm   27.2617     8.4167   3.239  0.00149 **
## SpeciesGmed   1.5067    10.4088   0.145  0.88511
## SpeciesGff   11.3300    11.5476   0.981  0.32814
## SpeciesGb     0.4607     9.6614   0.048  0.96204
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Species   69.601  9  1.824e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.6240     7.7463   0.468  0.64060
## SpeciesGa    -0.4607     9.6614  -0.048  0.96204
## SpeciesGt    -3.6240     8.4584  -0.428  0.66896
## SpeciesGpp    7.8060    18.9746   0.411  0.68139
## SpeciesGpg   -2.3047     8.0038  -0.288  0.77379
## SpeciesGp    27.4917     8.6193   3.190  0.00174 **
## SpeciesGmsm  -3.2860    10.9550  -0.300  0.76464
## SpeciesGmm   26.8010     9.8747   2.714  0.00745 **
## SpeciesGmed   1.0460    11.6195   0.090  0.92839
## SpeciesGff   10.8693    12.6497   0.859  0.39161
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.493     10.000   1.449    0.149
## SpeciesGb    -10.869     12.650  -0.859    0.392
## SpeciesGa    -11.330     11.548  -0.981    0.328
## SpeciesGt    -14.493     10.562  -1.372    0.172
## SpeciesGpp    -3.063     20.001  -0.153    0.878
## SpeciesGpg   -13.174     10.201  -1.291    0.199
## SpeciesGp     16.622     10.691   1.555    0.122
## SpeciesGmsm  -14.155     12.650  -1.119    0.265
## SpeciesGmm    15.932     11.727   1.359    0.176
## SpeciesGmed   -9.823     13.229  -0.743    0.459
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
```

```
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.670      8.661   0.539  0.59056
## SpeciesGff     9.823     13.229   0.743  0.45895
## SpeciesGb     -1.046     11.619  -0.090  0.92839
## SpeciesGa     -1.507     10.409  -0.145  0.88511
## SpeciesGt     -4.670      9.303  -0.502  0.61643
## SpeciesGpp     6.760     19.366   0.349  0.72754
## SpeciesGpg    -3.351      8.892  -0.377  0.70684
## SpeciesGp     26.446      9.450   2.799  0.00583 **
## SpeciesGmsm   -4.332     11.619  -0.373  0.70982
## SpeciesGmm    25.755     10.607   2.428  0.01640 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  30.4250     6.1240   4.968 1.87e-06 ***
## SpeciesGmed -25.7550    10.6071  -2.428  0.01640 *
## SpeciesGff  -15.9317    11.7266  -1.359  0.17637
## SpeciesGb   -26.8010     9.8747  -2.714  0.00745 **
## SpeciesGa   -27.2617     8.4167  -3.239  0.00149 **
## SpeciesGt   -30.4250     7.0031  -4.345 2.60e-05 ***
## SpeciesGpp  -18.9950    18.3720  -1.034  0.30289
## SpeciesGpg  -29.1057     6.4465  -4.515 1.30e-05 ***
## SpeciesGp     0.6907     7.1966   0.096  0.92367
## SpeciesGmsm -30.0870     9.8747  -3.047  0.00274 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3380     7.7463   0.044 0.965256
## SpeciesGmm   30.0870     9.8747   3.047 0.002745 **
## SpeciesGmed   4.3320    11.6195   0.373 0.709822
## SpeciesGff   14.1553    12.6497   1.119 0.264967
## SpeciesGb     3.2860    10.9550   0.300 0.764638
## SpeciesGa     2.8253     9.6614   0.292 0.770368
## SpeciesGt    -0.3380     8.4584  -0.040 0.968180
## SpeciesGpp   11.0920    18.9746   0.585 0.559738
## SpeciesGpg    0.9813     8.0038   0.123 0.902586
## SpeciesGp    30.7777     8.6193   3.571 0.000482 ***
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  31.1157     3.7798   8.232 9.43e-14 ***
## SpeciesGmsm -30.7777     8.6193  -3.571 0.000482 ***
## SpeciesGmm   -0.6907     7.1966  -0.096 0.923669
## SpeciesGmed -26.4457     9.4496  -2.799 0.005826 **
## SpeciesGff  -16.6224    10.6910  -1.555 0.122157
## SpeciesGb   -27.4917     8.6193  -3.190 0.001744 **
## SpeciesGa   -27.9524     6.9010  -4.050 8.27e-05 ***
## SpeciesGt   -31.1157     5.0820  -6.123 8.08e-09 ***
## SpeciesGpp  -19.6857    17.7289  -1.110 0.268664
## SpeciesGpg  -29.7964     4.2827  -6.957 1.08e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.3193     2.0136   0.655    0.513
## SpeciesGp    29.7964     4.2827   6.957 1.08e-10 ***
## SpeciesGmsm  -0.9813     8.0038  -0.123    0.903
## SpeciesGmm   29.1057     6.4465   4.515 1.30e-05 ***
## SpeciesGmed   3.3507     8.8917   0.377    0.707
## SpeciesGff   13.1740    10.2012   1.291    0.199
## SpeciesGb     2.3047     8.0038   0.288    0.774
## SpeciesGa     1.8440     6.1148   0.302    0.763
## SpeciesGt    -1.3193     3.9489  -0.334    0.739
## SpeciesGpp   10.1107    17.4380   0.580    0.563
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11.430     17.321   0.660    0.510
## SpeciesGpg   -10.111     17.438  -0.580    0.563
## SpeciesGp     19.686     17.729   1.110    0.269
## SpeciesGmsm  -11.092     18.975  -0.585    0.560
## SpeciesGmm    18.995     18.372   1.034    0.303
## SpeciesGmed   -6.760     19.366  -0.349    0.728
## SpeciesGff     3.063     20.001   0.153    0.878
```

```
## SpeciesGb     -7.806     18.975  -0.411    0.681
## SpeciesGa     -8.267     18.258  -0.453    0.651
## SpeciesGt    -11.430     17.651  -0.648    0.518
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Sod) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -31.116   -1.319   -1.319    0.000   94.421
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 3.508e-14  3.397e+00   0.000    1.000
## SpeciesGpp  1.143e+01  1.765e+01   0.648    0.518
## SpeciesGpg  1.319e+00  3.949e+00   0.334    0.739
## SpeciesGp   3.112e+01  5.082e+00   6.123 8.08e-09 ***
## SpeciesGmsm 3.380e-01  8.458e+00   0.040    0.968
## SpeciesGmm  3.042e+01  7.003e+00   4.345 2.60e-05 ***
## SpeciesGmed 4.670e+00  9.303e+00   0.502    0.616
## SpeciesGff  1.449e+01  1.056e+01   1.372    0.172
## SpeciesGb   3.624e+00  8.458e+00   0.428    0.669
## SpeciesGa   3.163e+00  6.699e+00   0.472    0.637
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.0283)
##
##     Null deviance: 64686  on 155  degrees of freedom
## Residual deviance: 43804  on 146  degrees of freedom
## AIC: 1344.2
##
## Number of Fisher Scoring iterations: 2
```

Statistics for table 4

```
# species with significant differences between countries
```

```
data_ga <- subset(data, Species=="Ga")
data_ga
```

```
##     Country                 Localisation Species Sex Sample Prev_Sod Prev_
Tspp
## 27      SAF               False Bay Park      Ga  NI     27     0.00
2.60
## 41      SAF                 SAFint Lucia      Ga  NI     41     0.00     3
8.60
## 46      SAF                 Lower Mkhuze      Ga  NI     46     0.00     4
3.40
## 53      MOZ   Reserva Especial de Maputo      Ga  NI     53     0.00     1
0.00
## 59      SAF North eastern KwaZulu-Natal       Ga  NI     59     5.13
5.13
## 75      SWA      Mlawula Nature Reserve       Ga  NI     75     0.00
0.00
## 76      URT                 Uguja island      Ga  NI     76     6.67     1
0.00
## 132     URT                     Zanzibar      Ga  NI    132    16.67
0.00
## 141     URT                       Jozani      Ga  NI    141     0.00     2
5.00
##     Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_T
vTz
## 27     2.60    0.00    0.00     0.00      0.00         0       0.00
0
## 41    10.53    0.00   10.53    15.79      0.00         0       1.75
0
## 46     9.43    1.89    3.77    24.53      1.89         0       1.89
0
## 53     6.00    0.00    0.00     4.00      0.00         0       0.00
0
## 59     2.56    0.00    0.00     2.56      0.00         0       0.00
0
## 75     0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 76     0.00    6.67    3.33     0.00      0.00         0       0.00
0
## 132    0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 141    0.00    0.00   25.00     0.00      0.00         0       0.00
0
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 27           0          0           0
## 41           0          0           0
## 46           0          0           0
## 53           0          0           0
## 59           0          0           0
## 75           0          0           0
```

```
## 76           0          0          0
## 132          0          0          0
## 141          0          0          0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -19.832   16.168   20.968    0.000  -17.302    0.000   -1.667  -11.667
##     141
##  13.333
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   22.433      9.248   2.426   0.0597 .
## CountryURT   -10.766     14.126  -0.762   0.4804
## CountrySWA   -22.433     20.678  -1.085   0.3275
## CountryMOZ   -12.432     20.678  -0.601   0.5739
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 342.0791)
##
##     Null deviance: 2214.7  on 8  degrees of freedom
## Residual deviance: 1710.4  on 5  degrees of freedom
## AIC: 82.766
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   1.4742  3     0.6882
```

```
model2<-glm((Prev_Sod) ~ Country,data=data_ga, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
```

```
## -1.282  -1.282  -1.282   0.000   3.848   0.000  -1.110   8.890  -7.780
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.282      2.833   0.453    0.670
## CountryURT     6.498      4.328   1.501    0.194
## CountrySWA    -1.282      6.335  -0.202    0.848
## CountryMOZ    -1.282      6.335  -0.202    0.848
##
## (Dispersion parameter for gaussian family taken to be 32.10606)
##
##     Null deviance: 258.63  on 8  degrees of freedom
## Residual deviance: 160.53  on 5  degrees of freedom
## AIC: 61.472
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   3.0556  3     0.3831
```

```
#-----------------------------------------------
```

```
data_gb <- subset(data, Species=="Gb")
data_gb
```

```
##    Country                 Localisation Species Sex Sample Prev_Sod Prev_T
spp
## 7      SAF                       Phinda      Gb  NI      7     4.12      0
.00
## 50     SAF                     Hluhluwe      Gb  NI     50     0.00     32
.00
## 51     SAF North eastern KwaZulu-Natal       Gb  NI     51     0.00      4
.00
## 52     MOZ   Reserva Especial de Maputo      Gb  NI     52    14.00      6
.00
## 74     SAF                  SAFint Lucia     Gb  NI     74     0.00     43
.33
##    Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_Tv
Tz
## 7        0    0.00    0.00     0.00         0         0          0
0
## 50      12    2.00   14.00     4.00         0         0          0
0
## 51       2    0.00    0.00     2.00         0         0          0
0
## 52       0    2.00    0.00     2.00         0         0          0
```

```
0
## 74       0    3.33    3.33    36.67         0         0          0
0
##    Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 7           0          0           0
## 50          0          0           0
## 51          0          0           0
## 52          2          0           0
## 74          0          0           0

model1<-glm((Prev_Tspp) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##      7      50      51      52      74
## -19.83   12.17  -15.83    0.00   23.50
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    19.83      10.58   1.874    0.158
## CountryMOZ    -13.83      23.67  -0.584    0.600
##
## (Dispersion parameter for gaussian family taken to be 448.0589)
##
##     Null deviance: 1497.2  on 4  degrees of freedom
## Residual deviance: 1344.2  on 3  degrees of freedom
## AIC: 48.16
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country  0.34163  1     0.5589

model2<-glm((Prev_Sod) ~ Country,data=data_gb, family=gaussian())
summary(model2)

##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##     7     50     51     52     74
```

```
##  3.09  -1.03  -1.03   0.00  -1.03
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.030      1.030   1.000   0.3910
## CountryMOZ    12.970      2.303   5.631   0.0111 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 4.2436)
##
##     Null deviance: 147.308  on 4  degrees of freedom
## Residual deviance:  12.731  on 3  degrees of freedom
## AIC: 24.862
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   31.713  1  1.787e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-----------------------------------------------------------------------
data_gff <- subset(data, Species=="Gff")
data_gff
```

```
##    Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pre
v_Tv
## 16     UGA Buvuma island     Gff  NI     16     4.26     10.64    3.19
2.13
## 49     KEN      Ikapolok     Gff  NI     49    39.22     37.25    1.96
9.80
## 61     KEN        Obekai     Gff  NI     61     0.00      5.26    2.63
2.63
##    Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 16    1.06     3.19      0.00      0.00       1.06         0          0
## 49    0.00    19.61      3.92      1.96       0.00         0          0
## 61    0.00     0.00      0.00      0.00       0.00         0          0
##    Prev_TzTsg Prev_TcTvTz
## 16          0           0
## 49          0           0
## 61          0           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##   0.00   15.99  -15.99
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    10.64      22.62   0.470    0.720
## CountryKEN     10.61      27.70   0.383    0.767
##
## (Dispersion parameter for gaussian family taken to be 511.68)
##
##     Null deviance: 586.80  on 2  degrees of freedom
## Residual deviance: 511.68  on 1  degrees of freedom
## AIC: 29.931
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country  0.14681  1     0.7016
```

```
model2<-glm((Prev_Sod) ~ Country,data=data_gff, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##   0.00   19.61  -19.61
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     4.26      27.73   0.154    0.903
## CountryKEN     15.35      33.97   0.452    0.730
##
## (Dispersion parameter for gaussian family taken to be 769.1042)
##
##     Null deviance: 926.19  on 2  degrees of freedom
## Residual deviance: 769.10  on 1  degrees of freedom
## AIC: 31.153
```

```
##
## Number of Fisher Scoring iterations: 2

Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country  0.20424  1     0.6513

#------------------------------------------------------------------------
data_gmm <- subset(data, Species=="Gmm")
data_gmm

##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 21      KEN          Kari     Gmm  NI     21    63.53      2.35    2.35
0.00
## 22      URT MaSAFng-URTga     Gmm  NI     22    76.54     53.09   18.52
1.23
## 26      ZIM        Makuti     Gmm  NI     26    26.92     91.03   11.54
0.00
## 93      ZIM      Kemukura     Gmm  NI     93    22.22      5.56    0.00
5.56
## 100     ZIM     Rukomeshi     Gmm  NI    100    20.00      0.00    0.00
0.00
## 105     ZIM     Mukondore     Gmm  NI    105    23.08      7.69    7.69
0.00
## 115     ZIM     M. chiuyi     Gmm  NI    115    11.11      0.00    0.00
0.00
## 131     ZIM       Mushumb     Gmm  NI    131     0.00     33.33   16.67
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 21     0.00     0.00         0         0       0.00         0       0.00
## 22     1.23    18.52         0         0       6.17         0       6.17
## 26     2.56    69.23         0         0       7.69         0       0.00
## 93     0.00     0.00         0         0       0.00         0       0.00
## 100    0.00     0.00         0         0       0.00         0       0.00
## 105    0.00     0.00         0         0       0.00         0       0.00
## 115    0.00     0.00         0         0       0.00         0       0.00
## 131    0.00    16.67         0         0       0.00         0       0.00
##     Prev_TzTsg Prev_TcTvTz
## 21        0.00          0
## 22        1.23          0
## 26        0.00          0
## 93        0.00          0
## 100       0.00          0
## 105       0.00          0
## 115       0.00          0
## 131       0.00          0
```

```r
model1<-glm((Prev_Tspp) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##   0.00    0.00   68.09  -17.38  -22.93  -15.24  -22.93   10.39
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    22.93      14.53   1.579    0.175
## CountryURT     30.15      38.44   0.785    0.468
## CountryKEN    -20.59      38.44  -0.536    0.615
##
## (Dispersion parameter for gaussian family taken to be 1266.263)
##
##     Null deviance: 7652.9  on 7  degrees of freedom
## Residual deviance: 6331.3  on 5  degrees of freedom
## AIC: 84.094
##
## Number of Fisher Scoring iterations: 2
```

```r
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   1.0437  2     0.5934
```

```r
model2<-glm((Prev_Sod) ~ Country,data=data_gmm, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000    9.698    4.998    2.778    5.858   -6.112  -17.222
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17.222      4.062   4.240  0.00817 **
## CountryURT    59.318     10.747   5.519  0.00267 **
## CountryKEN    46.308     10.747   4.309  0.00765 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for gaussian family taken to be 99.0037)
##
##     Null deviance: 4763.52  on 7  degrees of freedom
## Residual deviance:  495.02  on 5  degrees of freedom
## AIC: 63.704
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   43.115  2  4.343e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model2<-glm((Prev_Sod) ~ Country,data=data_gmm, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000    9.698    4.998    2.778    5.858   -6.112  -17.222
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    76.54       9.95   7.692 0.000592 ***
## CountryZIM    -59.32      10.75  -5.519 0.002673 **
## CountryKEN    -13.01      14.07  -0.925 0.397621
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 99.0037)
##
##     Null deviance: 4763.52  on 7  degrees of freedom
## Residual deviance:  495.02  on 5  degrees of freedom
## AIC: 63.704
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
```

```
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   43.115  2  4.343e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model2<-glm((Prev_Sod) ~ Country,data=data_gmm, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000    9.698    4.998    2.778    5.858   -6.112  -17.222
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    76.54       9.95   7.692 0.000592 ***
## CountryZIM    -59.32      10.75  -5.519 0.002673 **
## CountryKEN    -13.01      14.07  -0.925 0.397621
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 99.0037)
##
##     Null deviance: 4763.52  on 7  degrees of freedom
## Residual deviance:  495.02  on 5  degrees of freedom
## AIC: 63.704
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   43.115  2  4.343e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model2<-glm((Prev_Sod) ~ Country,data=data_gmm, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gmm)
```

```
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000    9.698    4.998    2.778    5.858   -6.112  -17.222
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17.222      4.062   4.240  0.00817 **
## CountryURT    59.318     10.747   5.519  0.00267 **
## CountryKEN    46.308     10.747   4.309  0.00765 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 99.0037)
##
##     Null deviance: 4763.52  on 7  degrees of freedom
## Residual deviance:  495.02  on 5  degrees of freedom
## AIC: 63.704
##
## Number of Fisher Scoring iterations: 2

Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   43.115  2  4.343e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-----------------------------------------------------------------
#Gp

data_gp <- subset(data, Species=="Gp")
data_gp

##     Country          Localisation Species Sex Sample Prev_Sod Prev_Tspp Pr
ev_Tc
## 1       ETH Arba minch, nech SAFr      Gp  NI      1    20.48     20.04
6.10
## 5       KEN               Katotoi      Gp  NI      5    42.56     88.72
21.54
## 6       KEN                  Mwea      Gp  NI      6     3.08     19.49
7.18
## 8       ZAM                 Mfuwe      Gp  NI      8     2.05     45.21
1.37
## 9       URT              URTzania      Gp  NI      9    78.77     19.86
6.16
## 17      KEN                  Kari      Gp  NI     17    89.36      2.13
1.06
```

```
## 19      KEN                Koibos      Gp  NI     19     0.00     71.59
15.91
## 20      KEN        Meru nat. parc      Gp  NI     20    22.99     70.11
29.89
## 23      KEN        Ruma nat. parc      Gp  NI     23    26.25     17.50
10.00
## 31      URT         MaSAFng-URTga      Gp  NI     31    66.20     73.24
33.80
## 38      KEN                Emsos      Gp  NI     38     0.00     93.33
15.00
## 42      UGA                Budaka     Gp  NI     42    94.55      7.27
1.82
## 60      ZIM                Makuti     Gp  NI     60    15.79     86.84
7.89
## 79      UGA                Omugo      Gp  NI     79   100.00      0.00
0.00
## 81      ZIM               Mushumb     Gp  NI     81     3.85     19.23
3.85
## 85      UGA                 Lira      Gp  NI     85     0.00     16.00
8.00
## 90      KEN                Kiria      Gp  NI     90     0.00     80.00
55.00
## 101     KEN        Mwea nat. parc      Gp  NI    101     0.00     13.33
13.33
## 118     UGA                Moyo       Gp  NI    118    87.50     12.50
0.00
## 139     ZIM             Rukomeshi      Gp  NI    139     0.00      0.00
0.00
## 140     ZIM                Gokwe      Gp  NI    140     0.00      0.00
0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 1      0.65    1.09    10.46      0.00      0.00       0.65      0.00
## 5     15.38    0.51    26.15      6.67      1.54      15.90      1.03
## 6      0.51    1.03     7.69      1.03      0.51       0.51      0.00
## 8      0.68    0.68    34.93      0.00      0.00       7.53      0.00
## 9      2.74    0.68     8.22      0.00      0.00       0.68      0.00
## 17     0.00    1.06     0.00      0.00      0.00       0.00      0.00
## 19     9.09    0.00    28.41      0.00      0.00      15.91      0.00
## 20     4.60    0.00    25.29      0.00      0.00      10.34      0.00
## 23     2.50    2.50     0.00      1.25      0.00       0.00      0.00
## 31     0.00    0.00    14.08      0.00      1.41      21.13      1.41
## 38     8.33    0.00    58.33      1.67      0.00      10.00      0.00
## 42     0.00    0.00     5.45      0.00      0.00       0.00      0.00
## 60     0.00    0.00    73.68      0.00      0.00       5.26      0.00
## 79     0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 81     0.00    7.69     3.85      0.00      0.00       3.85      0.00
## 85     0.00    4.00     4.00      0.00      0.00       0.00      0.00
## 90     5.00    0.00    10.00     10.00      0.00       0.00      0.00
## 101    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 118    0.00    0.00    12.50      0.00      0.00       0.00      0.00
```

```
## 139    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 140    0.00    0.00     0.00      0.00      0.00       0.00      0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 1         0.44       0.65           0
## 5         0.00       0.00           0
## 6         0.00       1.03           0
## 8         0.00       0.00           0
## 9         0.68       0.68           0
## 17        0.00       0.00           0
## 19        0.00       2.27           0
## 20        0.00       0.00           0
## 23        1.25       0.00           0
## 31        0.00       1.41           0
## 38        0.00       0.00           0
## 42        0.00       0.00           0
## 60        0.00       0.00           0
## 79        0.00       0.00           0
## 81        0.00       0.00           0
## 85        0.00       0.00           0
## 90        0.00       0.00           0
## 101       0.00       0.00           0
## 118       0.00       0.00           0
## 139       0.00       0.00           0
## 140       0.00       0.00           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -48.56  -26.52    0.00   20.90   60.32
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   26.518     17.046   1.556    0.141
## CountryZAM    18.692     38.117   0.490    0.631
## CountryUGA   -17.575     24.107  -0.729    0.477
## CountryURT    20.032     29.525   0.678    0.508
## CountryKEN    24.171     20.487   1.180    0.256
## CountryETH    -6.478     38.117  -0.170    0.867
##
## (Dispersion parameter for gaussian family taken to be 1162.303)
##
##     Null deviance: 23227  on 20  degrees of freedom
## Residual deviance: 17435  on 15  degrees of freedom
## AIC: 214.75
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   4.9833  5     0.4179
```

```
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     4.91      15.39   0.319  0.75406
## CountryZAM     -2.86      34.41  -0.083  0.93485
## CountryUGA     65.60      21.76   3.015  0.00871 **
## CountryURT     67.58      26.65   2.535  0.02285 *
## CountryKEN     15.56      18.49   0.841  0.41332
## CountryETH     15.57      34.41   0.453  0.65737
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  20.471111  10.258392   1.996   0.0645 .
## CountryZIM  -15.561111  18.493580  -0.841   0.4133
## CountryZAM  -18.421111  32.439885  -0.568   0.5785
## CountryUGA   50.041389  18.493580   2.706   0.0163 *
## CountryURT   52.013889  24.058063   2.162   0.0472 *
## CountryETH    0.008889  32.439885   0.000   0.9998
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2
```

```r
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   72.485     21.761   3.331  0.00456 **
## CountryKEN   -52.014     24.058  -2.162  0.04719 *
## CountryZIM   -67.575     26.652  -2.535  0.02285 *
## CountryZAM   -70.435     37.692  -1.869  0.08132 .
## CountryUGA    -1.972     26.652  -0.074  0.94198
## CountryETH   -52.005     37.692  -1.380  0.18789
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2

Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)

##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   70.513     15.388   4.582 0.000359 ***
## CountryURT     1.972     26.652   0.074 0.941981
## CountryKEN   -50.041     18.494  -2.706 0.016266 *
## CountryZIM   -65.602     21.761  -3.015 0.008709 **
## CountryZAM   -68.463     34.408  -1.990 0.065170 .
## CountryETH   -50.032     34.408  -1.454 0.166520
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     2.05      30.77   0.067   0.9478
## CountryUGA     68.46      34.41   1.990   0.0652 .
## CountryURT     70.44      37.69   1.869   0.0813 .
## CountryKEN     18.42      32.44   0.568   0.5785
## CountryZIM      2.86      34.41   0.083   0.9349
## CountryETH     18.43      43.52   0.423   0.6780
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model2<-glm((Prev_Sod) ~ Country,data=data_gp, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -70.51  -17.39    0.00   10.88   68.89
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     4.91      15.39   0.319  0.75406
## CountryZAM     -2.86      34.41  -0.083  0.93485
## CountryUGA     65.60      21.76   3.015  0.00871 **
## CountryURT     67.58      26.65   2.535  0.02285 *
## CountryKEN     15.56      18.49   0.841  0.41332
## CountryETH     15.57      34.41   0.453  0.65737
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 947.1115)
##
##     Null deviance: 28563  on 20  degrees of freedom
## Residual deviance: 14207  on 15  degrees of freedom
## AIC: 210.45
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country   15.158  5    0.00971 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-----------------------------------------------------------------
#Gpg

data_gpg <- subset(data, Species=="Gpg")
data_gpg
```

```
##     Country    Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc
## 4       SEN            Pout     Gpg  NI      4     0.00      7.04    1.51
## 12      BKF         Folonzo     Gpg   F     12     0.00      7.55    0.94
## 13      BKF         Folonzo     Gpg   M     13     1.89     16.04    0.00
## 15      GUI       Kangoliya     Gpg   F     15    95.74      0.00    0.00
## 18      SEN           Kayar     Gpg  NI     18     0.00      1.14    0.00
## 25      BKF    Moussodougou     Gpg   F     25     0.00     44.87    0.00
## 30      BKF           Comoe     Gpg   F     30     0.00      2.82    1.41
## 32      BKF        Kartasso     Gpg   F     32     0.00      0.00    0.00
## 33      BKF        Kartasso     Gpg   M     33     0.00      0.00    0.00
## 34      SEN DiackSAFo Peulh     Gpg  NI     34     0.00      7.69    0.00
## 35      BKF    Moussodougou     Gpg   M     35     0.00     21.88    0.00
## 40      MLI            Bani     Gpg   F     40     0.00      1.72    0.00
## 45      BKF          Kampty     Gpg   F     45     0.00     90.57    1.89
## 47      BKF           Comoe     Gpg   M     47     0.00      1.92    1.92
## 48      MLI             SEN     Gpg   M     48     0.00      7.69    1.92
## 54      BKF            Bama     Gpg   F     54     0.00      0.00    0.00
## 56      SEN     Tambacounda     Gpg   F     56     0.00     41.46    0.00
## 57      SEN     Tambacounda     Gpg   M     57     0.00     71.79    0.00
## 58      SEN      SebikoURTe     Gpg  NI     58     0.00      5.13    0.00
## 62      MLI             SEN     Gpg   F     62     0.00      0.00    0.00
## 64      BKF            Bama     Gpg   M     64     0.00      0.00    0.00
## 65      MLI           Banco     Gpg   F     65     0.00     20.59    0.00
## 66      BKF        Dedougou     Gpg   F     66     0.00     52.94    0.00
## 67      MLI         Sikasso     Gpg   F     67     0.00      6.06    0.00
## 71      GUI       Kangoliya     Gpg   M     71     0.00      0.00    0.00
## 77      GUI            Mini     Gpg   F     77     0.00      3.45    0.00
## 78      SEN            Hann     Gpg  NI     78     0.00      0.00    0.00
## 80      BKF          Kampty     Gpg   M     80     0.00     80.77    0.00
## 82      GUI          Kifala     Gpg   M     82     0.00      0.00    0.00
## 83      MLI         Sikasso     Gpg   M     83     0.00      0.00    0.00
## 84      MLI              SS     Gpg   F     84     0.00      4.00    0.00
## 86      BKF      Kenedougou     Gpg   F     86     0.00      0.00    0.00
## 87      MLI              SS     Gpg   M     87     0.00      0.00    0.00
## 88      BKF        Dedougou     Gpg   M     88     0.00     69.57    4.35
## 89      GUI          Bafing     Gpg   F     89     0.00      5.00    0.00
## 91      BKF          Kampty     Gpg  NI     91     0.00     84.21    0.00
## 92      GUI        Tinkisso     Gpg   M     92     0.00      5.56    0.00
## 94      BKF      Kenedougou     Gpg   M     94     0.00      0.00    0.00
## 96      GUI       Dekonkore     Gpg   F     96     0.00      6.25    0.00
## 97      GUI            Mini     Gpg   M     97     0.00      0.00    0.00
## 98      SEN   Fleuve Gambie     Gpg   M     98     0.00     43.75    0.00
## 102     GUI          Bafing     Gpg   M    102     0.00      0.00    0.00
## 103     GUI        Tinkisso     Gpg   F    103     0.00      7.69    0.00
```

```
## 104     BKF Bouroum bouroum     Gpg   F    104     0.00     92.31    0.00
## 106     GUI        Karifale     Gpg   M    106     0.00      8.33    0.00
## 107     GUI        Lemonako     Gpg   F    107     0.00      0.00    0.00
## 108     BKF      KouriGUIon     Gpg   F    108     0.00     50.00    0.00
## 109     MLI            Bani     Gpg   M    109     0.00      0.00    0.00
## 110     MLI            Sybi     Gpg   F    110     0.00      0.00    0.00
## 111     MLI            Sybi     Gpg   M    111     0.00      0.00    0.00
## 113     SEN       Fleueve G     Gpg   F    113     0.00     11.11    0.00
## 114     BKF      KouriGUIon     Gpg  NI    114     0.00     22.22    0.00
## 117     GUI        Lemonako     Gpg   M    117     0.00      0.00    0.00
## 119     SEN        Diaguiri     Gpg   F    119     0.00      0.00    0.00
## 120     MLI           Banco     Gpg   M    120     0.00     28.57    0.00
## 121     MLI          Baoule     Gpg   F    121     0.00     42.86    0.00
## 122     MLI          Baoule     Gpg   M    122     0.00     42.86    0.00
## 123     MLI        Bougouni     Gpg   M    123     0.00      0.00    0.00
## 124     BKF        Lorepeni     Gpg   F    124     0.00     71.43    0.00
## 127     SEN      MousSAFlla     Gpg   M    127     0.00      0.00    0.00
## 128     MLI       Baguineda     Gpg   F    128     0.00     16.67    0.00
## 129     MLI        Bougouni     Gpg   F    129     0.00      0.00    0.00
## 130     MLI            Kita     Gpg   M    130     0.00     16.67    0.00
## 136     GUI          Kifala     Gpg   F    136     0.00      0.00    0.00
## 137     BKF Bouroum bouroum     Gpg   M    137     0.00     80.00    0.00
## 138     SEN   Fleuve Gambie     Gpg   F    138     0.00     25.00    0.00
## 143     SEN         Niokolo     Gpg   M    143     0.00      0.00    0.00
## 145     BKF        Lorepeni     Gpg   M    145     0.00    100.00    0.00
## 146     BKF      KouriGUIon     Gpg   M    146     0.00     66.67    0.00
## 147     BKF        Ouarkoye     Gpg   M    147     0.00    100.00    0.00
## 150     SEN        Diaguiri     Gpg   M    150     0.00     50.00    0.00
## 151     BKF        Ouarkoye     Gpg   F    151     0.00    100.00   50.00
## 156     GUI        Karifale     Gpg   F    156     0.00      0.00    0.00
## 157     SEN            Mako     Gpg   M    157     0.00    100.00    0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 4      2.01    0.50     3.02         0      0.00       0.00      0.00
## 12     2.83    1.89     0.00         0      0.00       0.00      1.89
## 13     5.66    5.66     0.00         0      1.89       0.00      2.83
## 15     0.00    0.00     0.00         0      0.00       0.00      0.00
## 18     0.00    0.00     1.14         0      0.00       0.00      0.00
## 25    20.51   12.82     0.00         0      0.00       0.00     11.54
## 30     1.41    0.00     0.00         0      0.00       0.00      0.00
## 32     0.00    0.00     0.00         0      0.00       0.00      0.00
## 33     0.00    0.00     0.00         0      0.00       0.00      0.00
## 34     1.54    1.54     4.62         0      0.00       0.00      0.00
## 35     6.25   15.63     0.00         0      0.00       0.00      0.00
## 40     1.72    0.00     0.00         0      0.00       0.00      0.00
## 45    62.26    1.89    11.32         0      0.00       0.00      0.00
## 47     0.00    0.00     0.00         0      0.00       0.00      0.00
## 48     1.92    3.85     0.00         0      0.00       0.00      0.00
## 54     0.00    0.00     0.00         0      0.00       0.00      0.00
## 56    26.83    7.32     0.00         0      0.00       0.00      7.32
## 57    53.85    2.56     0.00         0      0.00       0.00     15.38
```

```
## 58     5.13    0.00     0.00         0      0.00       0.00      0.00
## 62     0.00    0.00     0.00         0      0.00       0.00      0.00
## 64     0.00    0.00     0.00         0      0.00       0.00      0.00
## 65    20.59    0.00     0.00         0      0.00       0.00      0.00
## 66    26.47    0.00    23.53         0      0.00       0.00      0.00
## 67     0.00    6.06     0.00         0      0.00       0.00      0.00
## 71     0.00    0.00     0.00         0      0.00       0.00      0.00
## 77     3.45    0.00     0.00         0      0.00       0.00      0.00
## 78     0.00    0.00     0.00         0      0.00       0.00      0.00
## 80    65.38    0.00     7.69         0      0.00       0.00      0.00
## 82     0.00    0.00     0.00         0      0.00       0.00      0.00
## 83     0.00    0.00     0.00         0      0.00       0.00      0.00
## 84     4.00    0.00     0.00         0      0.00       0.00      0.00
## 86     0.00    0.00     0.00         0      0.00       0.00      0.00
## 87     0.00    0.00     0.00         0      0.00       0.00      0.00
## 88    30.43   13.04     4.35         0      0.00       4.35      0.00
## 89     5.00    0.00     0.00         0      0.00       0.00      0.00
## 91    26.32    5.26    21.05         0      0.00       0.00      0.00
## 92     5.56    0.00     0.00         0      0.00       0.00      0.00
## 94     0.00    0.00     0.00         0      0.00       0.00      0.00
## 96     6.25    0.00     0.00         0      0.00       0.00      0.00
## 97     0.00    0.00     0.00         0      0.00       0.00      0.00
## 98    43.75    0.00     0.00         0      0.00       0.00      0.00
## 102    0.00    0.00     0.00         0      0.00       0.00      0.00
## 103    7.69    0.00     0.00         0      0.00       0.00      0.00
## 104   53.85    0.00    23.08         0      0.00       0.00      0.00
## 106    8.33    0.00     0.00         0      0.00       0.00      0.00
## 107    8.33    0.00     0.00         0      0.00       0.00      0.00
## 108    0.00    0.00    33.33         0      0.00       0.00      0.00
## 109    0.00    0.00     0.00         0      0.00       0.00      0.00
## 110    0.00    0.00     0.00         0      0.00       0.00      0.00
## 111    0.00    0.00     0.00         0      0.00       0.00      0.00
## 113   11.11    0.00     0.00         0      0.00       0.00      0.00
## 114    0.00    0.00    11.11         0      0.00       0.00      0.00
## 117    0.00    0.00     0.00         0      0.00       0.00      0.00
## 119    0.00    0.00     0.00         0      0.00       0.00      0.00
## 120   28.57    0.00     0.00         0      0.00       0.00      0.00
## 121   42.86    0.00     0.00         0      0.00       0.00      0.00
## 122   42.86    0.00     0.00         0      0.00       0.00      0.00
## 123    0.00    0.00     0.00         0      0.00       0.00      0.00
## 124   14.29    0.00    28.57         0      0.00       0.00      0.00
## 127    0.00    0.00     0.00         0      0.00       0.00      0.00
## 128   16.67    0.00     0.00         0      0.00       0.00      0.00
## 129    0.00    0.00     0.00         0      0.00       0.00      0.00
## 130   16.67    0.00     0.00         0      0.00       0.00      0.00
## 136    0.00    0.00     0.00         0      0.00       0.00      0.00
## 137   40.00    0.00    20.00         0      0.00       0.00      0.00
## 138   25.00    0.00     0.00         0      0.00       0.00      0.00
## 143   66.67    0.00     0.00         0      0.00       0.00      0.00
## 145    0.00    0.00     0.00         0      0.00       0.00      0.00
```

```
## 146   33.33    0.00     0.00         0      0.00       0.00      0.00
## 147   33.33    0.00     0.00         0      0.00       0.00      0.00
## 150    0.00   50.00     0.00         0      0.00       0.00      0.00
## 151   50.00    0.00     0.00         0      0.00       0.00      0.00
## 156    0.00    0.00     0.00         0      0.00       0.00      0.00
## 157  100.00    0.00     0.00         0      0.00       0.00      0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 4         0.00       0.00           0
## 12        0.00       0.00           0
## 13        0.00       0.00           0
## 15        0.00       0.00           0
## 18        0.00       0.00           0
## 25        0.00       0.00           0
## 30        0.00       0.00           0
## 32        0.00       0.00           0
## 33        0.00       0.00           0
## 34        0.00       0.00           0
## 35        0.00       0.00           0
## 40        0.00       0.00           0
## 45        9.43       3.77           0
## 47        0.00       0.00           0
## 48        0.00       0.00           0
## 54        0.00       0.00           0
## 56        0.00       0.00           0
## 57        0.00       0.00           0
## 58        0.00       0.00           0
## 62        0.00       0.00           0
## 64        0.00       0.00           0
## 65        0.00       0.00           0
## 66        2.94       0.00           0
## 67        0.00       0.00           0
## 71        0.00       0.00           0
## 77        0.00       0.00           0
## 78        0.00       0.00           0
## 80        7.69       0.00           0
## 82        0.00       0.00           0
## 83        0.00       0.00           0
## 84        0.00       0.00           0
## 86        0.00       0.00           0
## 87        0.00       0.00           0
## 88        4.35       8.70           0
## 89        0.00       0.00           0
## 91       31.58       0.00           0
## 92        0.00       0.00           0
## 94        0.00       0.00           0
## 96        0.00       0.00           0
## 97        0.00       0.00           0
## 98        0.00       0.00           0
## 102       0.00       0.00           0
## 103       0.00       0.00           0
```

```
## 104      15.38       0.00           0
## 106       0.00       0.00           0
## 107       0.00       0.00           0
## 108      16.67       0.00           0
## 109       0.00       0.00           0
## 110       0.00       0.00           0
## 111       0.00       0.00           0
## 113       0.00       0.00           0
## 114      11.11       0.00           0
## 117       0.00       0.00           0
## 119       0.00       0.00           0
## 120       0.00       0.00           0
## 121       0.00       0.00           0
## 122       0.00       0.00           0
## 123       0.00       0.00           0
## 124      28.57       0.00           0
## 127       0.00       0.00           0
## 128       0.00       0.00           0
## 129       0.00       0.00           0
## 130       0.00       0.00           0
## 136       0.00       0.00           0
## 137      20.00       0.00           0
## 138       0.00       0.00           0
## 143       0.00       0.00           0
## 145      66.67      33.33           0
## 146      33.33       0.00           0
## 147      33.33      33.33           0
## 150       0.00       0.00           0
## 151       0.00       0.00           0
## 156       0.00       0.00           0
## 157       0.00       0.00           0
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -44.453  -17.072   -2.419   15.430   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24.274      7.268   3.340  0.00135 **
## CountryMLI   -13.847      9.842  -1.407  0.16386
## CountryGUI   -21.855     10.279  -2.126  0.03702 *
## CountryBKF    20.179      9.127   2.211  0.03032 *
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 792.4573)
##
##     Null deviance: 76638  on 73  degrees of freedom
## Residual deviance: 55472  on 70  degrees of freedom
## AIC: 709.85
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   26.709  3  6.776e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
model2<-glm((Prev_Sod) ~ Country,data=data_gpg, family=gaussian())
summary(model2)
```

```
##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.383  -0.073  -0.073   0.000  89.357
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.424e-14  2.855e+00   0.000    1.000
## CountryMLI  -1.781e-14  3.866e+00   0.000    1.000
## CountryGUI   6.383e+00  4.038e+00   1.581    0.118
## CountryBKF   7.269e-02  3.585e+00   0.020    0.984
##
## (Dispersion parameter for gaussian family taken to be 122.2644)
##
##     Null deviance: 9040.9  on 73  degrees of freedom
## Residual deviance: 8558.5  on 70  degrees of freedom
## AIC: 571.55
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
```

```
##         LR Chisq Df Pr(>Chisq)
## Country   3.9456  3     0.2674

data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_Tspp) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -44.453  -17.072   -2.419   15.430   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.419      7.268   0.333    0.740
## CountrySEN    21.855     10.279   2.126    0.037 *
## CountryMLI     8.009      9.842   0.814    0.419
## CountryBKF    42.034      9.127   4.605 1.79e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 792.4573)
##
##     Null deviance: 76638  on 73  degrees of freedom
## Residual deviance: 55472  on 70  degrees of freedom
## AIC: 709.85
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   26.709  3  6.776e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_Tspp) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
```

```
##     Min       1Q   Median       3Q      Max
## -44.453  -17.072   -2.419   15.430   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.427      6.635   1.572 0.120574
## CountryGUI    -8.009      9.842  -0.814 0.418547
## CountrySEN    13.847      9.842   1.407 0.163860
## CountryBKF    34.025      8.632   3.942 0.000189 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 792.4573)
##
##     Null deviance: 76638  on 73  degrees of freedom
## Residual deviance: 55472  on 70  degrees of freedom
## AIC: 709.85
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   26.709  3  6.776e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_Tspp) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -44.453  -17.072   -2.419   15.430   75.726
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24.274      7.268   3.340  0.00135 **
## CountryMLI   -13.847      9.842  -1.407  0.16386
## CountryGUI   -21.855     10.279  -2.126  0.03702 *
## CountryBKF    20.179      9.127   2.211  0.03032 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 792.4573)
##
##     Null deviance: 76638  on 73  degrees of freedom
## Residual deviance: 55472  on 70  degrees of freedom
## AIC: 709.85
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   26.709  3  6.776e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-------------------------------------------------------------
#Gt

data_gt <- subset(data, Species=="Gt")
data_gt
```

```
##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 2       BKF         Comoe      Gt   F      2        0     16.54    1.10
13.24
## 3       BKF         Comoe      Gt   M      3        0     15.00    3.64
11.36
## 11      BKF       Folonzo      Gt   F     11        0     18.87    1.89
12.26
## 14      BKF       Folonzo      Gt   M     14        0     32.63    2.11
27.37
## 24      GHA      Walewale      Gt   M     24        0     53.85    3.85
12.82
## 43      GHA      Walewale      Gt   F     43        0     66.04    1.89
9.43
## 44      BKF          Arly      Gt   F     44        0      1.89    0.00
0.00
## 55      BKF          Arly      Gt   M     55        0      0.00    0.00
0.00
## 69      GHA       MorURTi      Gt   M     69        0     50.00    0.00
15.63
## 70      BKF       Sissili      Gt   M     70        0     25.00   12.50
12.50
## 95      GHA    Bougouhiya      Gt   F     95        0     18.75    0.00
6.25
## 99      BKF       Sissili      Gt   F     99        0     13.33    6.67
6.67
## 112     GHA       MorURTi      Gt   F    112        0     66.67    0.00
```

```
0.00
## 116     GHA      Fumbissi      Gt   F    116        0    100.00    0.00
0.00
## 125     GHA      Fumbissi      Gt   M    125        0    100.00    0.00
66.67
## 126     GHA        Grogro      Gt   M    126        0    100.00    0.00
0.00
## 133     GHA        Grogro      Gt   F    133        0    100.00    0.00
80.00
## 134     GHA       Kumpole      Gt   F    134        0    100.00    0.00
40.00
## 135     GHA Sissili Bidge      Gt   F    135        0    100.00    0.00
20.00
## 142     GHA    Bougouhiya      Gt   M    142        0      0.00    0.00
0.00
## 148     GHA       Kumpole      Gt   M    148        0    100.00    0.00
50.00
## 149     GHA        Psikp_      Gt   M    149        0    100.00    0.00
0.00
## 152     GHA      Kandiaga      Gt   M    152        0    100.00    0.00
0.00
## 153     GHA Sissili Bidge      Gt   M    153        0    100.00    0.00
0.00
## 154     GHA        Nabogo      Gt   F    154        0      0.00    0.00
0.00
## 155     GHA Volta Blanche      Gt   F    155        0      0.00    0.00
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 2      0.37        0      0.74      1.10          0      0.00          0
## 3      0.00        0      0.00      0.00          0      0.00          0
## 11     1.89        0      1.89      0.94          0      0.00          0
## 14     1.05        0      0.00      1.05          0      1.05          0
## 24     8.97        0      0.00     10.26          0     14.10          0
## 43    24.53        0      0.00     16.98          0      7.55          0
## 44     1.89        0      0.00      0.00          0      0.00          0
## 55     0.00        0      0.00      0.00          0      0.00          0
## 69    15.63        0      0.00     18.75          0      0.00          0
## 70     0.00        0      0.00      0.00          0      0.00          0
## 95     0.00        0      0.00      0.00          0     12.50          0
## 99     0.00        0      0.00      0.00          0      0.00          0
## 112   33.33        0      0.00     22.22          0     11.11          0
## 116   37.50        0      0.00      0.00          0     62.50          0
## 125   33.33        0      0.00      0.00          0      0.00          0
## 126   16.67        0      0.00      0.00          0     83.33          0
## 133   20.00        0      0.00      0.00          0      0.00          0
## 134   60.00        0      0.00      0.00          0      0.00          0
## 135   80.00        0      0.00      0.00          0      0.00          0
## 142    0.00        0      0.00      0.00          0      0.00          0
## 148   50.00        0      0.00      0.00          0      0.00          0
## 149   50.00        0      0.00      0.00          0     50.00          0
```

```
## 152  100.00        0      0.00      0.00          0      0.00          0
## 153  100.00        0      0.00      0.00          0      0.00          0
## 154    0.00        0      0.00      0.00          0      0.00          0
## 155    0.00        0      0.00      0.00          0      0.00          0
##     Prev_TzTsg Prev_TcTvTz
## 2            0        0.00
## 3            0        0.00
## 11           0        0.00
## 14           0        0.00
## 24           0        1.28
## 43           0        5.66
## 44           0        0.00
## 55           0        0.00
## 69           0        0.00
## 70           0        0.00
## 95           0        0.00
## 99           0        0.00
## 112          0        0.00
## 116          0        0.00
## 125          0        0.00
## 126          0        0.00
## 133          0        0.00
## 134          0        0.00
## 135          0        0.00
## 142          0        0.00
## 148          0        0.00
## 149          0        0.00
## 152          0        0.00
## 153          0        0.00
## 154          0        0.00
## 155          0        0.00
```

```
model1<-glm((Prev_Tspp) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tspp) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -69.739  -14.935    2.297   30.261   30.261
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   69.739      8.028   8.687 7.12e-09 ***
## CountryBKF   -54.332     14.472  -3.754 0.000978 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 1159.976)
##
##     Null deviance: 44189  on 25  degrees of freedom
## Residual deviance: 27839  on 24  degrees of freedom
## AIC: 261.16
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tspp)
##         LR Chisq Df Pr(>Chisq)
## Country   14.095  1  0.0001738 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

model2<-glm((Prev_Sod) ~ Country,data=data_gt, family=gaussian())
summary(model2)

##
## Call:
## glm(formula = (Prev_Sod) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
##      0       0       0       0       0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryBKF         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 25  degrees of freedom
## Residual deviance: 0  on 24  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1

Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Sod)
##         LR Chisq Df Pr(>Chisq)
## Country          1
```

Selecting the GLM model for trypanosome species and mixed infection

```
#TC selection model
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_Tc) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Tc) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Tc) ~ Country*Species+Localisation,data=data, family=gaussi
an())
model6<-glm((Prev_Tc) ~ Country+Species+Localisation,data=data, family=gaussi
an())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model2  11 1077.78       0.00   0.43   0.43 -526.97
## model4  23 1078.08       0.30   0.37   0.81 -511.86
## model3  27 1079.90       2.12   0.15   0.96 -507.04
## model1  16 1082.45       4.67   0.04   1.00 -523.27
## model6 100 1416.98     339.20   0.00   1.00 -424.85
## model5 103 1455.28     377.50   0.00   1.00 -418.64

summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.764      2.304   2.068  0.04048 *
## CountryZAM    -3.394      7.641  -0.444  0.65759
## CountrySAF     0.126      3.456   0.036  0.97097
## CountryUGA    -2.162      3.990  -0.542  0.58881
## CountryURT     4.983      3.762   1.324  0.18751
## CountrySWA    -4.764      7.641  -0.623  0.53398
## CountrySEN    -4.663      2.974  -1.568  0.11915
## CountryZAI    -4.764      7.641  -0.623  0.53398
## CountryMOZ    -1.764      5.643  -0.313  0.75506
## CountryMLI    -4.657      2.873  -1.621  0.10729
```

```
## CountryKEN     9.890      3.119   3.170  0.00187 **
## CountryETH     1.336      7.641   0.175  0.86145
## CountryGUI    -4.764      2.974  -1.602  0.11145
## CountryGHA    -4.445      2.873  -1.547  0.12411
## CountryBKF    -1.360      2.558  -0.532  0.59568
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tc)
##         LR Chisq Df Pr(>Chisq)
## Country   47.741 14  1.451e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model2 is the best AICc=1084.04
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tc)
##         LR Chisq Df Pr(>Chisq)
## Species   40.364  9  6.527e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#Tv selection model
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_Tv) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Tv) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Tv) ~ Country*Species+Localisation,data=data, family=gaussi
an())
model6<-glm((Prev_Tv) ~ Country+Species+Localisation,data=data, family=gaussi
an())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")
```

```
aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model2  11 1352.64       0.00   0.51   0.51 -664.40
## model1  16 1352.73       0.09   0.49   1.00 -658.41
## model4  23 1368.94      16.30   0.00   1.00 -657.29
## model3  27 1380.29      27.66   0.00   1.00 -657.24
## model6 100 1652.45     299.82   0.00   1.00 -542.59
## model5 103 1703.17     350.54   0.00   1.00 -542.59

summary(model1)

##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5560     5.4787   0.101  0.91931
## CountryZAM    0.1240    18.1708   0.007  0.99456
## CountrySAF    0.3465     8.2180   0.042  0.96643
## CountryUGA   -0.1300     9.4894  -0.014  0.98909
## CountryURT    1.2173     8.9467   0.136  0.89196
## CountrySWA   -0.5560    18.1708  -0.031  0.97563
## CountrySEN   21.8367     7.0730   3.087  0.00243 **
## CountryZAI    2.3040    18.1708   0.127  0.89928
## CountryMOZ    0.4440    13.4200   0.033  0.97365
## CountryMLI    9.2140     6.8331   1.348  0.17968
## CountryKEN    4.2640     7.4182   0.575  0.56634
## CountryETH    0.0940    18.1708   0.005  0.99588
## CountryGUI    2.4180     7.0730   0.342  0.73296
## CountryGHA   16.1551     6.8331   2.364  0.01943 *
## CountryBKF   14.6205     6.0825   2.404  0.01753 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
```

```
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tv)
##         LR Chisq Df Pr(>Chisq)
## Country   27.404 14    0.01705 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model1 is the best AICc= 1360.14
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tv)
##         LR Chisq Df Pr(>Chisq)
## Species   15.475  9    0.07868 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#Tz selection model
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_Tz) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Tz) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Tz) ~ Country*Species+Localisation,data=data, family=gaussi
an())
model6<-glm((Prev_Tz) ~ Country+Species+Localisation,data=data, family=gaussi
an())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model1  16 1260.42       0.00      1      1 -612.25
## model4  23 1272.68      12.25      0      1 -609.16
## model2  11 1283.49      23.07      0      1 -629.83
## model3  27 1284.10      23.68      0      1 -609.14
## model6 100 1444.79     184.37      0      1 -438.76
## model5 103 1495.05     234.63      0      1 -438.53
```

```
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0250     4.0756   0.251    0.802
## CountryZAM   -0.3450    13.5173  -0.026    0.980
## CountrySAF    2.9287     6.1134   0.479    0.633
## CountryUGA   -0.0130     7.0591  -0.002    0.999
## CountryURT    4.0150     6.6554   0.603    0.547
## CountrySWA   -1.0250    13.5173  -0.076    0.940
## CountrySEN    3.1030     5.2616   0.590    0.556
## CountryZAI   -1.0250    13.5173  -0.076    0.940
## CountryMOZ   -1.0250     9.9832  -0.103    0.918
## CountryMLI   -0.4744     5.0832  -0.093    0.926
## CountryKEN   -0.6000     5.5184  -0.109    0.914
## CountryETH    0.0650    13.5173   0.005    0.996
## CountryGUI   -1.0250     5.2616  -0.195    0.846
## CountryGHA   33.9728     5.0832   6.683 5.02e-10 ***
## CountryBKF    1.9827     4.5248   0.438    0.662
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tz)
##         LR Chisq Df Pr(>Chisq)
## Country   106.11 14  3.167e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#model1 is the best AICc= 1267.24
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tz)
##         LR Chisq Df Pr(>Chisq)
## Species   58.253  9  2.906e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#Tsg selection model
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_Tsg) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_Tsg) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_Tsg) ~ Country*Species+Localisation,data=data, family=gauss
ian())
model6<-glm((Prev_Tsg) ~ Country+Species+Localisation,data=data, family=gauss
ian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model2  11 1203.33       0.00   0.78   0.78 -589.75
## model1  16 1205.83       2.50   0.22   1.00 -584.96
## model4  23 1214.77      11.45   0.00   1.00 -580.21
## model3  27 1223.72      20.40   0.00   1.00 -578.96
## model6 100 1364.93     161.60   0.00   1.00 -398.83
## model5 103 1409.96     206.63   0.00   1.00 -395.98

summary(model1)

##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   16.343      3.421   4.777 4.42e-06 ***
## CountryZAM    18.587     11.347   1.638 0.103654
## CountrySAF    -5.649      5.132  -1.101 0.272872
```

```
## CountryUGA   -11.315      5.926  -1.909 0.058245 .
## CountryURT    -9.540      5.587  -1.707 0.089940 .
## CountrySWA   -16.343     11.347  -1.440 0.152018
## CountrySEN   -15.758      4.417  -3.568 0.000493 ***
## CountryZAI   -16.343     11.347  -1.440 0.152018
## CountryMOZ   -13.343      8.381  -1.592 0.113597
## CountryMLI   -16.343      4.267  -3.830 0.000192 ***
## CountryKEN    -1.720      4.633  -0.371 0.711037
## CountryETH    -5.883     11.347  -0.518 0.604963
## CountryGUI   -16.343      4.417  -3.700 0.000308 ***
## CountryGHA   -16.343      4.267  -3.830 0.000192 ***
## CountryBKF   -12.063      3.798  -3.176 0.001835 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tsg)
##         LR Chisq Df Pr(>Chisq)
## Country   44.737 14    4.5e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model2 is the best AICc=1210.49
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_Tsg)
##         LR Chisq Df Pr(>Chisq)
## Species   34.871  9   6.28e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#TcTv selection model
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TcTv) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TcTv) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TcTv) ~ Country*Species+Localisation,data=data, family=gaus
```

```
sian())
model6<-glm((Prev_TcTv) ~ Country+Species+Localisation,data=data, family=gaus
sian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K   AICc Delta_AICc AICcWt Cum.Wt      LL
## model1  16 487.19       0.00   0.71   0.71 -225.64
## model2  11 489.12       1.93   0.27   0.98 -232.64
## model4  23 494.45       7.26   0.02   1.00 -220.04
## model3  27 502.03      14.84   0.00   1.00 -218.11
## model6 100 763.59     276.41   0.00   1.00  -98.16
## model5 103 814.32     327.13   0.00   1.00  -98.16

summary(model1)

##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.955e-15  3.419e-01   0.000    1.000
## CountryZAM  -1.108e-14  1.134e+00   0.000    1.000
## CountrySAF   2.362e-01  5.128e-01   0.461    0.646
## CountryUGA  -5.150e-15  5.922e-01   0.000    1.000
## CountryURT  -2.163e-14  5.583e-01   0.000    1.000
## CountrySWA  -1.589e-14  1.134e+00   0.000    1.000
## CountrySEN  -5.951e-15  4.414e-01   0.000    1.000
## CountryZAI  -1.082e-14  1.134e+00   0.000    1.000
## CountryMOZ  -1.477e-14  8.374e-01   0.000    1.000
## CountryMLI  -5.405e-15  4.264e-01   0.000    1.000
## CountryKEN   2.045e+00  4.629e-01   4.418 1.97e-05 ***
## CountryETH  -6.762e-15  1.134e+00   0.000    1.000
## CountryGUI  -5.751e-15  4.414e-01   0.000    1.000
## CountryGHA  -5.573e-15  4.264e-01   0.000    1.000
## CountryBKF   2.163e-01  3.796e-01   0.570    0.570
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTv)
##         LR Chisq Df Pr(>Chisq)
## Country   38.037 14   0.000513 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#model1 is the best AICc= 489.05
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTv)
##         LR Chisq Df Pr(>Chisq)
## Species    23.46  9   0.005242 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-------------------------------------------------------------------------
#TcTz selection model
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TcTz) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TcTz) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TcTz) ~ Country*Species+Localisation,data=data, family=gaus
sian())
model6<-glm((Prev_TcTz) ~ Country+Species+Localisation,data=data, family=gaus
sian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)
```

```
##
## Model selection based on AICc:
##
##          K   AICc Delta_AICc AICcWt Cum.Wt      LL
```

```
## model2  11 766.95       0.00   0.88   0.88 -371.56
## model1  16 770.90       3.96   0.12   1.00 -367.49
## model4  23 787.67      20.72   0.00   1.00 -366.65
## model3  27 799.03      32.08   0.00   1.00 -366.61
## model6 100 799.64      32.70   0.00   1.00 -116.19
## model5 103 847.28      80.33   0.00   1.00 -114.64
```

```
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.194e-15  8.488e-01   0.000 1.000000
## CountryZAM  -5.394e-15  2.815e+00   0.000 1.000000
## CountrySAF  -3.226e-16  1.273e+00   0.000 1.000000
## CountryUGA  -2.595e-15  1.470e+00   0.000 1.000000
## CountryURT   2.350e-01  1.386e+00   0.170 0.865610
## CountrySWA  -5.910e-15  2.815e+00   0.000 1.000000
## CountrySEN  -3.719e-15  1.096e+00   0.000 1.000000
## CountryZAI   1.144e-16  2.815e+00   0.000 1.000000
## CountryMOZ   4.144e-15  2.079e+00   0.000 1.000000
## CountryMLI  -5.334e-16  1.059e+00   0.000 1.000000
## CountryKEN   3.342e-01  1.149e+00   0.291 0.771656
## CountryETH  -2.672e-15  2.815e+00   0.000 1.000000
## CountryGUI  -3.155e-15  1.096e+00   0.000 1.000000
## CountryGHA   3.789e+00  1.059e+00   3.580 0.000472 ***
## CountryBKF   3.586e-01  9.423e-01   0.381 0.704107
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTz)
##         LR Chisq Df Pr(>Chisq)
```

```
## Country   29.822 14   0.008075 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model2 is the best AICc= 770.69
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTz)
##         LR Chisq Df Pr(>Chisq)
## Species   21.903  9   0.009192 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#TcTsg selection model
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TcTsg) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TcTsg) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TcTsg) ~ Country*Species+Localisation,data=data, family=gau
ssian())
model6<-glm((Prev_TcTsg) ~ Country+Species+Localisation,data=data, family=gau
ssian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K   AICc Delta_AICc AICcWt Cum.Wt      LL
## model4  23 741.85       0.00   0.46   0.46 -343.74
## model5 103 742.24       0.39   0.38   0.85  -62.12
## model3  27 744.18       2.34   0.14   0.99 -339.19
## model2  11 749.43       7.59   0.01   1.00 -362.80
## model1  16 757.86      16.01   0.00   1.00 -360.97
## model6 100 949.58     207.73   0.00   1.00 -191.15

summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.6800     0.8140   2.064   0.0409 *
## CountryZAM    5.8500     2.6998   2.167   0.0319 *
## CountrySAF   -1.2250     1.2210  -1.003   0.3175
## CountryUGA   -1.4680     1.4099  -1.041   0.2996
## CountryURT    2.9833     1.3293   2.244   0.0264 *
## CountrySWA   -1.6800     2.6998  -0.622   0.5348
## CountrySEN   -1.6800     1.0509  -1.599   0.1121
## CountryZAI   -1.6800     2.6998  -0.622   0.5348
## CountryMOZ   -1.6800     1.9939  -0.843   0.4009
## CountryMLI   -1.6800     1.0153  -1.655   0.1002
## CountryKEN    2.7083     1.1022   2.457   0.0152 *
## CountryETH   -1.0300     2.6998  -0.382   0.7034
## CountryGUI   -1.6800     1.0509  -1.599   0.1121
## CountryGHA   -1.6800     1.0153  -1.655   0.1002
## CountryBKF   -1.5788     0.9037  -1.747   0.0828 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTsg)
##         LR Chisq Df Pr(>Chisq)
## Country   55.075 14  8.404e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#Model3 is the best AICc = 750.40
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTsg)
##         LR Chisq Df Pr(>Chisq)
## Species   52.321  9   3.93e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
#-----------------------------------------------------------------------
#TvTz selection model
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TvTz) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TvTz) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TvTz) ~ Country*Species+Localisation,data=data, family=gaus
sian())
model6<-glm((Prev_TvTz) ~ Country+Species+Localisation,data=data, family=gaus
sian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model1  16 1143.40       0.00   0.66   0.66 -553.74
## model2  11 1144.76       1.36   0.34   1.00 -560.46
## model4  23 1161.80      18.40   0.00   1.00 -553.72
## model3  27 1173.25      29.84   0.00   1.00 -553.72
## model6 100 1571.22     427.82   0.00   1.00 -501.98
## model5 103 1621.93     478.53   0.00   1.00 -501.96

summary(model1)

##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.951e-16  2.801e+00   0.000 1.000000
## CountryZAM  -6.294e-15  9.290e+00   0.000 1.000000
## CountrySAF  -5.800e-16  4.201e+00   0.000 1.000000
## CountryUGA   1.167e-15  4.851e+00   0.000 1.000000
## CountryURT   2.350e-01  4.574e+00   0.051 0.959097
## CountrySWA   1.059e-15  9.290e+00   0.000 1.000000
## CountrySEN   1.513e+00  3.616e+00   0.419 0.676212
## CountryZAI  -5.622e-15  9.290e+00   0.000 1.000000
## CountryMOZ   4.382e-15  6.861e+00   0.000 1.000000
## CountryMLI  -1.316e-16  3.493e+00   0.000 1.000000
```

```
## CountryKEN   8.583e-02  3.793e+00   0.023 0.981976
## CountryETH  -8.040e-15  9.290e+00   0.000 1.000000
## CountryGUI   0.000e+00  3.616e+00   0.000 1.000000
## CountryGHA   1.339e+01  3.493e+00   3.834 0.000189 ***
## CountryBKF   4.800e-01  3.110e+00   0.154 0.877548
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TvTz)
##         LR Chisq Df Pr(>Chisq)
## Country   35.005 14   0.001467 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model1 is the best AICc = 1149.47
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TvTz)
##         LR Chisq Df Pr(>Chisq)
## Species   21.204  9    0.01177 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#-------------------------------------------------------------------------
#TvTsg selection model
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TvTsg) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TvTsg) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TvTsg) ~ Country*Species+Localisation,data=data, family=gau
ssian())
model6<-glm((Prev_TvTsg) ~ Country+Species+Localisation,data=data, family=gau
ssian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")
```

```
aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model4  23 1083.12       0.00   0.97   0.97 -514.38
## model1  16 1090.71       7.59   0.02   0.99 -527.40
## model2  11 1093.22      10.10   0.01   1.00 -534.69
## model3  27 1094.08      10.96   0.00   1.00 -514.14
## model6 100 1402.52     319.40   0.00   1.00 -417.62
## model5 103 1451.91     368.79   0.00   1.00 -416.95

summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.773e-15  2.366e+00   0.000    1.000
## CountryZAM  -6.818e-14  7.846e+00   0.000    1.000
## CountrySAF  -1.283e-14  3.548e+00   0.000    1.000
## CountryUGA  -7.956e-16  4.097e+00   0.000    1.000
## CountryURT   1.142e+00  3.863e+00   0.296    0.768
## CountrySWA   7.575e-15  7.846e+00   0.000    1.000
## CountrySEN   2.589e-15  3.054e+00   0.000    1.000
## CountryZAI  -2.430e-14  7.846e+00   0.000    1.000
## CountryMOZ   1.000e+00  5.795e+00   0.173    0.863
## CountryMLI   1.225e-14  2.951e+00   0.000    1.000
## CountryKEN   1.042e-01  3.203e+00   0.033    0.974
## CountryETH   4.400e-01  7.846e+00   0.056    0.955
## CountryGUI  -3.846e-15  3.054e+00   0.000    1.000
## CountryGHA   8.723e-15  2.951e+00   0.000    1.000
## CountryBKF   6.536e+00  2.626e+00   2.489    0.014 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
```

```
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TvTsg)
##         LR Chisq Df Pr(>Chisq)
## Country   23.266 14    0.05607 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#model4 is the best AICc = 1088.66
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TvTsg)
##         LR Chisq Df Pr(>Chisq)
## Species   8.9004  9     0.4465

#-------------------------------------------------------------------------

#TzTsg selection model
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TzTsg) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TzTsg) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TzTsg) ~ Country*Species+Localisation,data=data, family=gau
ssian())
model6<-glm((Prev_TzTsg) ~ Country+Species+Localisation,data=data, family=gau
ssian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K    AICc Delta_AICc AICcWt Cum.Wt      LL
## model2  11  881.89       0.00   0.98   0.98 -429.03
## model1  16  889.56       7.68   0.02   1.00 -426.82
## model4  23  900.88      18.99   0.00   1.00 -423.26
## model3  27  912.31      30.42   0.00   1.00 -423.25
## model6 100 1322.73     440.84   0.00   1.00 -377.73
## model5 103 1373.45     491.57   0.00   1.00 -377.73
```

```
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.222e-15  1.242e+00   0.000    1.000
## CountryZAM  -1.814e-14  4.118e+00   0.000    1.000
## CountrySAF  -1.850e-15  1.862e+00   0.000    1.000
## CountryUGA   1.740e-15  2.150e+00   0.000    1.000
## CountryURT   5.533e-01  2.027e+00   0.273    0.785
## CountrySWA   1.445e-15  4.118e+00   0.000    1.000
## CountrySEN   1.765e-15  1.603e+00   0.000    1.000
## CountryZAI  -6.094e-15  4.118e+00   0.000    1.000
## CountryMOZ   1.689e-15  3.041e+00   0.000    1.000
## CountryMLI   5.128e-15  1.549e+00   0.000    1.000
## CountryKEN   2.750e-01  1.681e+00   0.164    0.870
## CountryETH   6.500e-01  4.118e+00   0.158    0.875
## CountryGUI   7.305e-16  1.603e+00   0.000    1.000
## CountryGHA   3.877e-15  1.549e+00   0.000    1.000
## CountryBKF   1.840e+00  1.378e+00   1.335    0.184
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TzTsg)
##         LR Chisq Df Pr(>Chisq)
## Country   6.5477 14     0.9507
```

```
#model2 is the best AICc = 886.37
Anova(model2)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TzTsg)
```

```
##         LR Chisq Df Pr(>Chisq)
## Species   2.5265  9     0.9802

#-------------------------------------------------------------------------

#TcTvTz selection model
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
model2<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
model3<-glm((Prev_TcTvTz) ~ Country*Species,data=data, family=gaussian())
model4<-glm((Prev_TcTvTz) ~ Country+Species,data=data, family=gaussian())
model5<-glm((Prev_TcTvTz) ~ Country*Species+Localisation,data=data, family=ga
ussian())
model6<-glm((Prev_TcTvTz) ~ Country+Species+Localisation,data=data, family=ga
ussian())

#AICc(model1, model2, model3, model4)
model.set <- list(model1, model2, model3, model4, model5, model6)
model.names <- c("model1", "model2","model3", "model4", "model5", "model6")

aictab(model.set, modnames = model.names)

##
## Model selection based on AICc:
##
##          K   AICc Delta_AICc AICcWt Cum.Wt      LL
## model2  11 265.19       0.00      1      1 -120.68
## model4  23 292.69      27.51      0      1 -119.17
## model3  27 304.14      38.96      0      1 -119.17
## model1  16 307.67      42.49      0      1 -135.88
## model6 100 672.31     407.12      0      1  -52.52
## model5 103 723.04     457.85      0      1  -52.52

summary(model1)

##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.150e-17  1.923e-01   0.000    1.000
## CountryZAM  -1.619e-15  6.378e-01   0.000    1.000
## CountrySAF  -6.904e-16  2.885e-01   0.000    1.000
## CountryUGA  -3.656e-16  3.331e-01   0.000    1.000
## CountryURT   2.697e-16  3.140e-01   0.000    1.000
## CountrySWA  -1.530e-16  6.378e-01   0.000    1.000
```

```
## CountrySEN   1.372e-16  2.483e-01   0.000    1.000
## CountryZAI  -7.134e-16  6.378e-01   0.000    1.000
## CountryMOZ  -3.098e-16  4.711e-01   0.000    1.000
## CountryMLI   3.191e-16  2.398e-01   0.000    1.000
## CountryKEN   2.307e-16  2.604e-01   0.000    1.000
## CountryETH  -9.883e-16  6.378e-01   0.000    1.000
## CountryGUI   1.577e-17  2.483e-01   0.000    1.000
## CountryGHA   3.856e-01  2.398e-01   1.607    0.110
## CountryBKF   1.549e-01  2.135e-01   0.725    0.469
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTvTz)
##         LR Chisq Df Pr(>Chisq)
## Country   6.8186 14     0.9415

#model2 is the best AICc = 265.72
Anova(model2)

## Analysis of Deviance Table (Type II tests)
##
## Response: (Prev_TcTvTz)
##         LR Chisq Df Pr(>Chisq)
## Species   39.998  9  7.605e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics for Supplementary table 3

```
#======== Glm Tc per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.4037     1.1110   3.064  0.00262 **
## CountryZIM    1.3603     2.5578   0.532  0.59568
## CountryZAM   -2.0337     7.3697  -0.276  0.78298
## CountrySAF    1.4863     2.8052   0.530  0.59706
## CountryUGA   -0.8017     3.4424  -0.233  0.81618
## CountryURT    6.3429     3.1750   1.998  0.04766 *
## CountrySWA   -3.4037     7.3697  -0.462  0.64490
## CountrySEN   -3.3031     2.1847  -1.512  0.13279
## CountryZAI   -3.4037     7.3697  -0.462  0.64490
## CountryMOZ   -0.4037     5.2700  -0.077  0.93904
## CountryMLI   -3.2971     2.0453  -1.612  0.10919
## CountryKEN   11.2504     2.3785   4.730 5.39e-06 ***
## CountryETH    2.6963     7.3697   0.366  0.71502
## CountryGUI   -3.4037     2.1847  -1.558  0.12148
## CountryGHA   -3.0848     2.0453  -1.508  0.13372
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3189     1.7172   0.186  0.85294
## CountryBKF    3.0848     2.0453   1.508  0.13372
## CountryZIM    4.4451     2.8734   1.547  0.12411
## CountryZAM    1.0511     7.4851   0.140  0.88852
## CountrySAF    4.5711     3.0957   1.477  0.14201
## CountryUGA    2.2831     3.6830   0.620  0.53632
## CountryURT    9.4278     3.4344   2.745  0.00684 **
## CountrySWA   -0.3189     7.4851  -0.043  0.96608
```

```
## CountrySEN   -0.2182     2.5470  -0.086  0.93184
## CountryZAI   -0.3189     7.4851  -0.043  0.96608
## CountryMOZ    2.6811     5.4302   0.494  0.62226
## CountryMLI   -0.2122     2.4285  -0.087  0.93049
## CountryKEN   14.3353     2.7151   5.280 4.79e-07 ***
## CountryETH    5.7811     7.4851   0.772  0.44120
## CountryGUI   -0.3189     2.5470  -0.125  0.90054
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.204e-14  1.881e+00   0.000  1.00000
## CountryGHA   3.189e-01  2.547e+00   0.125  0.90054
## CountryBKF   3.404e+00  2.185e+00   1.558  0.12148
## CountryZIM   4.764e+00  2.974e+00   1.602  0.11145
## CountryZAM   1.370e+00  7.524e+00   0.182  0.85579
## CountrySAF   4.890e+00  3.190e+00   1.533  0.12748
## CountryUGA   2.602e+00  3.762e+00   0.692  0.49031
## CountryURT   9.747e+00  3.519e+00   2.770  0.00637 **
## CountrySWA   5.479e-15  7.524e+00   0.000  1.00000
## CountrySEN   1.007e-01  2.660e+00   0.038  0.96987
## CountryZAI  -3.096e-14  7.524e+00   0.000  1.00000
## CountryMOZ   3.000e+00  5.484e+00   0.547  0.58523
## CountryMLI   1.067e-01  2.547e+00   0.042  0.96665
## CountryKEN   1.465e+01  2.822e+00   5.194 7.08e-07 ***
## CountryETH   6.100e+00  7.524e+00   0.811  0.41890
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.100      7.285   0.837    0.404
## CountryGUI    -6.100      7.524  -0.811    0.419
## CountryGHA    -5.781      7.485  -0.772    0.441
## CountryBKF    -2.696      7.370  -0.366    0.715
## CountryZIM    -1.336      7.641  -0.175    0.861
## CountryZAM    -4.730     10.303  -0.459    0.647
## CountrySAF    -1.210      7.727  -0.157    0.876
## CountryUGA    -3.498      7.981  -0.438    0.662
## CountryURT     3.647      7.869   0.463    0.644
## CountrySWA    -6.100     10.303  -0.592    0.555
## CountrySEN    -5.999      7.524  -0.797    0.427
## CountryZAI    -6.100     10.303  -0.592    0.555
## CountryMOZ    -3.100      8.923  -0.347    0.729
## CountryMLI    -5.993      7.485  -0.801    0.425
## CountryKEN     8.554      7.583   1.128    0.261
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.654      2.103   6.968 1.13e-10 ***
## CountryETH    -8.554      7.583  -1.128  0.26120
## CountryGUI   -14.654      2.822  -5.194 7.08e-07 ***
## CountryGHA   -14.335      2.715  -5.280 4.79e-07 ***
## CountryBKF   -11.250      2.379  -4.730 5.39e-06 ***
## CountryZIM    -9.890      3.119  -3.170  0.00187 **
## CountryZAM   -13.284      7.583  -1.752  0.08197 .
## CountrySAF    -9.764      3.325  -2.936  0.00388 **
## CountryUGA   -12.052      3.878  -3.108  0.00228 **
## CountryURT    -4.908      3.643  -1.347  0.18007
## CountrySWA   -14.654      7.583  -1.933  0.05530 .
## CountrySEN   -14.554      2.822  -5.158 8.31e-07 ***
## CountryZAI   -14.654      7.583  -1.933  0.05530 .
## CountryMOZ   -11.654      5.564  -2.094  0.03801 *
## CountryMLI   -14.547      2.715  -5.358 3.35e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)   0.1067     1.7172   0.062  0.95056
## CountryKEN   14.5475     2.7151   5.358 3.35e-07 ***
## CountryETH    5.9933     7.4851   0.801  0.42465
## CountryGUI   -0.1067     2.5470  -0.042  0.96665
## CountryGHA    0.2122     2.4285   0.087  0.93049
## CountryBKF    3.2971     2.0453   1.612  0.10919
## CountryZIM    4.6573     2.8734   1.621  0.10729
## CountryZAM    1.2633     7.4851   0.169  0.86621
## CountrySAF    4.7833     3.0957   1.545  0.12455
## CountryUGA    2.4953     3.6830   0.678  0.49918
## CountryURT    9.6400     3.4344   2.807  0.00571 **
## CountrySWA   -0.1067     7.4851  -0.014  0.98865
## CountrySEN   -0.0060     2.5470  -0.002  0.99812
## CountryZAI   -0.1067     7.4851  -0.014  0.98865
## CountryMOZ    2.8933     5.4302   0.533  0.59500
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.0000     5.1516   0.582    0.561
## CountryMLI   -2.8933     5.4302  -0.533    0.595
## CountryKEN   11.6542     5.5643   2.094    0.038 *
## CountryETH    3.1000     8.9228   0.347    0.729
## CountryGUI   -3.0000     5.4843  -0.547    0.585
## CountryGHA   -2.6811     5.4302  -0.494    0.622
## CountryBKF    0.4037     5.2700   0.077    0.939
## CountryZIM    1.7640     5.6433   0.313    0.755
## CountryZAM   -1.6300     8.9228  -0.183    0.855
## CountrySAF    1.8900     5.7596   0.328    0.743
```

```
## CountryUGA   -0.3980     6.0954  -0.065    0.948
## CountryURT    6.7467     5.9485   1.134    0.259
## CountrySWA   -3.0000     8.9228  -0.336    0.737
## CountrySEN   -2.8993     5.4843  -0.529    0.598
## CountryZAI   -3.0000     8.9228  -0.336    0.737
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.752e-14  7.285e+00   0.000   1.0000
## CountryMOZ   3.000e+00  8.923e+00   0.336   0.7372
## CountryMLI   1.067e-01  7.485e+00   0.014   0.9887
## CountryKEN   1.465e+01  7.583e+00   1.933   0.0553 .
## CountryETH   6.100e+00  1.030e+01   0.592   0.5548
## CountryGUI   3.013e-14  7.524e+00   0.000   1.0000
## CountryGHA   3.189e-01  7.485e+00   0.043   0.9661
## CountryBKF   3.404e+00  7.370e+00   0.462   0.6449
## CountryZIM   4.764e+00  7.641e+00   0.623   0.5340
## CountryZAM   1.370e+00  1.030e+01   0.133   0.8944
## CountrySAF   4.890e+00  7.727e+00   0.633   0.5279
## CountryUGA   2.602e+00  7.981e+00   0.326   0.7449
## CountryURT   9.747e+00  7.869e+00   1.239   0.2176
## CountrySWA   3.592e-14  1.030e+01   0.000   1.0000
## CountrySEN   1.007e-01  7.524e+00   0.013   0.9893
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
```

```
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1007     1.8811   0.054  0.95740
## CountryZAI   -0.1007     7.5244  -0.013  0.98934
## CountryMOZ    2.8993     5.4843   0.529  0.59787
## CountryMLI    0.0060     2.5470   0.002  0.99812
## CountryKEN   14.5535     2.8216   5.158 8.31e-07 ***
## CountryETH    5.9993     7.5244   0.797  0.42661
## CountryGUI   -0.1007     2.6603  -0.038  0.96987
## CountryGHA    0.2182     2.5470   0.086  0.93184
## CountryBKF    3.3031     2.1847   1.512  0.13279
## CountryZIM    4.6633     2.9743   1.568  0.11915
## CountryZAM    1.2693     7.5244   0.169  0.86628
## CountrySAF    4.7893     3.1895   1.502  0.13544
## CountryUGA    2.5013     3.7622   0.665  0.50722
## CountryURT    9.6460     3.5192   2.741  0.00692 **
## CountrySWA   -0.1007     7.5244  -0.013  0.98934
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.653e-14  7.285e+00   0.000   1.0000
## CountrySEN   1.007e-01  7.524e+00   0.013   0.9893
## CountryZAI  -2.192e-14  1.030e+01   0.000   1.0000
## CountryMOZ   3.000e+00  8.923e+00   0.336   0.7372
## CountryMLI   1.067e-01  7.485e+00   0.014   0.9887
## CountryKEN   1.465e+01  7.583e+00   1.933   0.0553 .
## CountryETH   6.100e+00  1.030e+01   0.592   0.5548
## CountryGUI  -2.485e-14  7.524e+00   0.000   1.0000
## CountryGHA   3.189e-01  7.485e+00   0.043   0.9661
## CountryBKF   3.404e+00  7.370e+00   0.462   0.6449
## CountryZIM   4.764e+00  7.641e+00   0.623   0.5340
## CountryZAM   1.370e+00  1.030e+01   0.133   0.8944
## CountrySAF   4.890e+00  7.727e+00   0.633   0.5279
## CountryUGA   2.602e+00  7.981e+00   0.326   0.7449
## CountryURT   9.747e+00  7.869e+00   1.239   0.2176
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)    9.747      2.974   3.277  0.00132 **
## CountrySWA    -9.747      7.869  -1.239  0.21756
## CountrySEN    -9.646      3.519  -2.741  0.00692 **
## CountryZAI    -9.747      7.869  -1.239  0.21756
## CountryMOZ    -6.747      5.949  -1.134  0.25865
## CountryMLI    -9.640      3.434  -2.807  0.00571 **
## CountryKEN     4.908      3.643   1.347  0.18007
## CountryETH    -3.647      7.869  -0.463  0.64378
## CountryGUI    -9.747      3.519  -2.770  0.00637 **
## CountryGHA    -9.428      3.434  -2.745  0.00684 **
## CountryBKF    -6.343      3.175  -1.998  0.04766 *
## CountryZIM    -4.983      3.762  -1.324  0.18751
## CountryZAM    -8.377      7.869  -1.064  0.28893
## CountrySAF    -4.857      3.935  -1.234  0.21912
## CountryUGA    -7.145      4.412  -1.620  0.10757
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.6020     3.2581   0.799  0.42586
## CountryURT    7.1447     4.4115   1.620  0.10757
## CountrySWA   -2.6020     7.9808  -0.326  0.74488
## CountrySEN   -2.5013     3.7622  -0.665  0.50722
## CountryZAI   -2.6020     7.9808  -0.326  0.74488
## CountryMOZ    0.3980     6.0954   0.065  0.94803
## CountryMLI   -2.4953     3.6830  -0.678  0.49918
## CountryKEN   12.0522     3.8780   3.108  0.00228 **
## CountryETH    3.4980     7.9808   0.438  0.66184
## CountryGUI   -2.6020     3.7622  -0.692  0.49031
```

```
## CountryGHA   -2.2831     3.6830  -0.620  0.53632
## CountryBKF    0.8017     3.4424   0.233  0.81618
## CountryZIM    2.1620     3.9904   0.542  0.58881
## CountryZAM   -1.2320     7.9808  -0.154  0.87754
## CountrySAF    2.2880     4.1533   0.551  0.58259
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.890      2.576   1.898  0.05968 .
## CountryUGA    -2.288      4.153  -0.551  0.58259
## CountryURT     4.857      3.935   1.234  0.21912
## CountrySWA    -4.890      7.727  -0.633  0.52788
## CountrySEN    -4.789      3.189  -1.502  0.13544
## CountryZAI    -4.890      7.727  -0.633  0.52788
## CountryMOZ    -1.890      5.760  -0.328  0.74329
## CountryMLI    -4.783      3.096  -1.545  0.12455
## CountryKEN     9.764      3.325   2.936  0.00388 **
## CountryETH     1.210      7.727   0.157  0.87579
## CountryGUI    -4.890      3.189  -1.533  0.12748
## CountryGHA    -4.571      3.096  -1.477  0.14201
## CountryBKF    -1.486      2.805  -0.530  0.59706
## CountryZIM    -0.126      3.456  -0.036  0.97097
## CountryZAM    -3.520      7.727  -0.456  0.64943
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
```

```
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.370      7.285   0.188    0.851
## CountrySAF     3.520      7.727   0.456    0.649
## CountryUGA     1.232      7.981   0.154    0.878
## CountryURT     8.377      7.869   1.064    0.289
## CountrySWA    -1.370     10.303  -0.133    0.894
## CountrySEN    -1.269      7.524  -0.169    0.866
## CountryZAI    -1.370     10.303  -0.133    0.894
## CountryMOZ     1.630      8.923   0.183    0.855
## CountryMLI    -1.263      7.485  -0.169    0.866
## CountryKEN    13.284      7.583   1.752    0.082 .
## CountryETH     4.730     10.303   0.459    0.647
## CountryGUI    -1.370      7.524  -0.182    0.856
## CountryGHA    -1.051      7.485  -0.140    0.889
## CountryBKF     2.034      7.370   0.276    0.783
## CountryZIM     3.394      7.641   0.444    0.658
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Tc) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.594   -3.404   -0.107    0.000   46.596
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.764      2.304   2.068  0.04048 *
## CountryZAM    -3.394      7.641  -0.444  0.65759
## CountrySAF     0.126      3.456   0.036  0.97097
## CountryUGA    -2.162      3.990  -0.542  0.58881
## CountryURT     4.983      3.762   1.324  0.18751
## CountrySWA    -4.764      7.641  -0.623  0.53398
## CountrySEN    -4.663      2.974  -1.568  0.11915
## CountryZAI    -4.764      7.641  -0.623  0.53398
## CountryMOZ    -1.764      5.643  -0.313  0.75506
## CountryMLI    -4.657      2.873  -1.621  0.10729
## CountryKEN     9.890      3.119   3.170  0.00187 **
## CountryETH     1.336      7.641   0.175  0.86145
## CountryGUI    -4.764      2.974  -1.602  0.11145
## CountryGHA    -4.445      2.873  -1.547  0.12411
## CountryBKF    -1.360      2.558  -0.532  0.59568
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.07752)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7483.9  on 141  degrees of freedom
## AIC: 1078.5
##
## Number of Fisher Scoring iterations: 2
```

```
#======== Glm Tv per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
```

```
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   15.177      2.642   5.744 5.46e-08 ***
## CountryZIM   -14.621      6.082  -2.404   0.0175 *
## CountryZAM   -14.497     17.525  -0.827   0.4095
## CountrySAF   -14.274      6.671  -2.140   0.0341 *
## CountryUGA   -14.751      8.186  -1.802   0.0737 .
## CountryURT   -13.403      7.550  -1.775   0.0780 .
## CountrySWA   -15.177     17.525  -0.866   0.3880
## CountrySEN     7.216      5.195   1.389   0.1670
## CountryZAI   -12.317     17.525  -0.703   0.4834
## CountryMOZ   -14.177     12.532  -1.131   0.2599
## CountryMLI    -5.407      4.864  -1.112   0.2682
## CountryKEN   -10.357      5.656  -1.831   0.0692 .
## CountryETH   -14.527     17.525  -0.829   0.4086
## CountryGUI   -12.203      5.195  -2.349   0.0202 *
## CountryGHA     1.535      4.864   0.316   0.7528
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   16.711      4.084   4.092 7.16e-05 ***
## CountryBKF    -1.535      4.864  -0.316   0.7528
## CountryZIM   -16.155      6.833  -2.364   0.0194 *
## CountryZAM   -16.031     17.800  -0.901   0.3693
## CountrySAF   -15.809      7.362  -2.147   0.0335 *
## CountryUGA   -16.285      8.758  -1.859   0.0651 .
## CountryURT   -14.938      8.167  -1.829   0.0695 .
## CountrySWA   -16.711     17.800  -0.939   0.3494
## CountrySEN     5.682      6.057   0.938   0.3498
```

```
## CountryZAI   -13.851     17.800  -0.778   0.4378
## CountryMOZ   -15.711     12.913  -1.217   0.2258
## CountryMLI    -6.941      5.775  -1.202   0.2314
## CountryKEN   -11.891      6.457  -1.842   0.0676 .
## CountryETH   -16.061     17.800  -0.902   0.3684
## CountryGUI   -13.737      6.057  -2.268   0.0248 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.974      4.473   0.665  0.50725
## CountryGHA    13.737      6.057   2.268  0.02485 *
## CountryBKF    12.203      5.195   2.349  0.02022 *
## CountryZIM    -2.418      7.073  -0.342  0.73296
## CountryZAM    -2.294     17.893  -0.128  0.89817
## CountrySAF    -2.071      7.585  -0.273  0.78517
## CountryUGA    -2.548      8.947  -0.285  0.77622
## CountryURT    -1.201      8.369  -0.143  0.88613
## CountrySWA    -2.974     17.893  -0.166  0.86823
## CountrySEN    19.419      6.326   3.070  0.00257 **
## CountryZAI    -0.114     17.893  -0.006  0.99493
## CountryMOZ    -1.974     13.042  -0.151  0.87991
## CountryMLI     6.796      6.057   1.122  0.26376
## CountryKEN     1.846      6.710   0.275  0.78363
## CountryETH    -2.324     17.893  -0.130  0.89685
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
```

```
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6500    17.3252   0.038    0.970
## CountryGUI    2.3240    17.8934   0.130    0.897
## CountryGHA   16.0611    17.7999   0.902    0.368
## CountryBKF   14.5265    17.5255   0.829    0.409
## CountryZIM   -0.0940    18.1708  -0.005    0.996
## CountryZAM    0.0300    24.5015   0.001    0.999
## CountrySAF    0.2525    18.3761   0.014    0.989
## CountryUGA   -0.2240    18.9788  -0.012    0.991
## CountryURT    1.1233    18.7133   0.060    0.952
## CountrySWA   -0.6500    24.5015  -0.027    0.979
## CountrySEN   21.7427    17.8934   1.215    0.226
## CountryZAI    2.2100    24.5015   0.090    0.928
## CountryMOZ    0.3500    21.2189   0.016    0.987
## CountryMLI    9.1200    17.7999   0.512    0.609
## CountryKEN    4.1700    18.0326   0.231    0.817
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.820      5.001   0.964  0.33683
## CountryETH    -4.170     18.033  -0.231  0.81746
## CountryGUI    -1.846      6.710  -0.275  0.78363
## CountryGHA    11.891      6.457   1.842  0.06762 .
## CountryBKF    10.357      5.656   1.831  0.06922 .
## CountryZIM    -4.264      7.418  -0.575  0.56634
## CountryZAM    -4.140     18.033  -0.230  0.81875
## CountrySAF    -3.918      7.908  -0.495  0.62109
## CountryUGA    -4.394      9.222  -0.476  0.63448
## CountryURT    -3.047      8.663  -0.352  0.72559
## CountrySWA    -4.820     18.033  -0.267  0.78963
## CountrySEN    17.573      6.710   2.619  0.00979 **
## CountryZAI    -1.960     18.033  -0.109  0.91360
## CountryMOZ    -3.820     13.232  -0.289  0.77324
## CountryMLI     4.950      6.457   0.767  0.44457
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.770      4.084   2.393   0.0181 *
## CountryKEN    -4.950      6.457  -0.767   0.4446
```

```
## CountryETH    -9.120     17.800  -0.512   0.6092
## CountryGUI    -6.796      6.057  -1.122   0.2638
## CountryGHA     6.941      5.775   1.202   0.2314
## CountryBKF     5.407      4.864   1.112   0.2682
## CountryZIM    -9.214      6.833  -1.348   0.1797
## CountryZAM    -9.090     17.800  -0.511   0.6104
## CountrySAF    -8.868      7.362  -1.205   0.2304
## CountryUGA    -9.344      8.758  -1.067   0.2879
## CountryURT    -7.997      8.167  -0.979   0.3292
## CountrySWA    -9.770     17.800  -0.549   0.5840
## CountrySEN    12.623      6.057   2.084   0.0390 *
## CountryZAI    -6.910     17.800  -0.388   0.6985
## CountryMOZ    -8.770     12.913  -0.679   0.4982
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0000    12.2507   0.082    0.935
## CountryMLI    8.7700    12.9134   0.679    0.498
## CountryKEN    3.8200    13.2323   0.289    0.773
## CountryETH   -0.3500    21.2189  -0.016    0.987
## CountryGUI    1.9740    13.0419   0.151    0.880
## CountryGHA   15.7111    12.9134   1.217    0.226
## CountryBKF   14.1765    12.5324   1.131    0.260
## CountryZIM   -0.4440    13.4200  -0.033    0.974
## CountryZAM   -0.3200    21.2189  -0.015    0.988
## CountrySAF   -0.0975    13.6967  -0.007    0.994
## CountryUGA   -0.5740    14.4953  -0.040    0.968
## CountryURT    0.7733    14.1459   0.055    0.956
```

```
## CountrySWA   -1.0000    21.2189  -0.047    0.962
## CountrySEN   21.3927    13.0419   1.640    0.103
## CountryZAI    1.8600    21.2189   0.088    0.930
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.860     17.325   0.165    0.869
## CountryMOZ    -1.860     21.219  -0.088    0.930
## CountryMLI     6.910     17.800   0.388    0.698
## CountryKEN     1.960     18.033   0.109    0.914
## CountryETH    -2.210     24.502  -0.090    0.928
## CountryGUI     0.114     17.893   0.006    0.995
## CountryGHA    13.851     17.800   0.778    0.438
## CountryBKF    12.316     17.526   0.703    0.483
## CountryZIM    -2.304     18.171  -0.127    0.899
## CountryZAM    -2.180     24.502  -0.089    0.929
## CountrySAF    -1.958     18.376  -0.107    0.915
## CountryUGA    -2.434     18.979  -0.128    0.898
## CountryURT    -1.087     18.713  -0.058    0.954
## CountrySWA    -2.860     24.502  -0.117    0.907
## CountrySEN    19.533     17.893   1.092    0.277
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   22.393      4.473   5.006 1.63e-06 ***
## CountryZAI   -19.533     17.893  -1.092  0.27686
## CountryMOZ   -21.393     13.042  -1.640  0.10317
## CountryMLI   -12.623      6.057  -2.084  0.03896 *
## CountryKEN   -17.573      6.710  -2.619  0.00979 **
## CountryETH   -21.743     17.893  -1.215  0.22635
## CountryGUI   -19.419      6.326  -3.070  0.00257 **
## CountryGHA    -5.682      6.057  -0.938  0.34984
## CountryBKF    -7.216      5.195  -1.389  0.16703
## CountryZIM   -21.837      7.073  -3.087  0.00243 **
## CountryZAM   -21.713     17.893  -1.213  0.22699
## CountrySAF   -21.490      7.585  -2.833  0.00528 **
## CountryUGA   -21.967      8.947  -2.455  0.01529 *
## CountryURT   -20.619      8.369  -2.464  0.01495 *
## CountrySWA   -22.393     17.893  -1.251  0.21284
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.314e-13  1.733e+01   0.000    1.000
## CountrySEN  2.239e+01  1.789e+01   1.251    0.213
## CountryZAI  2.860e+00  2.450e+01   0.117    0.907
## CountryMOZ  1.000e+00  2.122e+01   0.047    0.962
## CountryMLI  9.770e+00  1.780e+01   0.549    0.584
## CountryKEN  4.820e+00  1.803e+01   0.267    0.790
## CountryETH  6.500e-01  2.450e+01   0.027    0.979
## CountryGUI  2.974e+00  1.789e+01   0.166    0.868
## CountryGHA  1.671e+01  1.780e+01   0.939    0.349
## CountryBKF  1.518e+01  1.753e+01   0.866    0.388
## CountryZIM  5.560e-01  1.817e+01   0.031    0.976
## CountryZAM  6.800e-01  2.450e+01   0.028    0.978
## CountrySAF  9.025e-01  1.838e+01   0.049    0.961
## CountryUGA  4.260e-01  1.898e+01   0.022    0.982
## CountryURT  1.773e+00  1.871e+01   0.095    0.925
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.7733     7.0730   0.251   0.8024
## CountrySWA   -1.7733    18.7133  -0.095   0.9246
## CountrySEN   20.6193     8.3689   2.464   0.0149 *
## CountryZAI    1.0867    18.7133   0.058   0.9538
## CountryMOZ   -0.7733    14.1459  -0.055   0.9565
## CountryMLI    7.9967     8.1672   0.979   0.3292
## CountryKEN    3.0467     8.6626   0.352   0.7256
## CountryETH   -1.1233    18.7133  -0.060   0.9522
```

```
## CountryGUI    1.2007     8.3689   0.143   0.8861
## CountryGHA   14.9378     8.1672   1.829   0.0695 .
## CountryBKF   13.4032     7.5503   1.775   0.0780 .
## CountryZIM   -1.2173     8.9467  -0.136   0.8920
## CountryZAM   -1.0933    18.7133  -0.058   0.9535
## CountrySAF   -0.8708     9.3567  -0.093   0.9260
## CountryUGA   -1.3473    10.4909  -0.128   0.8980
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4260     7.7481   0.055   0.9562
## CountryURT    1.3473    10.4909   0.128   0.8980
## CountrySWA   -0.4260    18.9788  -0.022   0.9821
## CountrySEN   21.9667     8.9467   2.455   0.0153 *
## CountryZAI    2.4340    18.9788   0.128   0.8981
## CountryMOZ    0.5740    14.4953   0.040   0.9685
## CountryMLI    9.3440     8.7583   1.067   0.2879
## CountryKEN    4.3940     9.2220   0.476   0.6345
## CountryETH    0.2240    18.9788   0.012   0.9906
## CountryGUI    2.5480     8.9467   0.285   0.7762
## CountryGHA   16.2851     8.7583   1.859   0.0651 .
## CountryBKF   14.7505     8.1861   1.802   0.0737 .
## CountryZIM    0.1300     9.4894   0.014   0.9891
## CountryZAM    0.2540    18.9788   0.013   0.9893
## CountrySAF    0.4765     9.8769   0.048   0.9616
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9025     6.1254   0.147  0.88308
## CountryUGA   -0.4765     9.8769  -0.048  0.96159
## CountryURT    0.8708     9.3567   0.093  0.92598
## CountrySWA   -0.9025    18.3761  -0.049  0.96090
## CountrySEN   21.4902     7.5849   2.833  0.00528 **
## CountryZAI    1.9575    18.3761   0.107  0.91532
## CountryMOZ    0.0975    13.6967   0.007  0.99433
## CountryMLI    8.8675     7.3618   1.205  0.23040
## CountryKEN    3.9175     7.9078   0.495  0.62109
## CountryETH   -0.2525    18.3761  -0.014  0.98906
## CountryGUI    2.0715     7.5849   0.273  0.78517
## CountryGHA   15.8086     7.3618   2.147  0.03347 *
## CountryBKF   14.2740     6.6709   2.140  0.03410 *
## CountryZIM   -0.3465     8.2180  -0.042  0.96643
## CountryZAM   -0.2225    18.3761  -0.012  0.99036
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6800    17.3252   0.039    0.969
## CountrySAF    0.2225    18.3761   0.012    0.990
## CountryUGA   -0.2540    18.9788  -0.013    0.989
## CountryURT    1.0933    18.7133   0.058    0.953
## CountrySWA   -0.6800    24.5015  -0.028    0.978
## CountrySEN   21.7127    17.8934   1.213    0.227
## CountryZAI    2.1800    24.5015   0.089    0.929
## CountryMOZ    0.3200    21.2189   0.015    0.988
## CountryMLI    9.0900    17.7999   0.511    0.610
## CountryKEN    4.1400    18.0326   0.230    0.819
## CountryETH   -0.0300    24.5015  -0.001    0.999
## CountryGUI    2.2940    17.8934   0.128    0.898
## CountryGHA   16.0311    17.7999   0.901    0.369
## CountryBKF   14.4965    17.5255   0.827    0.410
## CountryZIM   -0.1240    18.1708  -0.007    0.995
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Tv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393   -9.770   -1.427    3.072   77.607
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5560     5.4787   0.101  0.91931
## CountryZAM    0.1240    18.1708   0.007  0.99456
## CountrySAF    0.3465     8.2180   0.042  0.96643
## CountryUGA   -0.1300     9.4894  -0.014  0.98909
## CountryURT    1.2173     8.9467   0.136  0.89196
## CountrySWA   -0.5560    18.1708  -0.031  0.97563
## CountrySEN   21.8367     7.0730   3.087  0.00243 **
## CountryZAI    2.3040    18.1708   0.127  0.89928
## CountryMOZ    0.4440    13.4200   0.033  0.97365
## CountryMLI    9.2140     6.8331   1.348  0.17968
## CountryKEN    4.2640     7.4182   0.575  0.56634
## CountryETH    0.0940    18.1708   0.005  0.99588
## CountryGUI    2.4180     7.0730   0.342  0.73296
## CountryGHA   16.1551     6.8331   2.364  0.01943 *
## CountryBKF   14.6205     6.0825   2.404  0.01753 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 300.1614)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 42323  on 141  degrees of freedom
## AIC: 1348.8
##
## Number of Fisher Scoring iterations: 2

#======== Glm Tz per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.0077     1.9654   1.530    0.128
## CountryZIM   -1.9827     4.5248  -0.438    0.662
## CountryZAM   -2.3277    13.0372  -0.179    0.859
## CountrySAF    0.9461     4.9625   0.191    0.849
## CountryUGA   -1.9957     6.0897  -0.328    0.744
## CountryURT    2.0323     5.6167   0.362    0.718
## CountrySWA   -3.0077    13.0372  -0.231    0.818
```

```
## CountrySEN    1.1203     3.8648   0.290    0.772
## CountryZAI   -3.0077    13.0372  -0.231    0.818
## CountryMOZ   -3.0077     9.3229  -0.323    0.747
## CountryMLI   -2.4571     3.6181  -0.679    0.498
## CountryKEN   -2.5827     4.2077  -0.614    0.540
## CountryETH   -1.9177    13.0372  -0.147    0.883
## CountryGUI   -3.0077     3.8648  -0.778    0.438
## CountryGHA   31.9901     3.6181   8.842 3.46e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   34.998      3.038  11.521  < 2e-16 ***
## CountryBKF   -31.990      3.618  -8.842 3.46e-15 ***
## CountryZIM   -33.973      5.083  -6.683 5.02e-10 ***
## CountryZAM   -34.318     13.241  -2.592 0.010555 *
## CountrySAF   -31.044      5.476  -5.669 7.83e-08 ***
## CountryUGA   -33.986      6.515  -5.216 6.38e-07 ***
## CountryURT   -29.958      6.076  -4.931 2.27e-06 ***
## CountrySWA   -34.998     13.241  -2.643 0.009145 **
## CountrySEN   -30.870      4.506  -6.851 2.09e-10 ***
## CountryZAI   -34.998     13.241  -2.643 0.009145 **
## CountryMOZ   -34.998      9.606  -3.643 0.000378 ***
## CountryMLI   -34.447      4.296  -8.018 3.71e-13 ***
## CountryKEN   -34.573      4.803  -7.198 3.33e-11 ***
## CountryETH   -33.908     13.241  -2.561 0.011496 *
## CountryGUI   -34.998      4.506  -7.767 1.50e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.000e+00  3.328e+00   0.000    1.000
## CountryGHA   3.500e+01  4.506e+00   7.767  1.5e-12 ***
## CountryBKF   3.008e+00  3.865e+00   0.778    0.438
## CountryZIM   1.025e+00  5.262e+00   0.195    0.846
## CountryZAM   6.800e-01  1.331e+01   0.051    0.959
## CountrySAF   3.954e+00  5.642e+00   0.701    0.485
## CountryUGA   1.012e+00  6.655e+00   0.152    0.879
## CountryURT   5.040e+00  6.226e+00   0.810    0.420
## CountrySWA  -8.168e-15  1.331e+01   0.000    1.000
## CountrySEN   4.128e+00  4.706e+00   0.877    0.382
## CountryZAI   3.757e-15  1.331e+01   0.000    1.000
## CountryMOZ   6.415e-16  9.702e+00   0.000    1.000
## CountryMLI   5.506e-01  4.506e+00   0.122    0.903
## CountryKEN   4.250e-01  4.992e+00   0.085    0.932
## CountryETH   1.090e+00  1.331e+01   0.082    0.935
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0900    12.8882   0.085   0.9327
## CountryGUI   -1.0900    13.3109  -0.082   0.9349
## CountryGHA   33.9078    13.2414   2.561   0.0115 *
## CountryBKF    1.9177    13.0372   0.147   0.8833
## CountryZIM   -0.0650    13.5173  -0.005   0.9962
## CountryZAM   -0.4100    18.2267  -0.022   0.9821
## CountrySAF    2.8638    13.6700   0.209   0.8344
## CountryUGA   -0.0780    14.1183  -0.006   0.9956
## CountryURT    3.9500    13.9208   0.284   0.7770
## CountrySWA   -1.0900    18.2267  -0.060   0.9524
## CountrySEN    3.0380    13.3109   0.228   0.8198
## CountryZAI   -1.0900    18.2267  -0.060   0.9524
## CountryMOZ   -1.0900    15.7848  -0.069   0.9450
## CountryMLI   -0.5394    13.2414  -0.041   0.9676
## CountryKEN   -0.6650    13.4145  -0.050   0.9605
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4250     3.7205   0.114    0.909
## CountryETH    0.6650    13.4145   0.050    0.961
## CountryGUI   -0.4250     4.9916  -0.085    0.932
## CountryGHA   34.5728     4.8031   7.198 3.33e-11 ***
## CountryBKF    2.5827     4.2077   0.614    0.540
## CountryZIM    0.6000     5.5184   0.109    0.914
## CountryZAM    0.2550    13.4145   0.019    0.985
## CountrySAF    3.5287     5.8826   0.600    0.550
## CountryUGA    0.5870     6.8603   0.086    0.932
## CountryURT    4.6150     6.4441   0.716    0.475
## CountrySWA   -0.4250    13.4145  -0.032    0.975
## CountrySEN    3.7030     4.9916   0.742    0.459
## CountryZAI   -0.4250    13.4145  -0.032    0.975
## CountryMOZ   -0.4250     9.8435  -0.043    0.966
## CountryMLI    0.1256     4.8031   0.026    0.979
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5506     3.0378   0.181    0.856
## CountryKEN   -0.1256     4.8031  -0.026    0.979
## CountryETH    0.5394    13.2414   0.041    0.968
## CountryGUI   -0.5506     4.5058  -0.122    0.903
## CountryGHA   34.4472     4.2961   8.018 3.71e-13 ***
## CountryBKF    2.4571     3.6181   0.679    0.498
```

```
## CountryZIM    0.4744     5.0832   0.093    0.926
## CountryZAM    0.1294    13.2414   0.010    0.992
## CountrySAF    3.4032     5.4764   0.621    0.535
## CountryUGA    0.4614     6.5153   0.071    0.944
## CountryURT    4.4894     6.0756   0.739    0.461
## CountrySWA   -0.5506    13.2414  -0.042    0.967
## CountrySEN    3.5774     4.5058   0.794    0.429
## CountryZAI   -0.5506    13.2414  -0.042    0.967
## CountryMOZ   -0.5506     9.6063  -0.057    0.954
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.176e-14  9.113e+00   0.000 1.000000
## CountryMLI   5.506e-01  9.606e+00   0.057 0.954378
## CountryKEN   4.250e-01  9.844e+00   0.043 0.965623
## CountryETH   1.090e+00  1.578e+01   0.069 0.945044
## CountryGUI  -3.618e-14  9.702e+00   0.000 1.000000
## CountryGHA   3.500e+01  9.606e+00   3.643 0.000378 ***
## CountryBKF   3.008e+00  9.323e+00   0.323 0.747466
## CountryZIM   1.025e+00  9.983e+00   0.103 0.918368
## CountryZAM   6.800e-01  1.578e+01   0.043 0.965699
## CountrySAF   3.954e+00  1.019e+01   0.388 0.698571
## CountryUGA   1.012e+00  1.078e+01   0.094 0.925361
## CountryURT   5.040e+00  1.052e+01   0.479 0.632721
## CountrySWA  -2.555e-14  1.578e+01   0.000 1.000000
## CountrySEN   4.128e+00  9.702e+00   0.425 0.671132
## CountryZAI  -4.045e-14  1.578e+01   0.000 1.000000
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  9.204e-14  1.289e+01   0.000  1.00000
## CountryMOZ  -9.421e-14  1.578e+01   0.000  1.00000
## CountryMLI   5.506e-01  1.324e+01   0.042  0.96689
## CountryKEN   4.250e-01  1.341e+01   0.032  0.97477
## CountryETH   1.090e+00  1.823e+01   0.060  0.95240
## CountryGUI  -8.908e-14  1.331e+01   0.000  1.00000
## CountryGHA   3.500e+01  1.324e+01   2.643  0.00915 **
## CountryBKF   3.008e+00  1.304e+01   0.231  0.81788
## CountryZIM   1.025e+00  1.352e+01   0.076  0.93966
## CountryZAM   6.800e-01  1.823e+01   0.037  0.97029
## CountrySAF   3.954e+00  1.367e+01   0.289  0.77283
## CountryUGA   1.012e+00  1.412e+01   0.072  0.94296
## CountryURT   5.040e+00  1.392e+01   0.362  0.71786
## CountrySWA  -9.613e-14  1.823e+01   0.000  1.00000
## CountrySEN   4.128e+00  1.331e+01   0.310  0.75693
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.1280     3.3277   1.240    0.217
## CountryZAI   -4.1280    13.3109  -0.310    0.757
## CountryMOZ   -4.1280     9.7019  -0.425    0.671
## CountryMLI   -3.5774     4.5058  -0.794    0.429
## CountryKEN   -3.7030     4.9916  -0.742    0.459
## CountryETH   -3.0380    13.3109  -0.228    0.820
## CountryGUI   -4.1280     4.7061  -0.877    0.382
## CountryGHA   30.8698     4.5058   6.851 2.09e-10 ***
## CountryBKF   -1.1203     3.8648  -0.290    0.772
## CountryZIM   -3.1030     5.2616  -0.590    0.556
## CountryZAM   -3.4480    13.3109  -0.259    0.796
## CountrySAF   -0.1742     5.6424  -0.031    0.975
## CountryUGA   -3.1160     6.6554  -0.468    0.640
## CountryURT    0.9120     6.2256   0.146    0.884
## CountrySWA   -4.1280    13.3109  -0.310    0.757
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.756e-15  1.289e+01   0.000  1.00000
## CountrySEN   4.128e+00  1.331e+01   0.310  0.75693
## CountryZAI  -6.944e-15  1.823e+01   0.000  1.00000
## CountryMOZ  -3.519e-15  1.578e+01   0.000  1.00000
## CountryMLI   5.506e-01  1.324e+01   0.042  0.96689
## CountryKEN   4.250e-01  1.341e+01   0.032  0.97477
## CountryETH   1.090e+00  1.823e+01   0.060  0.95240
## CountryGUI  -1.781e-14  1.331e+01   0.000  1.00000
## CountryGHA   3.500e+01  1.324e+01   2.643  0.00915 **
## CountryBKF   3.008e+00  1.304e+01   0.231  0.81788
## CountryZIM   1.025e+00  1.352e+01   0.076  0.93966
## CountryZAM   6.800e-01  1.823e+01   0.037  0.97029
## CountrySAF   3.954e+00  1.367e+01   0.289  0.77283
## CountryUGA   1.012e+00  1.412e+01   0.072  0.94296
## CountryURT   5.040e+00  1.392e+01   0.362  0.71786
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.040      5.262   0.958    0.340
## CountrySWA    -5.040     13.921  -0.362    0.718
## CountrySEN    -0.912      6.226  -0.146    0.884
## CountryZAI    -5.040     13.921  -0.362    0.718
## CountryMOZ    -5.040     10.523  -0.479    0.633
## CountryMLI    -4.489      6.076  -0.739    0.461
```

```
## CountryKEN    -4.615      6.444  -0.716    0.475
## CountryETH    -3.950     13.921  -0.284    0.777
## CountryGUI    -5.040      6.226  -0.810    0.420
## CountryGHA    29.958      6.076   4.931 2.27e-06 ***
## CountryBKF    -2.032      5.617  -0.362    0.718
## CountryZIM    -4.015      6.655  -0.603    0.547
## CountryZAM    -4.360     13.921  -0.313    0.755
## CountrySAF    -1.086      6.960  -0.156    0.876
## CountryUGA    -4.028      7.804  -0.516    0.607
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0120     5.7638   0.176    0.861
## CountryURT    4.0280     7.8042   0.516    0.607
## CountrySWA   -1.0120    14.1183  -0.072    0.943
## CountrySEN    3.1160     6.6554   0.468    0.640
## CountryZAI   -1.0120    14.1183  -0.072    0.943
## CountryMOZ   -1.0120    10.7830  -0.094    0.925
## CountryMLI   -0.4614     6.5153  -0.071    0.944
## CountryKEN   -0.5870     6.8603  -0.086    0.932
## CountryETH    0.0780    14.1183   0.006    0.996
## CountryGUI   -1.0120     6.6554  -0.152    0.879
## CountryGHA   33.9858     6.5153   5.216 6.38e-07 ***
## CountryBKF    1.9957     6.0897   0.328    0.744
## CountryZIM    0.0130     7.0591   0.002    0.999
## CountryZAM   -0.3320    14.1183  -0.024    0.981
## CountrySAF    2.9417     7.3474   0.400    0.689
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.9538     4.5567   0.868    0.387
## CountryUGA   -2.9417     7.3474  -0.400    0.689
## CountryURT    1.0862     6.9604   0.156    0.876
## CountrySWA   -3.9538    13.6700  -0.289    0.773
## CountrySEN    0.1743     5.6424   0.031    0.975
## CountryZAI   -3.9537    13.6700  -0.289    0.773
## CountryMOZ   -3.9537    10.1890  -0.388    0.699
## CountryMLI   -3.4032     5.4764  -0.621    0.535
## CountryKEN   -3.5288     5.8826  -0.600    0.550
## CountryETH   -2.8637    13.6700  -0.209    0.834
## CountryGUI   -3.9537     5.6424  -0.701    0.485
## CountryGHA   31.0440     5.4764   5.669 7.83e-08 ***
## CountryBKF   -0.9461     4.9625  -0.191    0.849
## CountryZIM   -2.9288     6.1134  -0.479    0.633
## CountryZAM   -3.2737    13.6700  -0.239    0.811
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6800    12.8882   0.053   0.9580
## CountrySAF    3.2737    13.6700   0.239   0.8111
## CountryUGA    0.3320    14.1183   0.024   0.9813
## CountryURT    4.3600    13.9208   0.313   0.7546
## CountrySWA   -0.6800    18.2267  -0.037   0.9703
## CountrySEN    3.4480    13.3109   0.259   0.7960
## CountryZAI   -0.6800    18.2267  -0.037   0.9703
## CountryMOZ   -0.6800    15.7847  -0.043   0.9657
## CountryMLI   -0.1294    13.2414  -0.010   0.9922
## CountryKEN   -0.2550    13.4145  -0.019   0.9849
## CountryETH    0.4100    18.2267   0.022   0.9821
## CountryGUI   -0.6800    13.3109  -0.051   0.9593
## CountryGHA   34.3178    13.2414   2.592   0.0106 *
## CountryBKF    2.3277    13.0372   0.179   0.8586
## CountryZIM    0.3450    13.5173   0.026   0.9797
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Tz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -34.998   -3.008   -1.012    0.000   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0250     4.0756   0.251    0.802
## CountryZAM   -0.3450    13.5173  -0.026    0.980
## CountrySAF    2.9287     6.1134   0.479    0.633
## CountryUGA   -0.0130     7.0591  -0.002    0.999
## CountryURT    4.0150     6.6554   0.603    0.547
## CountrySWA   -1.0250    13.5173  -0.076    0.940
## CountrySEN    3.1030     5.2616   0.590    0.556
## CountryZAI   -1.0250    13.5173  -0.076    0.940
## CountryMOZ   -1.0250     9.9832  -0.103    0.918
## CountryMLI   -0.4744     5.0832  -0.093    0.926
## CountryKEN   -0.6000     5.5184  -0.109    0.914
## CountryETH    0.0650    13.5173   0.005    0.996
## CountryGUI   -1.0250     5.2616  -0.195    0.846
## CountryGHA   33.9728     5.0832   6.683 5.02e-10 ***
## CountryBKF    1.9827     4.5248   0.438    0.662
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 166.1055)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 23421  on 141  degrees of freedom
## AIC: 1256.5
##
## Number of Fisher Scoring iterations: 2

#======== Glm Tsg per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.2798     1.6499   2.594  0.01049 *
## CountryZIM   12.0632     3.7984   3.176  0.00184 **
## CountryZAM   30.6502    10.9445   2.801  0.00582 **
## CountrySAF    6.4140     4.1659   1.540  0.12589
## CountryUGA    0.7482     5.1122   0.146  0.88384
```

```
## CountryURT    2.5236     4.7151   0.535  0.59335
## CountrySWA   -4.2798    10.9445  -0.391  0.69635
## CountrySEN   -3.6944     3.2444  -1.139  0.25676
## CountryZAI   -4.2798    10.9445  -0.391  0.69635
## CountryMOZ   -1.2798     7.8264  -0.164  0.87034
## CountryMLI   -4.2798     3.0374  -1.409  0.16102
## CountryKEN   10.3436     3.5323   2.928  0.00398 **
## CountryETH    6.1802    10.9445   0.565  0.57318
## CountryGUI   -4.2798     3.2444  -1.319  0.18927
## CountryGHA   -4.2798     3.0374  -1.409  0.16102
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.822e-15  2.550e+00   0.000 1.000000
## CountryBKF   4.280e+00  3.037e+00   1.409 0.161025
## CountryZIM   1.634e+01  4.267e+00   3.830 0.000192 ***
## CountryZAM   3.493e+01  1.112e+01   3.142 0.002043 **
## CountrySAF   1.069e+01  4.597e+00   2.326 0.021441 *
## CountryUGA   5.028e+00  5.469e+00   0.919 0.359516
## CountryURT   6.803e+00  5.100e+00   1.334 0.184385
## CountrySWA   1.775e-14  1.112e+01   0.000 1.000000
## CountrySEN   5.853e-01  3.782e+00   0.155 0.877241
## CountryZAI  -2.223e-15  1.112e+01   0.000 1.000000
## CountryMOZ   3.000e+00  8.064e+00   0.372 0.710444
## CountryMLI   9.383e-15  3.606e+00   0.000 1.000000
## CountryKEN   1.462e+01  4.032e+00   3.627 0.000400 ***
## CountryETH   1.046e+01  1.112e+01   0.941 0.348315
## CountryGUI  -1.164e-16  3.782e+00   0.000 1.000000
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.634e-14  2.794e+00   0.000 1.000000
## CountryGHA  -1.959e-14  3.782e+00   0.000 1.000000
## CountryBKF   4.280e+00  3.244e+00   1.319 0.189268
## CountryZIM   1.634e+01  4.417e+00   3.700 0.000308 ***
## CountryZAM   3.493e+01  1.117e+01   3.126 0.002153 **
## CountrySAF   1.069e+01  4.737e+00   2.258 0.025505 *
## CountryUGA   5.028e+00  5.587e+00   0.900 0.369692
## CountryURT   6.803e+00  5.226e+00   1.302 0.195121
## CountrySWA   1.018e-14  1.117e+01   0.000 1.000000
## CountrySEN   5.853e-01  3.951e+00   0.148 0.882428
## CountryZAI   6.324e-15  1.117e+01   0.000 1.000000
## CountryMOZ   3.000e+00  8.145e+00   0.368 0.713168
## CountryMLI  -1.717e-14  3.782e+00   0.000 1.000000
## CountryKEN   1.462e+01  4.190e+00   3.490 0.000645 ***
## CountryETH   1.046e+01  1.117e+01   0.936 0.350830
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  10.4600    10.8194   0.967    0.335
## CountryGUI  -10.4600    11.1742  -0.936    0.351
## CountryGHA  -10.4600    11.1159  -0.941    0.348
## CountryBKF   -6.1802    10.9445  -0.565    0.573
## CountryZIM    5.8830    11.3475   0.518    0.605
## CountryZAM   24.4700    15.3009   1.599    0.112
## CountrySAF    0.2337    11.4757   0.020    0.984
## CountryUGA   -5.4320    11.8520  -0.458    0.647
## CountryURT   -3.6567    11.6863  -0.313    0.755
## CountrySWA  -10.4600    15.3009  -0.684    0.495
## CountrySEN   -9.8747    11.1742  -0.884    0.378
## CountryZAI  -10.4600    15.3009  -0.684    0.495
## CountryMOZ   -7.4600    13.2510  -0.563    0.574
## CountryMLI  -10.4600    11.1159  -0.941    0.348
## CountryKEN    4.1633    11.2612   0.370    0.712
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.623      3.123   4.682  6.6e-06 ***
## CountryETH    -4.163     11.261  -0.370 0.712155
## CountryGUI   -14.623      4.190  -3.490 0.000645 ***
## CountryGHA   -14.623      4.032  -3.627 0.000400 ***
## CountryBKF   -10.344      3.532  -2.928 0.003976 **
## CountryZIM     1.720      4.633   0.371 0.711037
## CountryZAM    20.307     11.261   1.803 0.073485 .
## CountrySAF    -3.930      4.938  -0.796 0.427528
## CountryUGA    -9.595      5.759  -1.666 0.097908 .
## CountryURT    -7.820      5.410  -1.446 0.150521
## CountrySWA   -14.623     11.261  -1.299 0.196214
## CountrySEN   -14.038      4.190  -3.350 0.001037 **
## CountryZAI   -14.623     11.261  -1.299 0.196214
## CountryMOZ   -11.623      8.263  -1.407 0.161747
## CountryMLI   -14.623      4.032  -3.627 0.000400 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.365e-14  2.550e+00   0.000 1.000000
## CountryKEN   1.462e+01  4.032e+00   3.627 0.000400 ***
## CountryETH   1.046e+01  1.112e+01   0.941 0.348315
## CountryGUI  -3.449e-15  3.782e+00   0.000 1.000000
## CountryGHA  -3.839e-15  3.606e+00   0.000 1.000000
## CountryBKF   4.280e+00  3.037e+00   1.409 0.161025
## CountryZIM   1.634e+01  4.267e+00   3.830 0.000192 ***
## CountryZAM   3.493e+01  1.112e+01   3.142 0.002043 **
```

```
## CountrySAF   1.069e+01  4.597e+00   2.326 0.021441 *
## CountryUGA   5.028e+00  5.469e+00   0.919 0.359516
## CountryURT   6.803e+00  5.100e+00   1.334 0.184385
## CountrySWA  -2.645e-15  1.112e+01   0.000 1.000000
## CountrySEN   5.853e-01  3.782e+00   0.155 0.877241
## CountryZAI   3.185e-15  1.112e+01   0.000 1.000000
## CountryMOZ   3.000e+00  8.064e+00   0.372 0.710444
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    3.000      7.650   0.392   0.6956
## CountryMLI    -3.000      8.064  -0.372   0.7104
## CountryKEN    11.623      8.263   1.407   0.1617
## CountryETH     7.460     13.251   0.563   0.5743
## CountryGUI    -3.000      8.145  -0.368   0.7132
## CountryGHA    -3.000      8.064  -0.372   0.7104
## CountryBKF     1.280      7.826   0.164   0.8703
## CountryZIM    13.343      8.381   1.592   0.1136
## CountryZAM    31.930     13.251   2.410   0.0173 *
## CountrySAF     7.694      8.553   0.899   0.3699
## CountryUGA     2.028      9.052   0.224   0.8231
## CountryURT     3.803      8.834   0.431   0.6675
## CountrySWA    -3.000     13.251  -0.226   0.8212
## CountrySEN    -2.415      8.145  -0.296   0.7673
## CountryZAI    -3.000     13.251  -0.226   0.8212
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.883e-14  1.082e+01   0.000   1.0000
## CountryMOZ   3.000e+00  1.325e+01   0.226   0.8212
## CountryMLI   4.522e-14  1.112e+01   0.000   1.0000
## CountryKEN   1.462e+01  1.126e+01   1.299   0.1962
## CountryETH   1.046e+01  1.530e+01   0.684   0.4953
## CountryGUI   4.630e-14  1.117e+01   0.000   1.0000
## CountryGHA   3.256e-14  1.112e+01   0.000   1.0000
## CountryBKF   4.280e+00  1.094e+01   0.391   0.6964
## CountryZIM   1.634e+01  1.135e+01   1.440   0.1520
## CountryZAM   3.493e+01  1.530e+01   2.283   0.0239 *
## CountrySAF   1.069e+01  1.148e+01   0.932   0.3530
## CountryUGA   5.028e+00  1.185e+01   0.424   0.6720
## CountryURT   6.803e+00  1.169e+01   0.582   0.5614
## CountrySWA   6.981e-14  1.530e+01   0.000   1.0000
## CountrySEN   5.853e-01  1.117e+01   0.052   0.9583
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5853     2.7936   0.210 0.834337
## CountryZAI   -0.5853    11.1742  -0.052 0.958298
## CountryMOZ    2.4147     8.1445   0.296 0.767302
## CountryMLI   -0.5853     3.7825  -0.155 0.877241
## CountryKEN   14.0380     4.1903   3.350 0.001037 **
## CountryETH    9.8747    11.1742   0.884 0.378361
## CountryGUI   -0.5853     3.9507  -0.148 0.882428
## CountryGHA   -0.5853     3.7825  -0.155 0.877241
## CountryBKF    3.6944     3.2444   1.139 0.256757
## CountryZIM   15.7577     4.4170   3.568 0.000493 ***
## CountryZAM   34.3447    11.1742   3.074 0.002540 **
## CountrySAF   10.1084     4.7367   2.134 0.034568 *
## CountryUGA    4.4427     5.5871   0.795 0.427854
## CountryURT    6.2180     5.2263   1.190 0.236140
## CountrySWA   -0.5853    11.1742  -0.052 0.958298
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.065e-13  1.082e+01   0.000   1.0000
## CountrySEN   5.853e-01  1.117e+01   0.052   0.9583
## CountryZAI  -9.969e-14  1.530e+01   0.000   1.0000
## CountryMOZ   3.000e+00  1.325e+01   0.226   0.8212
## CountryMLI  -1.289e-13  1.112e+01   0.000   1.0000
## CountryKEN   1.462e+01  1.126e+01   1.299   0.1962
## CountryETH   1.046e+01  1.530e+01   0.684   0.4953
## CountryGUI  -2.022e-13  1.117e+01   0.000   1.0000
## CountryGHA  -9.150e-14  1.112e+01   0.000   1.0000
## CountryBKF   4.280e+00  1.094e+01   0.391   0.6964
## CountryZIM   1.634e+01  1.135e+01   1.440   0.1520
## CountryZAM   3.493e+01  1.530e+01   2.283   0.0239 *
## CountrySAF   1.069e+01  1.148e+01   0.932   0.3530
## CountryUGA   5.028e+00  1.185e+01   0.424   0.6720
## CountryURT   6.803e+00  1.169e+01   0.582   0.5614
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.803      4.417   1.540   0.1257
## CountrySWA    -6.803     11.686  -0.582   0.5614
## CountrySEN    -6.218      5.226  -1.190   0.2361
## CountryZAI    -6.803     11.686  -0.582   0.5614
## CountryMOZ    -3.803      8.834  -0.431   0.6675
## CountryMLI    -6.803      5.100  -1.334   0.1844
```

```
## CountryKEN     7.820      5.410   1.446   0.1505
## CountryETH     3.657     11.686   0.313   0.7548
## CountryGUI    -6.803      5.226  -1.302   0.1951
## CountryGHA    -6.803      5.100  -1.334   0.1844
## CountryBKF    -2.524      4.715  -0.535   0.5933
## CountryZIM     9.540      5.587   1.707   0.0899 .
## CountryZAM    28.127     11.686   2.407   0.0174 *
## CountrySAF     3.890      5.843   0.666   0.5066
## CountryUGA    -1.775      6.551  -0.271   0.7868
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   5.0280     4.8386   1.039   0.3005
## CountryURT    1.7753     6.5515   0.271   0.7868
## CountrySWA   -5.0280    11.8520  -0.424   0.6720
## CountrySEN   -4.4427     5.5871  -0.795   0.4279
## CountryZAI   -5.0280    11.8520  -0.424   0.6720
## CountryMOZ   -2.0280     9.0521  -0.224   0.8231
## CountryMLI   -5.0280     5.4695  -0.919   0.3595
## CountryKEN    9.5953     5.7591   1.666   0.0979 .
## CountryETH    5.4320    11.8520   0.458   0.6474
## CountryGUI   -5.0280     5.5871  -0.900   0.3697
## CountryGHA   -5.0280     5.4695  -0.919   0.3595
## CountryBKF   -0.7482     5.1122  -0.146   0.8838
## CountryZIM   11.3150     5.9260   1.909   0.0582 .
## CountryZAM   29.9020    11.8520   2.523   0.0127 *
## CountrySAF    5.6658     6.1680   0.919   0.3599
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  10.6938     3.8252   2.796   0.0059 **
## CountryUGA   -5.6658     6.1680  -0.919   0.3599
## CountryURT   -3.8904     5.8431  -0.666   0.5066
## CountrySWA  -10.6938    11.4757  -0.932   0.3530
## CountrySEN  -10.1084     4.7367  -2.134   0.0346 *
## CountryZAI  -10.6937    11.4757  -0.932   0.3530
## CountryMOZ   -7.6937     8.5535  -0.899   0.3699
## CountryMLI  -10.6937     4.5974  -2.326   0.0214 *
## CountryKEN    3.9296     4.9383   0.796   0.4275
## CountryETH   -0.2337    11.4757  -0.020   0.9838
## CountryGUI  -10.6938     4.7367  -2.258   0.0255 *
## CountryGHA  -10.6938     4.5974  -2.326   0.0214 *
## CountryBKF   -6.4140     4.1659  -1.540   0.1259
## CountryZIM    5.6492     5.1321   1.101   0.2729
## CountryZAM   24.2362    11.4757   2.112   0.0365 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    34.93      10.82   3.228  0.00155 **
## CountrySAF    -24.24      11.48  -2.112  0.03645 *
## CountryUGA    -29.90      11.85  -2.523  0.01275 *
## CountryURT    -28.13      11.69  -2.407  0.01739 *
## CountrySWA    -34.93      15.30  -2.283  0.02393 *
## CountrySEN    -34.34      11.17  -3.074  0.00254 **
## CountryZAI    -34.93      15.30  -2.283  0.02393 *
## CountryMOZ    -31.93      13.25  -2.410  0.01726 *
## CountryMLI    -34.93      11.12  -3.142  0.00204 **
## CountryKEN    -20.31      11.26  -1.803  0.07348 .
## CountryETH    -24.47      15.30  -1.599  0.11200
## CountryGUI    -34.93      11.17  -3.126  0.00215 **
## CountryGHA    -34.93      11.12  -3.142  0.00204 **
## CountryBKF    -30.65      10.94  -2.801  0.00582 **
## CountryZIM    -18.59      11.35  -1.638  0.10365
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_Tsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -16.34   -4.28    0.00    0.00   57.34
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   16.343      3.421   4.777 4.42e-06 ***
## CountryZAM    18.587     11.347   1.638 0.103654
## CountrySAF    -5.649      5.132  -1.101 0.272872
## CountryUGA   -11.315      5.926  -1.909 0.058245 .
## CountryURT    -9.540      5.587  -1.707 0.089940 .
## CountrySWA   -16.343     11.347  -1.440 0.152018
## CountrySEN   -15.758      4.417  -3.568 0.000493 ***
## CountryZAI   -16.343     11.347  -1.440 0.152018
## CountryMOZ   -13.343      8.381  -1.592 0.113597
## CountryMLI   -16.343      4.267  -3.830 0.000192 ***
## CountryKEN    -1.720      4.633  -0.371 0.711037
## CountryETH    -5.883     11.347  -0.518 0.604963
## CountryGUI   -16.343      4.417  -3.700 0.000308 ***
## CountryGHA   -16.343      4.267  -3.830 0.000192 ***
## CountryBKF   -12.063      3.798  -3.176 0.001835 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 117.0589)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 16505  on 141  degrees of freedom
## AIC: 1201.9
##
## Number of Fisher Scoring iterations: 2
```

```
#======== Glm TcTv per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.21628    0.16487   1.312    0.192
## CountryZIM  -0.21628    0.37956  -0.570    0.570
## CountryZAM  -0.21628    1.09363  -0.198    0.844
## CountrySAF   0.01997    0.41628   0.048    0.962
## CountryUGA  -0.21628    0.51083  -0.423    0.673
```

```
## CountryURT  -0.21628    0.47116  -0.459    0.647
## CountrySWA  -0.21628    1.09363  -0.198    0.844
## CountrySEN  -0.21628    0.32420  -0.667    0.506
## CountryZAI  -0.21628    1.09363  -0.198    0.844
## CountryMOZ  -0.21628    0.78205  -0.277    0.783
## CountryMLI  -0.21628    0.30351  -0.713    0.477
## CountryKEN   1.82872    0.35297   5.181 7.48e-07 ***
## CountryETH  -0.21628    1.09363  -0.198    0.844
## CountryGUI  -0.21628    0.32420  -0.667    0.506
## CountryGHA  -0.21628    0.30351  -0.713    0.477
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.004e-15  2.548e-01   0.000    1.000
## CountryBKF   2.163e-01  3.035e-01   0.713    0.477
## CountryZIM   2.887e-15  4.264e-01   0.000    1.000
## CountryZAM   5.090e-16  1.111e+00   0.000    1.000
## CountrySAF   2.363e-01  4.594e-01   0.514    0.608
## CountryUGA  -5.441e-15  5.465e-01   0.000    1.000
## CountryURT   2.003e-15  5.096e-01   0.000    1.000
## CountrySWA   2.463e-15  1.111e+00   0.000    1.000
## CountrySEN   1.552e-15  3.780e-01   0.000    1.000
## CountryZAI   2.394e-15  1.111e+00   0.000    1.000
## CountryMOZ   2.004e-15  8.058e-01   0.000    1.000
## CountryMLI   1.173e-15  3.604e-01   0.000    1.000
## CountryKEN   2.045e+00  4.029e-01   5.076  1.2e-06 ***
## CountryETH   4.605e-15  1.111e+00   0.000    1.000
## CountryGUI   1.950e-15  3.780e-01   0.000    1.000
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.237e-15  2.791e-01   0.000    1.000
## CountryGHA  -4.980e-15  3.780e-01   0.000    1.000
## CountryBKF   2.163e-01  3.242e-01   0.667    0.506
## CountryZIM  -3.309e-15  4.414e-01   0.000    1.000
## CountryZAM   2.952e-14  1.117e+00   0.000    1.000
## CountrySAF   2.362e-01  4.733e-01   0.499    0.618
## CountryUGA  -6.271e-15  5.583e-01   0.000    1.000
## CountryURT  -6.890e-15  5.222e-01   0.000    1.000
## CountrySWA  -1.534e-14  1.117e+00   0.000    1.000
## CountrySEN  -3.293e-15  3.948e-01   0.000    1.000
## CountryZAI  -6.731e-15  1.117e+00   0.000    1.000
## CountryMOZ  -1.760e-15  8.138e-01   0.000    1.000
## CountryMLI  -4.293e-15  3.780e-01   0.000    1.000
## CountryKEN   2.045e+00  4.187e-01   4.884 2.78e-06 ***
## CountryETH   2.007e-15  1.117e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.162e-14  1.081e+00   0.000   1.0000
## CountryGUI   1.175e-14  1.117e+00   0.000   1.0000
## CountryGHA   1.184e-14  1.111e+00   0.000   1.0000
## CountryBKF   2.163e-01  1.094e+00   0.198   0.8435
## CountryZIM   1.329e-14  1.134e+00   0.000   1.0000
## CountryZAM   2.493e-14  1.529e+00   0.000   1.0000
## CountrySAF   2.363e-01  1.147e+00   0.206   0.8371
## CountryUGA   1.201e-14  1.184e+00   0.000   1.0000
## CountryURT   1.389e-14  1.168e+00   0.000   1.0000
## CountrySWA   1.166e-14  1.529e+00   0.000   1.0000
## CountrySEN   1.064e-14  1.117e+00   0.000   1.0000
## CountryZAI   9.636e-15  1.529e+00   0.000   1.0000
## CountryMOZ   1.229e-14  1.324e+00   0.000   1.0000
## CountryMLI   1.196e-14  1.111e+00   0.000   1.0000
## CountryKEN   2.045e+00  1.125e+00   1.817   0.0713 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.0450     0.3121   6.552 9.86e-10 ***
## CountryETH   -2.0450     1.1253  -1.817 0.071289 .
## CountryGUI   -2.0450     0.4187  -4.884 2.78e-06 ***
## CountryGHA   -2.0450     0.4029  -5.076 1.20e-06 ***
## CountryBKF   -1.8287     0.3530  -5.181 7.48e-07 ***
## CountryZIM   -2.0450     0.4629  -4.418 1.97e-05 ***
## CountryZAM   -2.0450     1.1253  -1.817 0.071289 .
## CountrySAF   -1.8087     0.4935  -3.665 0.000349 ***
## CountryUGA   -2.0450     0.5755  -3.554 0.000517 ***
## CountryURT   -2.0450     0.5406  -3.783 0.000228 ***
## CountrySWA   -2.0450     1.1253  -1.817 0.071289 .
## CountrySEN   -2.0450     0.4187  -4.884 2.78e-06 ***
## CountryZAI   -2.0450     1.1253  -1.817 0.071289 .
## CountryMOZ   -2.0450     0.8257  -2.477 0.014446 *
## CountryMLI   -2.0450     0.4029  -5.076 1.20e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.333e-15  2.548e-01   0.000    1.000
## CountryKEN   2.045e+00  4.029e-01   5.076  1.2e-06 ***
## CountryETH  -4.973e-15  1.111e+00   0.000    1.000
## CountryGUI  -2.874e-16  3.780e-01   0.000    1.000
## CountryGHA   3.881e-15  3.604e-01   0.000    1.000
## CountryBKF   2.163e-01  3.035e-01   0.713    0.477
```

```
## CountryZIM  -1.206e-15  4.264e-01   0.000    1.000
## CountryZAM  -2.583e-15  1.111e+00   0.000    1.000
## CountrySAF   2.362e-01  4.594e-01   0.514    0.608
## CountryUGA  -6.729e-16  5.465e-01   0.000    1.000
## CountryURT  -2.343e-19  5.096e-01   0.000    1.000
## CountrySWA  -2.345e-16  1.111e+00   0.000    1.000
## CountrySEN  -1.728e-15  3.780e-01   0.000    1.000
## CountryZAI  -6.743e-16  1.111e+00   0.000    1.000
## CountryMOZ  -1.055e-15  8.058e-01   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.042e-16  7.645e-01   0.000   1.0000
## CountryMLI  -9.460e-16  8.058e-01   0.000   1.0000
## CountryKEN   2.045e+00  8.257e-01   2.477   0.0144 *
## CountryETH   1.538e-15  1.324e+00   0.000   1.0000
## CountryGUI  -1.131e-14  8.138e-01   0.000   1.0000
## CountryGHA   2.303e-15  8.058e-01   0.000   1.0000
## CountryBKF   2.163e-01  7.820e-01   0.277   0.7825
## CountryZIM   1.313e-15  8.374e-01   0.000   1.0000
## CountryZAM   5.483e-16  1.324e+00   0.000   1.0000
## CountrySAF   2.363e-01  8.547e-01   0.276   0.7826
## CountryUGA  -2.056e-16  9.045e-01   0.000   1.0000
## CountryURT   1.663e-15  8.827e-01   0.000   1.0000
## CountrySWA   9.890e-16  1.324e+00   0.000   1.0000
## CountrySEN   1.972e-15  8.138e-01   0.000   1.0000
## CountryZAI   5.439e-16  1.324e+00   0.000   1.0000
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.182e-15  1.081e+00   0.000   1.0000
## CountryMOZ  -7.572e-15  1.324e+00   0.000   1.0000
## CountryMLI  -4.622e-15  1.111e+00   0.000   1.0000
## CountryKEN   2.045e+00  1.125e+00   1.817   0.0713 .
## CountryETH  -3.152e-14  1.529e+00   0.000   1.0000
## CountryGUI  -7.254e-15  1.117e+00   0.000   1.0000
## CountryGHA  -4.887e-15  1.111e+00   0.000   1.0000
## CountryBKF   2.163e-01  1.094e+00   0.198   0.8435
## CountryZIM  -5.336e-15  1.134e+00   0.000   1.0000
## CountryZAM   5.839e-16  1.529e+00   0.000   1.0000
## CountrySAF   2.362e-01  1.147e+00   0.206   0.8371
## CountryUGA  -5.733e-15  1.184e+00   0.000   1.0000
## CountryURT  -5.431e-15  1.168e+00   0.000   1.0000
## CountrySWA  -7.103e-15  1.529e+00   0.000   1.0000
## CountrySEN  -8.370e-15  1.117e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.988e-16  2.791e-01   0.000    1.000
## CountryZAI  -4.742e-15  1.117e+00   0.000    1.000
## CountryMOZ  -9.054e-16  8.138e-01   0.000    1.000
## CountryMLI   2.786e-17  3.780e-01   0.000    1.000
## CountryKEN   2.045e+00  4.187e-01   4.884 2.78e-06 ***
## CountryETH   1.336e-14  1.117e+00   0.000    1.000
## CountryGUI   1.923e-15  3.948e-01   0.000    1.000
## CountryGHA   2.425e-15  3.780e-01   0.000    1.000
## CountryBKF   2.163e-01  3.242e-01   0.667    0.506
## CountryZIM   2.211e-15  4.414e-01   0.000    1.000
## CountryZAM   3.167e-16  1.117e+00   0.000    1.000
## CountrySAF   2.363e-01  4.733e-01   0.499    0.618
## CountryUGA   2.782e-15  5.583e-01   0.000    1.000
## CountryURT   2.033e-15  5.222e-01   0.000    1.000
## CountrySWA   2.494e-15  1.117e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.131e-14  1.081e+00   0.000   1.0000
## CountrySEN  -1.177e-14  1.117e+00   0.000   1.0000
## CountryZAI  -1.048e-14  1.529e+00   0.000   1.0000
## CountryMOZ  -1.222e-14  1.324e+00   0.000   1.0000
## CountryMLI  -1.773e-14  1.111e+00   0.000   1.0000
## CountryKEN   2.045e+00  1.125e+00   1.817   0.0713 .
## CountryETH  -8.075e-15  1.529e+00   0.000   1.0000
## CountryGUI  -8.970e-15  1.117e+00   0.000   1.0000
## CountryGHA  -9.031e-15  1.111e+00   0.000   1.0000
## CountryBKF   2.163e-01  1.094e+00   0.198   0.8435
## CountryZIM  -8.851e-15  1.134e+00   0.000   1.0000
## CountryZAM  -6.940e-15  1.529e+00   0.000   1.0000
## CountrySAF   2.362e-01  1.147e+00   0.206   0.8371
## CountryUGA  -8.357e-15  1.184e+00   0.000   1.0000
## CountryURT  -8.574e-15  1.168e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.621e-15  4.414e-01   0.000 1.000000
## CountrySWA   4.171e-15  1.168e+00   0.000 1.000000
## CountrySEN   9.215e-15  5.222e-01   0.000 1.000000
## CountryZAI   9.200e-15  1.168e+00   0.000 1.000000
## CountryMOZ   3.360e-15  8.827e-01   0.000 1.000000
## CountryMLI   7.216e-15  5.096e-01   0.000 1.000000
```

```
## CountryKEN   2.045e+00  5.406e-01   3.783 0.000228 ***
## CountryETH   5.840e-15  1.168e+00   0.000 1.000000
## CountryGUI   9.271e-15  5.222e-01   0.000 1.000000
## CountryGHA   9.174e-15  5.096e-01   0.000 1.000000
## CountryBKF   2.163e-01  4.712e-01   0.459 0.646913
## CountryZIM   8.736e-15  5.583e-01   0.000 1.000000
## CountryZAM   8.956e-15  1.168e+00   0.000 1.000000
## CountrySAF   2.363e-01  5.839e-01   0.405 0.686367
## CountryUGA   8.126e-15  6.547e-01   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.629e-16  4.835e-01   0.000 1.000000
## CountryURT   1.053e-15  6.547e-01   0.000 1.000000
## CountrySWA  -6.275e-16  1.184e+00   0.000 1.000000
## CountrySEN   9.718e-16  5.583e-01   0.000 1.000000
## CountryZAI   3.860e-14  1.184e+00   0.000 1.000000
## CountryMOZ   2.023e-15  9.045e-01   0.000 1.000000
## CountryMLI  -5.353e-16  5.465e-01   0.000 1.000000
## CountryKEN   2.045e+00  5.755e-01   3.554 0.000517 ***
## CountryETH   1.094e-15  1.184e+00   0.000 1.000000
## CountryGUI  -6.636e-16  5.583e-01   0.000 1.000000
## CountryGHA  -1.739e-15  5.465e-01   0.000 1.000000
## CountryBKF   2.163e-01  5.108e-01   0.423 0.672659
## CountryZIM  -7.119e-16  5.922e-01   0.000 1.000000
## CountryZAM  -9.966e-15  1.184e+00   0.000 1.000000
## CountrySAF   2.362e-01  6.163e-01   0.383 0.702065
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.23625    0.38224   0.618 0.537524
## CountryUGA  -0.23625    0.61634  -0.383 0.702065
## CountryURT  -0.23625    0.58388  -0.405 0.686367
## CountrySWA  -0.23625    1.14671  -0.206 0.837069
## CountrySEN  -0.23625    0.47332  -0.499 0.618459
## CountryZAI  -0.23625    1.14671  -0.206 0.837069
## CountryMOZ  -0.23625    0.85471  -0.276 0.782637
## CountryMLI  -0.23625    0.45939  -0.514 0.607870
## CountryKEN   1.80875    0.49347   3.665 0.000349 ***
## CountryETH  -0.23625    1.14671  -0.206 0.837069
## CountryGUI  -0.23625    0.47332  -0.499 0.618459
## CountryGHA  -0.23625    0.45939  -0.514 0.607870
## CountryBKF  -0.01997    0.41628  -0.048 0.961804
## CountryZIM  -0.23625    0.51282  -0.461 0.645735
## CountryZAM  -0.23625    1.14671  -0.206 0.837069
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.848e-14  1.081e+00   0.000   1.0000
## CountrySAF   2.363e-01  1.147e+00   0.206   0.8371
## CountryUGA   3.913e-14  1.184e+00   0.000   1.0000
## CountryURT   3.890e-14  1.168e+00   0.000   1.0000
## CountrySWA   8.231e-15  1.529e+00   0.000   1.0000
## CountrySEN   3.836e-14  1.117e+00   0.000   1.0000
## CountryZAI   3.776e-14  1.529e+00   0.000   1.0000
## CountryMOZ   3.947e-14  1.324e+00   0.000   1.0000
## CountryMLI   3.869e-14  1.111e+00   0.000   1.0000
## CountryKEN   2.045e+00  1.125e+00   1.817   0.0713 .
## CountryETH   3.036e-14  1.529e+00   0.000   1.0000
## CountryGUI   3.866e-14  1.117e+00   0.000   1.0000
## CountryGHA   3.831e-14  1.111e+00   0.000   1.0000
## CountryBKF   2.163e-01  1.094e+00   0.198   0.8435
## CountryZIM   3.880e-14  1.134e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TcTv) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -2.0450  -0.2163   0.0000   0.0000   7.9550
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.955e-15  3.419e-01   0.000    1.000
## CountryZAM  -1.108e-14  1.134e+00   0.000    1.000
## CountrySAF   2.362e-01  5.128e-01   0.461    0.646
## CountryUGA  -5.150e-15  5.922e-01   0.000    1.000
## CountryURT  -2.163e-14  5.583e-01   0.000    1.000
## CountrySWA  -1.589e-14  1.134e+00   0.000    1.000
## CountrySEN  -5.951e-15  4.414e-01   0.000    1.000
## CountryZAI  -1.082e-14  1.134e+00   0.000    1.000
## CountryMOZ  -1.477e-14  8.374e-01   0.000    1.000
## CountryMLI  -5.405e-15  4.264e-01   0.000    1.000
## CountryKEN   2.045e+00  4.629e-01   4.418 1.97e-05 ***
## CountryETH  -6.762e-15  1.134e+00   0.000    1.000
## CountryGUI  -5.751e-15  4.414e-01   0.000    1.000
## CountryGHA  -5.573e-15  4.264e-01   0.000    1.000
## CountryBKF   2.163e-01  3.796e-01   0.570    0.570
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.168838)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 164.81  on 141  degrees of freedom
## AIC: 483.28
##
## Number of Fisher Scoring iterations: 2

#======== Glm TcTz per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.35860    0.40932   0.876    0.382
## CountryZIM  -0.35860    0.94232  -0.381    0.704
## CountryZAM  -0.35860    2.71512  -0.132    0.895
## CountrySAF  -0.35860    1.03348  -0.347    0.729
## CountryUGA  -0.35860    1.26823  -0.283    0.778
```

```
## CountryURT  -0.12360    1.16973  -0.106    0.916
## CountrySWA  -0.35860    2.71512  -0.132    0.895
## CountrySEN  -0.35860    0.80488  -0.446    0.657
## CountryZAI  -0.35860    2.71512  -0.132    0.895
## CountryMOZ  -0.35860    1.94157  -0.185    0.854
## CountryMLI  -0.35860    0.75351  -0.476    0.635
## CountryKEN  -0.02444    0.87630  -0.028    0.978
## CountryETH  -0.35860    2.71512  -0.132    0.895
## CountryGUI  -0.35860    0.80488  -0.446    0.657
## CountryGHA   3.43084    0.75351   4.553 1.13e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.7894     0.6326   5.990 1.66e-08 ***
## CountryBKF   -3.4308     0.7535  -4.553 1.13e-05 ***
## CountryZIM   -3.7894     1.0586  -3.580 0.000472 ***
## CountryZAM   -3.7894     2.7576  -1.374 0.171571
## CountrySAF   -3.7894     1.1405  -3.323 0.001136 **
## CountryUGA   -3.7894     1.3569  -2.793 0.005952 **
## CountryURT   -3.5544     1.2653  -2.809 0.005672 **
## CountrySWA   -3.7894     2.7576  -1.374 0.171571
## CountrySEN   -3.7894     0.9384  -4.038 8.80e-05 ***
## CountryZAI   -3.7894     2.7576  -1.374 0.171571
## CountryMOZ   -3.7894     2.0006  -1.894 0.060253 .
## CountryMLI   -3.7894     0.8947  -4.235 4.09e-05 ***
## CountryKEN   -3.4553     1.0003  -3.454 0.000729 ***
## CountryETH   -3.7894     2.7576  -1.374 0.171571
## CountryGUI   -3.7894     0.9384  -4.038 8.80e-05 ***
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.209e-15  6.930e-01   0.000    1.000
## CountryGHA   3.789e+00  9.384e-01   4.038  8.8e-05 ***
## CountryBKF   3.586e-01  8.049e-01   0.446    0.657
## CountryZIM  -2.041e-16  1.096e+00   0.000    1.000
## CountryZAM   5.004e-15  2.772e+00   0.000    1.000
## CountrySAF  -4.096e-16  1.175e+00   0.000    1.000
## CountryUGA  -5.811e-16  1.386e+00   0.000    1.000
## CountryURT   2.350e-01  1.297e+00   0.181    0.856
## CountrySWA  -8.210e-16  2.772e+00   0.000    1.000
## CountrySEN  -2.249e-16  9.801e-01   0.000    1.000
## CountryZAI   5.601e-16  2.772e+00   0.000    1.000
## CountryMOZ  -5.156e-16  2.021e+00   0.000    1.000
## CountryMLI  -3.186e-16  9.384e-01   0.000    1.000
## CountryKEN   3.342e-01  1.040e+00   0.321    0.748
## CountryETH  -3.411e-15  2.772e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.535e-16  2.684e+00   0.000    1.000
## CountryGUI   3.075e-15  2.772e+00   0.000    1.000
## CountryGHA   3.789e+00  2.758e+00   1.374    0.172
## CountryBKF   3.586e-01  2.715e+00   0.132    0.895
## CountryZIM   1.333e-15  2.815e+00   0.000    1.000
## CountryZAM   1.441e-15  3.796e+00   0.000    1.000
## CountrySAF  -7.151e-16  2.847e+00   0.000    1.000
## CountryUGA  -2.882e-16  2.940e+00   0.000    1.000
## CountryURT   2.350e-01  2.899e+00   0.081    0.936
## CountrySWA  -1.979e-15  3.796e+00   0.000    1.000
## CountrySEN  -8.517e-16  2.772e+00   0.000    1.000
## CountryZAI  -1.156e-15  3.796e+00   0.000    1.000
## CountryMOZ   1.420e-15  3.287e+00   0.000    1.000
## CountryMLI  -7.274e-16  2.758e+00   0.000    1.000
## CountryKEN   3.342e-01  2.794e+00   0.120    0.905
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.33417    0.77483   0.431 0.666925
## CountryETH  -0.33417    2.79369  -0.120 0.904958
## CountryGUI  -0.33417    1.03954  -0.321 0.748341
## CountryGHA   3.45528    1.00030   3.454 0.000729 ***
## CountryBKF   0.02444    0.87630   0.028 0.977791
## CountryZIM  -0.33417    1.14926  -0.291 0.771656
## CountryZAM  -0.33417    2.79369  -0.120 0.904958
## CountrySAF  -0.33417    1.22511  -0.273 0.785434
## CountryUGA  -0.33417    1.42871  -0.234 0.815407
## CountryURT  -0.09917    1.34204  -0.074 0.941201
## CountrySWA  -0.33417    2.79369  -0.120 0.904958
## CountrySEN  -0.33417    1.03954  -0.321 0.748341
## CountryZAI  -0.33417    2.79369  -0.120 0.904958
## CountryMOZ  -0.33417    2.05001  -0.163 0.870746
## CountryMLI  -0.33417    1.00030  -0.334 0.738826
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.089e-16  6.326e-01   0.000    1.000
## CountryKEN   3.342e-01  1.000e+00   0.334    0.739
## CountryETH   1.768e-15  2.758e+00   0.000    1.000
## CountryGUI  -6.666e-16  9.384e-01   0.000    1.000
## CountryGHA   3.789e+00  8.947e-01   4.235 4.09e-05 ***
## CountryBKF   3.586e-01  7.535e-01   0.476    0.635
## CountryZIM  -5.254e-16  1.059e+00   0.000    1.000
## CountryZAM  -6.858e-16  2.758e+00   0.000    1.000
```

```
## CountrySAF  -1.921e-16  1.141e+00   0.000    1.000
## CountryUGA  -8.262e-16  1.357e+00   0.000    1.000
## CountryURT   2.350e-01  1.265e+00   0.186    0.853
## CountrySWA  -1.292e-15  2.758e+00   0.000    1.000
## CountrySEN  -9.176e-16  9.384e-01   0.000    1.000
## CountryZAI  -1.251e-16  2.758e+00   0.000    1.000
## CountryMOZ  -1.138e-16  2.001e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.451e-15  1.898e+00   0.000   1.0000
## CountryMLI  -3.412e-15  2.001e+00   0.000   1.0000
## CountryKEN   3.342e-01  2.050e+00   0.163   0.8707
## CountryETH  -2.103e-15  3.287e+00   0.000   1.0000
## CountryGUI  -4.523e-15  2.021e+00   0.000   1.0000
## CountryGHA   3.789e+00  2.001e+00   1.894   0.0603 .
## CountryBKF   3.586e-01  1.942e+00   0.185   0.8537
## CountryZIM  -2.962e-15  2.079e+00   0.000   1.0000
## CountryZAM  -4.012e-15  3.287e+00   0.000   1.0000
## CountrySAF  -3.407e-15  2.122e+00   0.000   1.0000
## CountryUGA  -2.651e-15  2.246e+00   0.000   1.0000
## CountryURT   2.350e-01  2.192e+00   0.107   0.9148
## CountrySWA  -7.183e-15  3.287e+00   0.000   1.0000
## CountrySEN  -3.305e-15  2.021e+00   0.000   1.0000
## CountryZAI  -1.700e-15  3.287e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.585e-15  2.684e+00   0.000    1.000
## CountryMOZ   1.695e-16  3.287e+00   0.000    1.000
## CountryMLI  -1.507e-15  2.758e+00   0.000    1.000
## CountryKEN   3.342e-01  2.794e+00   0.120    0.905
## CountryETH   8.687e-15  3.796e+00   0.000    1.000
## CountryGUI  -9.789e-16  2.772e+00   0.000    1.000
## CountryGHA   3.789e+00  2.758e+00   1.374    0.172
## CountryBKF   3.586e-01  2.715e+00   0.132    0.895
## CountryZIM  -3.095e-15  2.815e+00   0.000    1.000
## CountryZAM  -4.302e-15  3.796e+00   0.000    1.000
## CountrySAF  -4.216e-15  2.847e+00   0.000    1.000
## CountryUGA  -4.170e-15  2.940e+00   0.000    1.000
## CountryURT   2.350e-01  2.899e+00   0.081    0.936
## CountrySWA  -3.049e-15  3.796e+00   0.000    1.000
## CountrySEN  -3.741e-15  2.772e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.874e-15  6.930e-01   0.000    1.000
## CountryZAI   9.262e-16  2.772e+00   0.000    1.000
## CountryMOZ   3.636e-15  2.021e+00   0.000    1.000
## CountryMLI   1.727e-15  9.384e-01   0.000    1.000
## CountryKEN   3.342e-01  1.040e+00   0.321    0.748
## CountryETH   2.669e-15  2.772e+00   0.000    1.000
## CountryGUI   8.571e-16  9.801e-01   0.000    1.000
## CountryGHA   3.789e+00  9.384e-01   4.038  8.8e-05 ***
## CountryBKF   3.586e-01  8.049e-01   0.446    0.657
## CountryZIM   1.289e-15  1.096e+00   0.000    1.000
## CountryZAM  -3.120e-14  2.772e+00   0.000    1.000
## CountrySAF   1.648e-15  1.175e+00   0.000    1.000
## CountryUGA   1.238e-15  1.386e+00   0.000    1.000
## CountryURT   2.350e-01  1.297e+00   0.181    0.856
## CountrySWA   9.110e-16  2.772e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept) -7.527e-15  2.684e+00   0.000    1.000
## CountrySEN   1.102e-14  2.772e+00   0.000    1.000
## CountryZAI   6.513e-15  3.796e+00   0.000    1.000
## CountryMOZ   1.088e-14  3.287e+00   0.000    1.000
## CountryMLI   5.711e-15  2.758e+00   0.000    1.000
## CountryKEN   3.342e-01  2.794e+00   0.120    0.905
## CountryETH   1.209e-14  3.796e+00   0.000    1.000
## CountryGUI   8.285e-15  2.772e+00   0.000    1.000
## CountryGHA   3.789e+00  2.758e+00   1.374    0.172
## CountryBKF   3.586e-01  2.715e+00   0.132    0.895
## CountryZIM   8.210e-15  2.815e+00   0.000    1.000
## CountryZAM   5.515e-15  3.796e+00   0.000    1.000
## CountrySAF   9.175e-15  2.847e+00   0.000    1.000
## CountryUGA   6.696e-15  2.940e+00   0.000    1.000
## CountryURT   2.350e-01  2.899e+00   0.081    0.936
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.23500    1.09577   0.214  0.83050
## CountrySWA  -0.23500    2.89915  -0.081  0.93551
## CountrySEN  -0.23500    1.29654  -0.181  0.85643
## CountryZAI  -0.23500    2.89915  -0.081  0.93551
## CountryMOZ  -0.23500    2.19155  -0.107  0.91476
## CountryMLI  -0.23500    1.26529  -0.186  0.85292
## CountryKEN   0.09917    1.34204   0.074  0.94120
## CountryETH  -0.23500    2.89915  -0.081  0.93551
## CountryGUI  -0.23500    1.29654  -0.181  0.85643
## CountryGHA   3.55444    1.26529   2.809  0.00567 **
## CountryBKF   0.12360    1.16973   0.106  0.91599
## CountryZIM  -0.23500    1.38606  -0.170  0.86561
```

```
## CountryZAM  -0.23500    2.89915  -0.081  0.93551
## CountrySAF  -0.23500    1.44957  -0.162  0.87145
## CountryUGA  -0.23500    1.62530  -0.145  0.88524
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.222e-15  1.200e+00   0.000  1.00000
## CountryURT   2.350e-01  1.625e+00   0.145  0.88524
## CountrySWA   1.962e-15  2.940e+00   0.000  1.00000
## CountrySEN   4.112e-15  1.386e+00   0.000  1.00000
## CountryZAI  -4.143e-15  2.940e+00   0.000  1.00000
## CountryMOZ  -8.805e-17  2.246e+00   0.000  1.00000
## CountryMLI  -3.170e-16  1.357e+00   0.000  1.00000
## CountryKEN   3.342e-01  1.429e+00   0.234  0.81541
## CountryETH  -1.171e-15  2.940e+00   0.000  1.00000
## CountryGUI   1.119e-15  1.386e+00   0.000  1.00000
## CountryGHA   3.789e+00  1.357e+00   2.793  0.00595 **
## CountryBKF   3.586e-01  1.268e+00   0.283  0.77778
## CountryZIM   1.815e-15  1.470e+00   0.000  1.00000
## CountryZAM   9.729e-16  2.940e+00   0.000  1.00000
## CountrySAF   1.768e-15  1.530e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
```

```
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.492e-15  9.490e-01   0.000  1.00000
## CountryUGA  -2.430e-15  1.530e+00   0.000  1.00000
## CountryURT   2.350e-01  1.450e+00   0.162  0.87145
## CountrySWA  -7.619e-16  2.847e+00   0.000  1.00000
## CountrySEN  -5.865e-16  1.175e+00   0.000  1.00000
## CountryZAI  -4.824e-15  2.847e+00   0.000  1.00000
## CountryMOZ   8.483e-17  2.122e+00   0.000  1.00000
## CountryMLI  -1.449e-15  1.141e+00   0.000  1.00000
## CountryKEN   3.342e-01  1.225e+00   0.273  0.78543
## CountryETH   5.042e-15  2.847e+00   0.000  1.00000
## CountryGUI   1.249e-16  1.175e+00   0.000  1.00000
## CountryGHA   3.789e+00  1.141e+00   3.323  0.00114 **
## CountryBKF   3.586e-01  1.033e+00   0.347  0.72912
## CountryZIM  -1.675e-15  1.273e+00   0.000  1.00000
## CountryZAM  -8.464e-16  2.847e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.631e-15  2.684e+00   0.000    1.000
## CountrySAF   3.665e-15  2.847e+00   0.000    1.000
## CountryUGA   4.773e-15  2.940e+00   0.000    1.000
## CountryURT   2.350e-01  2.899e+00   0.081    0.936
## CountrySWA  -3.759e-15  3.796e+00   0.000    1.000
## CountrySEN   3.169e-15  2.772e+00   0.000    1.000
## CountryZAI   6.544e-15  3.796e+00   0.000    1.000
## CountryMOZ   2.690e-15  3.287e+00   0.000    1.000
## CountryMLI   5.472e-15  2.758e+00   0.000    1.000
## CountryKEN   3.342e-01  2.794e+00   0.120    0.905
## CountryETH   8.794e-15  3.796e+00   0.000    1.000
## CountryGUI   5.672e-15  2.772e+00   0.000    1.000
## CountryGHA   3.789e+00  2.758e+00   1.374    0.172
## CountryBKF   3.586e-01  2.715e+00   0.132    0.895
## CountryZIM   4.105e-15  2.815e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.194e-15  8.488e-01   0.000 1.000000
## CountryZAM  -5.394e-15  2.815e+00   0.000 1.000000
## CountrySAF  -3.226e-16  1.273e+00   0.000 1.000000
## CountryUGA  -2.595e-15  1.470e+00   0.000 1.000000
## CountryURT   2.350e-01  1.386e+00   0.170 0.865610
```

```
## CountrySWA  -5.910e-15  2.815e+00   0.000 1.000000
## CountrySEN  -3.719e-15  1.096e+00   0.000 1.000000
## CountryZAI   1.144e-16  2.815e+00   0.000 1.000000
## CountryMOZ   4.144e-15  2.079e+00   0.000 1.000000
## CountryMLI  -5.334e-16  1.059e+00   0.000 1.000000
## CountryKEN   3.342e-01  1.149e+00   0.291 0.771656
## CountryETH  -2.672e-15  2.815e+00   0.000 1.000000
## CountryGUI  -3.155e-15  1.096e+00   0.000 1.000000
## CountryGHA   3.789e+00  1.059e+00   3.580 0.000472 ***
## CountryBKF   3.586e-01  9.423e-01   0.381 0.704107
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2

#======== Glm TcTsg per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1012     0.3926   0.258  0.79701
## CountryZIM    1.5788     0.9037   1.747  0.08281 .
## CountryZAM    7.4288     2.6039   2.853  0.00498 **
## CountrySAF    0.3538     0.9912   0.357  0.72163
## CountryUGA    0.1108     1.2163   0.091  0.92752
## CountryURT    4.5622     1.1218   4.067 7.89e-05 ***
## CountrySWA   -0.1012     2.6039  -0.039  0.96906
## CountrySEN   -0.1012     0.7719  -0.131  0.89592
## CountryZAI   -0.1012     2.6039  -0.039  0.96906
## CountryMOZ   -0.1012     1.8621  -0.054  0.95675
## CountryMLI   -0.1012     0.7227  -0.140  0.88887
## CountryKEN    4.2872     0.8404   5.101 1.07e-06 ***
## CountryETH    0.5488     2.6039   0.211  0.83337
## CountryGUI   -0.1012     0.7719  -0.131  0.89592
```

```
## CountryGHA   -0.1012     0.7227  -0.140  0.88887
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.756e-15  6.067e-01   0.000 1.000000
## CountryBKF   1.012e-01  7.227e-01   0.140 0.888870
## CountryZIM   1.680e+00  1.015e+00   1.655 0.100202
## CountryZAM   7.530e+00  2.645e+00   2.847 0.005070 **
## CountrySAF   4.550e-01  1.094e+00   0.416 0.678059
## CountryUGA   2.120e-01  1.301e+00   0.163 0.870820
## CountryURT   4.663e+00  1.213e+00   3.843 0.000183 ***
## CountrySWA   5.657e-15  2.645e+00   0.000 1.000000
## CountrySEN   1.014e-14  8.999e-01   0.000 1.000000
## CountryZAI   7.705e-15  2.645e+00   0.000 1.000000
## CountryMOZ   1.346e-14  1.919e+00   0.000 1.000000
## CountryMLI   4.198e-15  8.581e-01   0.000 1.000000
## CountryKEN   4.388e+00  9.593e-01   4.574 1.04e-05 ***
## CountryETH   6.500e-01  2.645e+00   0.246 0.806215
## CountryGUI   3.901e-15  8.999e-01   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.850e-15  6.646e-01   0.000 1.000000
## CountryGHA  -5.634e-15  8.999e-01   0.000 1.000000
## CountryBKF   1.012e-01  7.719e-01   0.131 0.895920
## CountryZIM   1.680e+00  1.051e+00   1.599 0.112141
## CountryZAM   7.530e+00  2.659e+00   2.832 0.005298 **
## CountrySAF   4.550e-01  1.127e+00   0.404 0.687016
## CountryUGA   2.120e-01  1.329e+00   0.159 0.873517
## CountryURT   4.663e+00  1.243e+00   3.750 0.000257 ***
## CountrySWA  -3.896e-15  2.659e+00   0.000 1.000000
## CountrySEN  -4.078e-15  9.400e-01   0.000 1.000000
## CountryZAI  -7.877e-15  2.659e+00   0.000 1.000000
## CountryMOZ  -5.226e-15  1.938e+00   0.000 1.000000
## CountryMLI  -1.878e-15  8.999e-01   0.000 1.000000
## CountryKEN   4.388e+00  9.970e-01   4.402 2.11e-05 ***
## CountryETH   6.500e-01  2.659e+00   0.244 0.807206
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6500     2.5742   0.253   0.8010
## CountryGUI   -0.6500     2.6586  -0.244   0.8072
## CountryGHA   -0.6500     2.6447  -0.246   0.8062
## CountryBKF   -0.5488     2.6039  -0.211   0.8334
## CountryZIM    1.0300     2.6998   0.382   0.7034
## CountryZAM    6.8800     3.6404   1.890   0.0608 .
## CountrySAF   -0.1950     2.7303  -0.071   0.9432
## CountryUGA   -0.4380     2.8199  -0.155   0.8768
## CountryURT    4.0133     2.7804   1.443   0.1511
## CountrySWA   -0.6500     3.6404  -0.179   0.8585
## CountrySEN   -0.6500     2.6586  -0.244   0.8072
## CountryZAI   -0.6500     3.6404  -0.179   0.8585
## CountryMOZ   -0.6500     3.1527  -0.206   0.8370
## CountryMLI   -0.6500     2.6447  -0.246   0.8062
## CountryKEN    3.7383     2.6793   1.395   0.1651
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.3883     0.7431   5.905 2.51e-08 ***
## CountryETH   -3.7383     2.6793  -1.395  0.16513
## CountryGUI   -4.3883     0.9970  -4.402 2.11e-05 ***
## CountryGHA   -4.3883     0.9593  -4.574 1.04e-05 ***
```

```
## CountryBKF   -4.2872     0.8404  -5.101 1.07e-06 ***
## CountryZIM   -2.7083     1.1022  -2.457  0.01522 *
## CountryZAM    3.1417     2.6793   1.173  0.24294
## CountrySAF   -3.9333     1.1749  -3.348  0.00105 **
## CountryUGA   -4.1763     1.3702  -3.048  0.00275 **
## CountryURT    0.2750     1.2871   0.214  0.83112
## CountrySWA   -4.3883     2.6793  -1.638  0.10368
## CountrySEN   -4.3883     0.9970  -4.402 2.11e-05 ***
## CountryZAI   -4.3883     2.6793  -1.638  0.10368
## CountryMOZ   -4.3883     1.9661  -2.232  0.02719 *
## CountryMLI   -4.3883     0.9593  -4.574 1.04e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.089e-16  6.326e-01   0.000    1.000
## CountryKEN   3.342e-01  1.000e+00   0.334    0.739
## CountryETH   1.768e-15  2.758e+00   0.000    1.000
## CountryGUI  -6.666e-16  9.384e-01   0.000    1.000
## CountryGHA   3.789e+00  8.947e-01   4.235 4.09e-05 ***
## CountryBKF   3.586e-01  7.535e-01   0.476    0.635
## CountryZIM  -5.254e-16  1.059e+00   0.000    1.000
## CountryZAM  -6.858e-16  2.758e+00   0.000    1.000
## CountrySAF  -1.921e-16  1.141e+00   0.000    1.000
## CountryUGA  -8.262e-16  1.357e+00   0.000    1.000
## CountryURT   2.350e-01  1.265e+00   0.186    0.853
## CountrySWA  -1.292e-15  2.758e+00   0.000    1.000
## CountrySEN  -9.176e-16  9.384e-01   0.000    1.000
## CountryZAI  -1.251e-16  2.758e+00   0.000    1.000
```

```
## CountryMOZ  -1.138e-16  2.001e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.047e-14  1.820e+00   0.000   1.0000
## CountryMLI   1.063e-14  1.919e+00   0.000   1.0000
## CountryKEN   4.388e+00  1.966e+00   2.232   0.0272 *
## CountryETH   6.500e-01  3.153e+00   0.206   0.8370
## CountryGUI  -5.284e-15  1.938e+00   0.000   1.0000
## CountryGHA   1.360e-14  1.919e+00   0.000   1.0000
## CountryBKF   1.012e-01  1.862e+00   0.054   0.9568
## CountryZIM   1.680e+00  1.994e+00   0.843   0.4009
## CountryZAM   7.530e+00  3.153e+00   2.388   0.0182 *
## CountrySAF   4.550e-01  2.035e+00   0.224   0.8234
## CountryUGA   2.120e-01  2.154e+00   0.098   0.9217
## CountryURT   4.663e+00  2.102e+00   2.219   0.0281 *
## CountrySWA   1.073e-14  3.153e+00   0.000   1.0000
## CountrySEN   1.232e-14  1.938e+00   0.000   1.0000
## CountryZAI   3.263e-15  3.153e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.621e-14  2.574e+00   0.000   1.0000
## CountryMOZ  -2.354e-14  3.153e+00   0.000   1.0000
## CountryMLI  -2.361e-14  2.645e+00   0.000   1.0000
## CountryKEN   4.388e+00  2.679e+00   1.638   0.1037
## CountryETH   6.500e-01  3.640e+00   0.179   0.8585
## CountryGUI  -3.327e-14  2.659e+00   0.000   1.0000
## CountryGHA  -2.543e-14  2.645e+00   0.000   1.0000
## CountryBKF   1.012e-01  2.604e+00   0.039   0.9691
## CountryZIM   1.680e+00  2.700e+00   0.622   0.5348
## CountryZAM   7.530e+00  3.640e+00   2.068   0.0404 *
## CountrySAF   4.550e-01  2.730e+00   0.167   0.8679
## CountryUGA   2.120e-01  2.820e+00   0.075   0.9402
## CountryURT   4.663e+00  2.780e+00   1.677   0.0957 .
## CountrySWA  -2.526e-14  3.640e+00   0.000   1.0000
## CountrySEN  -3.073e-14  2.659e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.202e-15  6.646e-01   0.000 1.000000
## CountryZAI   4.809e-15  2.659e+00   0.000 1.000000
## CountryMOZ   3.179e-15  1.938e+00   0.000 1.000000
## CountryMLI   3.176e-15  8.999e-01   0.000 1.000000
## CountryKEN   4.388e+00  9.970e-01   4.402 2.11e-05 ***
## CountryETH   6.500e-01  2.659e+00   0.244 0.807206
## CountryGUI   4.652e-15  9.400e-01   0.000 1.000000
## CountryGHA   1.110e-14  8.999e-01   0.000 1.000000
## CountryBKF   1.012e-01  7.719e-01   0.131 0.895920
## CountryZIM   1.680e+00  1.051e+00   1.599 0.112141
## CountryZAM   7.530e+00  2.659e+00   2.832 0.005298 **
## CountrySAF   4.550e-01  1.127e+00   0.404 0.687016
## CountryUGA   2.120e-01  1.329e+00   0.159 0.873517
## CountryURT   4.663e+00  1.243e+00   3.750 0.000257 ***
## CountrySWA   5.504e-15  2.659e+00   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.185e-14  2.574e+00   0.000   1.0000
## CountrySEN  -3.144e-14  2.659e+00   0.000   1.0000
## CountryZAI  -3.168e-14  3.640e+00   0.000   1.0000
## CountryMOZ  -2.996e-14  3.153e+00   0.000   1.0000
```

```
## CountryMLI  -6.544e-14  2.645e+00   0.000   1.0000
## CountryKEN   4.388e+00  2.679e+00   1.638   0.1037
## CountryETH   6.500e-01  3.640e+00   0.179   0.8585
## CountryGUI  -3.930e-14  2.659e+00   0.000   1.0000
## CountryGHA  -2.563e-14  2.645e+00   0.000   1.0000
## CountryBKF   1.012e-01  2.604e+00   0.039   0.9691
## CountryZIM   1.680e+00  2.700e+00   0.622   0.5348
## CountryZAM   7.530e+00  3.640e+00   2.068   0.0404 *
## CountrySAF   4.550e-01  2.730e+00   0.167   0.8679
## CountryUGA   2.120e-01  2.820e+00   0.075   0.9402
## CountryURT   4.663e+00  2.780e+00   1.677   0.0957 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TcTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -0.3586   0.0000   0.0000  18.4306
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.23500    1.09577   0.214  0.83050
## CountrySWA  -0.23500    2.89915  -0.081  0.93551
## CountrySEN  -0.23500    1.29654  -0.181  0.85643
## CountryZAI  -0.23500    2.89915  -0.081  0.93551
## CountryMOZ  -0.23500    2.19155  -0.107  0.91476
## CountryMLI  -0.23500    1.26529  -0.186  0.85292
## CountryKEN   0.09917    1.34204   0.074  0.94120
## CountryETH  -0.23500    2.89915  -0.081  0.93551
## CountryGUI  -0.23500    1.29654  -0.181  0.85643
## CountryGHA   3.55444    1.26529   2.809  0.00567 **
## CountryBKF   0.12360    1.16973   0.106  0.91599
## CountryZIM  -0.23500    1.38606  -0.170  0.86561
## CountryZAM  -0.23500    2.89915  -0.081  0.93551
## CountrySAF  -0.23500    1.44957  -0.162  0.87145
```

```
## CountryUGA  -0.23500    1.62530  -0.145  0.88524
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.204325)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1015.8  on 141  degrees of freedom
## AIC: 766.99
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2120     1.1512   0.184  0.85416
## CountryURT    4.4513     1.5587   2.856  0.00494 **
## CountrySWA   -0.2120     2.8199  -0.075  0.94018
## CountrySEN   -0.2120     1.3293  -0.159  0.87352
## CountryZAI   -0.2120     2.8199  -0.075  0.94018
## CountryMOZ   -0.2120     2.1537  -0.098  0.92173
## CountryMLI   -0.2120     1.3013  -0.163  0.87082
## CountryKEN    4.1763     1.3702   3.048  0.00275 **
## CountryETH    0.4380     2.8199   0.155  0.87679
## CountryGUI   -0.2120     1.3293  -0.159  0.87352
## CountryGHA   -0.2120     1.3013  -0.163  0.87082
## CountryBKF   -0.1108     1.2163  -0.091  0.92752
## CountryZIM    1.4680     1.4099   1.041  0.29957
## CountryZAM    7.3180     2.8199   2.595  0.01045 *
## CountrySAF    0.2430     1.4675   0.166  0.86872
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4550     0.9101   0.500  0.61790
## CountryUGA   -0.2430     1.4675  -0.166  0.86872
## CountryURT    4.2083     1.3902   3.027  0.00294 **
## CountrySWA   -0.4550     2.7303  -0.167  0.86789
## CountrySEN   -0.4550     1.1270  -0.404  0.68702
## CountryZAI   -0.4550     2.7303  -0.167  0.86789
## CountryMOZ   -0.4550     2.0351  -0.224  0.82341
## CountryMLI   -0.4550     1.0938  -0.416  0.67806
## CountryKEN    3.9333     1.1749   3.348  0.00105 **
## CountryETH    0.1950     2.7303   0.071  0.94316
## CountryGUI   -0.4550     1.1270  -0.404  0.68702
## CountryGHA   -0.4550     1.0938  -0.416  0.67806
## CountryBKF   -0.3538     0.9912  -0.357  0.72163
## CountryZIM    1.2250     1.2210   1.003  0.31746
## CountryZAM    7.0750     2.7303   2.591  0.01057 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    7.530      2.574   2.925  0.00401 **
## CountrySAF    -7.075      2.730  -2.591  0.01057 *
## CountryUGA    -7.318      2.820  -2.595  0.01045 *
## CountryURT    -2.867      2.780  -1.031  0.30430
## CountrySWA    -7.530      3.640  -2.068  0.04043 *
## CountrySEN    -7.530      2.659  -2.832  0.00530 **
## CountryZAI    -7.530      3.640  -2.068  0.04043 *
## CountryMOZ    -7.530      3.153  -2.388  0.01824 *
## CountryMLI    -7.530      2.645  -2.847  0.00507 **
## CountryKEN    -3.142      2.679  -1.173  0.24294
## CountryETH    -6.880      3.640  -1.890  0.06083 .
## CountryGUI    -7.530      2.659  -2.832  0.00530 **
## CountryGHA    -7.530      2.645  -2.847  0.00507 **
## CountryBKF    -7.429      2.604  -2.853  0.00498 **
## CountryZIM    -5.850      2.700  -2.167  0.03193 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TcTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.6633  -0.1012   0.0000   0.0000  16.4667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.6800     0.8140   2.064   0.0409 *
## CountryZAM    5.8500     2.6998   2.167   0.0319 *
## CountrySAF   -1.2250     1.2210  -1.003   0.3175
## CountryUGA   -1.4680     1.4099  -1.041   0.2996
```

```
## CountryURT    2.9833     1.3293   2.244   0.0264 *
## CountrySWA   -1.6800     2.6998  -0.622   0.5348
## CountrySEN   -1.6800     1.0509  -1.599   0.1121
## CountryZAI   -1.6800     2.6998  -0.622   0.5348
## CountryMOZ   -1.6800     1.9939  -0.843   0.4009
## CountryMLI   -1.6800     1.0153  -1.655   0.1002
## CountryKEN    2.7083     1.1022   2.457   0.0152 *
## CountryETH   -1.0300     2.6998  -0.382   0.7034
## CountryGUI   -1.6800     1.0509  -1.599   0.1121
## CountryGHA   -1.6800     1.0153  -1.655   0.1002
## CountryBKF   -1.5788     0.9037  -1.747   0.0828 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.626342)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  934.31  on 141  degrees of freedom
## AIC: 753.94
##
## Number of Fisher Scoring iterations: 2

#======== Glm TvTz per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4800     1.3507   0.355    0.723
## CountryZIM   -0.4800     3.1096  -0.154    0.878
## CountryZAM   -0.4800     8.9598  -0.054    0.957
## CountrySAF   -0.4800     3.4105  -0.141    0.888
## CountryUGA   -0.4800     4.1851  -0.115    0.909
## CountryURT   -0.2450     3.8601  -0.063    0.949
## CountrySWA   -0.4800     8.9598  -0.054    0.957
## CountrySEN    1.0333     2.6561   0.389    0.698
## CountryZAI   -0.4800     8.9598  -0.054    0.957
## CountryMOZ   -0.4800     6.4071  -0.075    0.940
## CountryMLI   -0.4800     2.4866  -0.193    0.847
## CountryKEN   -0.3942     2.8918  -0.136    0.892
## CountryETH   -0.4800     8.9598  -0.054    0.957
```

```
## CountryGUI   -0.4800     2.6561  -0.181    0.857
## CountryGHA   12.9139     2.4866   5.193 7.08e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13.394      2.088   6.416 1.98e-09 ***
## CountryBKF   -12.914      2.487  -5.193 7.08e-07 ***
## CountryZIM   -13.394      3.493  -3.834 0.000189 ***
## CountryZAM   -13.394      9.100  -1.472 0.143293
## CountrySAF   -13.394      3.764  -3.559 0.000508 ***
## CountryUGA   -13.394      4.478  -2.991 0.003280 **
## CountryURT   -13.159      4.175  -3.152 0.001984 **
## CountrySWA   -13.394      9.100  -1.472 0.143293
## CountrySEN   -11.881      3.097  -3.837 0.000188 ***
## CountryZAI   -13.394      9.100  -1.472 0.143293
## CountryMOZ   -13.394      6.602  -2.029 0.044362 *
## CountryMLI   -13.394      2.952  -4.537 1.21e-05 ***
## CountryKEN   -13.308      3.301  -4.032 9.03e-05 ***
## CountryETH   -13.394      9.100  -1.472 0.143293
## CountryGUI   -13.394      3.097  -4.325 2.86e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.991e-15  2.287e+00   0.000    1.000
## CountryGHA   1.339e+01  3.097e+00   4.325 2.86e-05 ***
## CountryBKF   4.800e-01  2.656e+00   0.181    0.857
## CountryZIM  -9.384e-16  3.616e+00   0.000    1.000
## CountryZAM  -9.099e-16  9.148e+00   0.000    1.000
## CountrySAF  -1.854e-15  3.878e+00   0.000    1.000
## CountryUGA  -2.235e-15  4.574e+00   0.000    1.000
## CountryURT   2.350e-01  4.279e+00   0.055    0.956
## CountrySWA  -2.238e-16  9.148e+00   0.000    1.000
## CountrySEN   1.513e+00  3.234e+00   0.468    0.641
## CountryZAI  -1.418e-15  9.148e+00   0.000    1.000
## CountryMOZ  -1.136e-15  6.668e+00   0.000    1.000
## CountryMLI  -1.794e-15  3.097e+00   0.000    1.000
## CountryKEN   8.583e-02  3.430e+00   0.025    0.980
## CountryETH  -2.236e-15  9.148e+00   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  9.020e-15  8.857e+00   0.000    1.000
## CountryGUI  -5.066e-15  9.148e+00   0.000    1.000
## CountryGHA   1.339e+01  9.100e+00   1.472    0.143
## CountryBKF   4.800e-01  8.960e+00   0.054    0.957
## CountryZIM  -9.356e-15  9.290e+00   0.000    1.000
## CountryZAM  -9.787e-15  1.253e+01   0.000    1.000
## CountrySAF  -1.187e-14  9.395e+00   0.000    1.000
## CountryUGA  -1.089e-14  9.703e+00   0.000    1.000
## CountryURT   2.350e-01  9.567e+00   0.025    0.980
## CountrySWA  -9.925e-15  1.253e+01   0.000    1.000
## CountrySEN   1.513e+00  9.148e+00   0.165    0.869
## CountryZAI  -9.733e-15  1.253e+01   0.000    1.000
## CountryMOZ  -1.060e-14  1.085e+01   0.000    1.000
## CountryMLI  -9.415e-15  9.100e+00   0.000    1.000
## CountryKEN   8.583e-02  9.219e+00   0.009    0.993
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.08583    2.55691   0.034    0.973
## CountryETH  -0.08583    9.21907  -0.009    0.993
## CountryGUI  -0.08583    3.43046  -0.025    0.980
## CountryGHA  13.30806    3.30096   4.032 9.03e-05 ***
## CountryBKF   0.39417    2.89176   0.136    0.892
## CountryZIM  -0.08583    3.79251  -0.023    0.982
```

```
## CountryZAM  -0.08583    9.21907  -0.009    0.993
## CountrySAF  -0.08583    4.04283  -0.021    0.983
## CountryUGA  -0.08583    4.71471  -0.018    0.986
## CountryURT   0.14917    4.42870   0.034    0.973
## CountrySWA  -0.08583    9.21907  -0.009    0.993
## CountrySEN   1.42750    3.43046   0.416    0.678
## CountryZAI  -0.08583    9.21907  -0.009    0.993
## CountryMOZ  -0.08583    6.76495  -0.013    0.990
## CountryMLI  -0.08583    3.30096  -0.026    0.979
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.044e-16  2.088e+00   0.000    1.000
## CountryKEN   8.583e-02  3.301e+00   0.026    0.979
## CountryETH   2.829e-14  9.100e+00   0.000    1.000
## CountryGUI  -4.363e-15  3.097e+00   0.000    1.000
## CountryGHA   1.339e+01  2.952e+00   4.537 1.21e-05 ***
## CountryBKF   4.800e-01  2.487e+00   0.193    0.847
## CountryZIM   1.089e-15  3.493e+00   0.000    1.000
## CountryZAM  -1.762e-15  9.100e+00   0.000    1.000
## CountrySAF   8.197e-16  3.764e+00   0.000    1.000
## CountryUGA   1.967e-15  4.478e+00   0.000    1.000
## CountryURT   2.350e-01  4.175e+00   0.056    0.955
## CountrySWA   1.013e-15  9.100e+00   0.000    1.000
## CountrySEN   1.513e+00  3.097e+00   0.489    0.626
## CountryZAI   5.999e-16  9.100e+00   0.000    1.000
## CountryMOZ   3.103e-16  6.602e+00   0.000    1.000
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.569e-15  6.263e+00   0.000   1.0000
## CountryMLI  -1.635e-15  6.602e+00   0.000   1.0000
## CountryKEN   8.583e-02  6.765e+00   0.013   0.9899
## CountryETH  -2.195e-14  1.085e+01   0.000   1.0000
## CountryGUI  -8.312e-15  6.668e+00   0.000   1.0000
## CountryGHA   1.339e+01  6.602e+00   2.029   0.0444 *
## CountryBKF   4.800e-01  6.407e+00   0.075   0.9404
## CountryZIM  -3.063e-15  6.861e+00   0.000   1.0000
## CountryZAM  -4.752e-15  1.085e+01   0.000   1.0000
## CountrySAF  -3.912e-15  7.002e+00   0.000   1.0000
## CountryUGA  -5.976e-15  7.411e+00   0.000   1.0000
## CountryURT   2.350e-01  7.232e+00   0.032   0.9741
## CountrySWA  -3.878e-15  1.085e+01   0.000   1.0000
## CountrySEN   1.513e+00  6.668e+00   0.227   0.8208
## CountryZAI  -4.147e-15  1.085e+01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.867e-14  8.857e+00   0.000    1.000
## CountryMOZ  -1.760e-14  1.085e+01   0.000    1.000
## CountryMLI  -1.961e-14  9.100e+00   0.000    1.000
## CountryKEN   8.583e-02  9.219e+00   0.009    0.993
## CountryETH  -1.037e-14  1.253e+01   0.000    1.000
## CountryGUI  -1.371e-14  9.148e+00   0.000    1.000
## CountryGHA   1.339e+01  9.100e+00   1.472    0.143
## CountryBKF   4.800e-01  8.960e+00   0.054    0.957
## CountryZIM  -1.942e-14  9.290e+00   0.000    1.000
## CountryZAM  -2.245e-14  1.253e+01   0.000    1.000
## CountrySAF  -2.159e-14  9.395e+00   0.000    1.000
## CountryUGA  -2.163e-14  9.703e+00   0.000    1.000
## CountryURT   2.350e-01  9.567e+00   0.025    0.980
## CountrySWA  -2.266e-14  1.253e+01   0.000    1.000
## CountrySEN   1.513e+00  9.148e+00   0.165    0.869
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.513      2.287   0.662 0.509231
## CountryZAI    -1.513      9.148  -0.165 0.868843
## CountryMOZ    -1.513      6.668  -0.227 0.820777
## CountryMLI    -1.513      3.097  -0.489 0.625805
## CountryKEN    -1.427      3.430  -0.416 0.677951
## CountryETH    -1.513      9.148  -0.165 0.868843
## CountryGUI    -1.513      3.234  -0.468 0.640574
## CountryGHA    11.881      3.097   3.837 0.000188 ***
## CountryBKF    -1.033      2.656  -0.389 0.697830
## CountryZIM    -1.513      3.616  -0.419 0.676212
## CountryZAM    -1.513      9.148  -0.165 0.868843
## CountrySAF    -1.513      3.878  -0.390 0.696932
## CountryUGA    -1.513      4.574  -0.331 0.741241
## CountryURT    -1.278      4.279  -0.299 0.765549
## CountrySWA    -1.513      9.148  -0.165 0.868843
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.476e-15  8.857e+00   0.000    1.000
## CountrySEN   1.513e+00  9.148e+00   0.165    0.869
## CountryZAI  -4.630e-15  1.253e+01   0.000    1.000
## CountryMOZ  -1.373e-15  1.085e+01   0.000    1.000
## CountryMLI   3.087e-16  9.100e+00   0.000    1.000
## CountryKEN   8.583e-02  9.219e+00   0.009    0.993
## CountryETH   4.353e-15  1.253e+01   0.000    1.000
## CountryGUI  -3.957e-15  9.148e+00   0.000    1.000
```

```
## CountryGHA   1.339e+01  9.100e+00   1.472    0.143
## CountryBKF   4.800e-01  8.960e+00   0.054    0.957
## CountryZIM  -2.172e-15  9.290e+00   0.000    1.000
## CountryZAM   7.878e-15  1.253e+01   0.000    1.000
## CountrySAF  -6.047e-16  9.395e+00   0.000    1.000
## CountryUGA  -3.640e-15  9.703e+00   0.000    1.000
## CountryURT   2.350e-01  9.567e+00   0.025    0.980
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2350     3.6160   0.065  0.94828
## CountrySWA   -0.2350     9.5671  -0.025  0.98044
## CountrySEN    1.2783     4.2785   0.299  0.76555
## CountryZAI   -0.2350     9.5671  -0.025  0.98044
## CountryMOZ   -0.2350     7.2320  -0.032  0.97412
## CountryMLI   -0.2350     4.1754  -0.056  0.95520
## CountryKEN   -0.1492     4.4287  -0.034  0.97318
## CountryETH   -0.2350     9.5671  -0.025  0.98044
## CountryGUI   -0.2350     4.2785  -0.055  0.95628
## CountryGHA   13.1589     4.1754   3.152  0.00198 **
## CountryBKF    0.2450     3.8601   0.063  0.94948
## CountryZIM   -0.2350     4.5739  -0.051  0.95910
## CountryZAM   -0.2350     9.5671  -0.025  0.98044
## CountrySAF   -0.2350     4.7835  -0.049  0.96089
## CountryUGA   -0.2350     5.3634  -0.044  0.96511
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
```

```
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.677e-15  3.961e+00   0.000  1.00000
## CountryURT   2.350e-01  5.363e+00   0.044  0.96511
## CountrySWA  -4.985e-15  9.703e+00   0.000  1.00000
## CountrySEN   1.513e+00  4.574e+00   0.331  0.74124
## CountryZAI  -7.804e-15  9.703e+00   0.000  1.00000
## CountryMOZ  -7.172e-15  7.411e+00   0.000  1.00000
## CountryMLI  -8.049e-15  4.478e+00   0.000  1.00000
## CountryKEN   8.583e-02  4.715e+00   0.018  0.98550
## CountryETH  -2.382e-15  9.703e+00   0.000  1.00000
## CountryGUI  -3.980e-15  4.574e+00   0.000  1.00000
## CountryGHA   1.339e+01  4.478e+00   2.991  0.00328 **
## CountryBKF   4.800e-01  4.185e+00   0.115  0.90885
## CountryZIM  -5.103e-15  4.851e+00   0.000  1.00000
## CountryZAM   3.876e-15  9.703e+00   0.000  1.00000
## CountrySAF  -3.623e-15  5.049e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.565e-15  3.132e+00   0.000 1.000000
## CountryUGA   1.221e-15  5.049e+00   0.000 1.000000
## CountryURT   2.350e-01  4.784e+00   0.049 0.960888
## CountrySWA   6.406e-16  9.395e+00   0.000 1.000000
## CountrySEN   1.513e+00  3.878e+00   0.390 0.696932
## CountryZAI   3.824e-15  9.395e+00   0.000 1.000000
## CountryMOZ  -1.667e-16  7.002e+00   0.000 1.000000
## CountryMLI  -2.586e-15  3.764e+00   0.000 1.000000
## CountryKEN   8.583e-02  4.043e+00   0.021 0.983091
## CountryETH   1.305e-14  9.395e+00   0.000 1.000000
## CountryGUI   3.499e-15  3.878e+00   0.000 1.000000
## CountryGHA   1.339e+01  3.764e+00   3.559 0.000508 ***
## CountryBKF   4.800e-01  3.410e+00   0.141 0.888273
## CountryZIM  -2.427e-15  4.201e+00   0.000 1.000000
## CountryZAM   3.179e-15  9.395e+00   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)  3.835e-14  8.857e+00   0.000    1.000
## CountrySAF  -3.678e-14  9.395e+00   0.000    1.000
## CountryUGA  -3.386e-14  9.703e+00   0.000    1.000
## CountryURT   2.350e-01  9.567e+00   0.025    0.980
## CountrySWA  -3.875e-14  1.253e+01   0.000    1.000
## CountrySEN   1.513e+00  9.148e+00   0.165    0.869
## CountryZAI  -4.028e-14  1.253e+01   0.000    1.000
## CountryMOZ  -4.177e-14  1.085e+01   0.000    1.000
## CountryMLI  -3.875e-14  9.100e+00   0.000    1.000
## CountryKEN   8.583e-02  9.219e+00   0.009    0.993
## CountryETH  -4.546e-14  1.253e+01   0.000    1.000
## CountryGUI  -3.832e-14  9.148e+00   0.000    1.000
## CountryGHA   1.339e+01  9.100e+00   1.472    0.143
## CountryBKF   4.800e-01  8.960e+00   0.054    0.957
## CountryZIM  -3.656e-14  9.290e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394   -0.480   -0.086    0.000   69.936
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.951e-16  2.801e+00   0.000 1.000000
## CountryZAM  -6.294e-15  9.290e+00   0.000 1.000000
## CountrySAF  -5.800e-16  4.201e+00   0.000 1.000000
## CountryUGA   1.167e-15  4.851e+00   0.000 1.000000
## CountryURT   2.350e-01  4.574e+00   0.051 0.959097
## CountrySWA   1.059e-15  9.290e+00   0.000 1.000000
## CountrySEN   1.513e+00  3.616e+00   0.419 0.676212
## CountryZAI  -5.622e-15  9.290e+00   0.000 1.000000
## CountryMOZ   4.382e-15  6.861e+00   0.000 1.000000
## CountryMLI  -1.316e-16  3.493e+00   0.000 1.000000
## CountryKEN   8.583e-02  3.793e+00   0.023 0.981976
## CountryETH  -8.040e-15  9.290e+00   0.000 1.000000
```

```
## CountryGUI   0.000e+00  3.616e+00   0.000 1.000000
## CountryGHA   1.339e+01  3.493e+00   3.834 0.000189 ***
## CountryBKF   4.800e-01  3.110e+00   0.154 0.877548
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78.45348)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 11062  on 141  degrees of freedom
## AIC: 1139.5
##
## Number of Fisher Scoring iterations: 2

#======== Glm TvTsg per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.536      1.141   5.729 5.87e-08 ***
## CountryZIM    -6.536      2.626  -2.489  0.01399 *
## CountryZAM    -6.536      7.567  -0.864  0.38921
## CountrySAF    -6.536      2.880  -2.269  0.02478 *
## CountryUGA    -6.536      3.535  -1.849  0.06654 .
## CountryURT    -5.394      3.260  -1.655  0.10022
## CountrySWA    -6.536      7.567  -0.864  0.38921
## CountrySEN    -6.536      2.243  -2.914  0.00416 **
## CountryZAI    -6.536      7.567  -0.864  0.38921
## CountryMOZ    -5.536      5.411  -1.023  0.30804
## CountryMLI    -6.536      2.100  -3.112  0.00225 **
## CountryKEN    -6.432      2.442  -2.633  0.00940 **
## CountryETH    -6.096      7.567  -0.806  0.42185
## CountryGUI    -6.536      2.243  -2.914  0.00416 **
## CountryGHA    -6.536      2.100  -3.112  0.00225 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
```

```
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.413e-15  1.763e+00   0.000  1.00000
## CountryBKF   6.536e+00  2.100e+00   3.112  0.00225 **
## CountryZIM  -6.966e-15  2.951e+00   0.000  1.00000
## CountryZAM  -4.867e-15  7.686e+00   0.000  1.00000
## CountrySAF  -4.669e-15  3.179e+00   0.000  1.00000
## CountryUGA  -4.758e-15  3.782e+00   0.000  1.00000
## CountryURT   1.142e+00  3.527e+00   0.324  0.74662
## CountrySWA  -9.123e-15  7.686e+00   0.000  1.00000
## CountrySEN  -5.532e-15  2.615e+00   0.000  1.00000
## CountryZAI  -3.625e-14  7.686e+00   0.000  1.00000
## CountryMOZ   1.000e+00  5.576e+00   0.179  0.85793
## CountryMLI  -6.984e-15  2.494e+00   0.000  1.00000
## CountryKEN   1.042e-01  2.788e+00   0.037  0.97025
## CountryETH   4.400e-01  7.686e+00   0.057  0.95443
## CountryGUI  -5.822e-15  2.615e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.635e-15  1.932e+00   0.000  1.00000
## CountryGHA  -3.116e-15  2.615e+00   0.000  1.00000
## CountryBKF   6.536e+00  2.243e+00   2.914  0.00416 **
## CountryZIM  -2.345e-15  3.054e+00   0.000  1.00000
## CountryZAM  -2.158e-15  7.726e+00   0.000  1.00000
## CountrySAF  -1.999e-15  3.275e+00   0.000  1.00000
## CountryUGA  -3.262e-15  3.863e+00   0.000  1.00000
## CountryURT   1.142e+00  3.614e+00   0.316  0.75252
## CountrySWA  -5.779e-15  7.726e+00   0.000  1.00000
## CountrySEN  -3.424e-15  2.732e+00   0.000  1.00000
## CountryZAI   1.445e-14  7.726e+00   0.000  1.00000
## CountryMOZ   1.000e+00  5.631e+00   0.178  0.85931
## CountryMLI   5.031e-16  2.615e+00   0.000  1.00000
## CountryKEN   1.042e-01  2.897e+00   0.036  0.97137
## CountryETH   4.400e-01  7.726e+00   0.057  0.95467
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4400     7.4809   0.059    0.953
## CountryGUI   -0.4400     7.7262  -0.057    0.955
```

```
## CountryGHA   -0.4400     7.6859  -0.057    0.954
## CountryBKF    6.0960     7.5674   0.806    0.422
## CountryZIM   -0.4400     7.8460  -0.056    0.955
## CountryZAM   -0.4400    10.5796  -0.042    0.967
## CountrySAF   -0.4400     7.9347  -0.055    0.956
## CountryUGA   -0.4400     8.1949  -0.054    0.957
## CountryURT    0.7017     8.0803   0.087    0.931
## CountrySWA   -0.4400    10.5796  -0.042    0.967
## CountrySEN   -0.4400     7.7262  -0.057    0.955
## CountryZAI   -0.4400    10.5796  -0.042    0.967
## CountryMOZ    0.5600     9.1622   0.061    0.951
## CountryMLI   -0.4400     7.6859  -0.057    0.954
## CountryKEN   -0.3358     7.7864  -0.043    0.966
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1042     2.1595   0.048   0.9616
## CountryETH    0.3358     7.7864   0.043   0.9657
## CountryGUI   -0.1042     2.8973  -0.036   0.9714
## CountryGHA   -0.1042     2.7880  -0.037   0.9702
## CountryBKF    6.4319     2.4424   2.633   0.0094 **
## CountryZIM   -0.1042     3.2031  -0.033   0.9741
## CountryZAM   -0.1042     7.7864  -0.013   0.9893
## CountrySAF   -0.1042     3.4145  -0.031   0.9757
## CountryUGA   -0.1042     3.9820  -0.026   0.9792
## CountryURT    1.0375     3.7404   0.277   0.7819
## CountrySWA   -0.1042     7.7864  -0.013   0.9893
## CountrySEN   -0.1042     2.8973  -0.036   0.9714
## CountryZAI   -0.1042     7.7864  -0.013   0.9893
## CountryMOZ    0.8958     5.7136   0.157   0.8756
```

```
## CountryMLI   -0.1042     2.7880  -0.037   0.9702
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.697e-15  1.763e+00   0.000  1.00000
## CountryKEN   1.042e-01  2.788e+00   0.037  0.97025
## CountryETH   4.400e-01  7.686e+00   0.057  0.95443
## CountryGUI   6.453e-15  2.615e+00   0.000  1.00000
## CountryGHA   4.517e-15  2.494e+00   0.000  1.00000
## CountryBKF   6.536e+00  2.100e+00   3.112  0.00225 **
## CountryZIM   7.330e-15  2.951e+00   0.000  1.00000
## CountryZAM   7.386e-15  7.686e+00   0.000  1.00000
## CountrySAF   9.513e-15  3.179e+00   0.000  1.00000
## CountryUGA   5.246e-15  3.782e+00   0.000  1.00000
## CountryURT   1.142e+00  3.527e+00   0.324  0.74662
## CountrySWA   5.182e-15  7.686e+00   0.000  1.00000
## CountrySEN   5.356e-15  2.615e+00   0.000  1.00000
## CountryZAI   5.674e-15  7.686e+00   0.000  1.00000
## CountryMOZ   1.000e+00  5.576e+00   0.179  0.85793
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0000     5.2898   0.189    0.850
## CountryMLI   -1.0000     5.5759  -0.179    0.858
## CountryKEN   -0.8958     5.7136  -0.157    0.876
## CountryETH   -0.5600     9.1622  -0.061    0.951
## CountryGUI   -1.0000     5.6314  -0.178    0.859
## CountryGHA   -1.0000     5.5759  -0.179    0.858
## CountryBKF    5.5360     5.4114   1.023    0.308
## CountryZIM   -1.0000     5.7947  -0.173    0.863
## CountryZAM   -1.0000     9.1622  -0.109    0.913
## CountrySAF   -1.0000     5.9142  -0.169    0.866
## CountryUGA   -1.0000     6.2590  -0.160    0.873
## CountryURT    0.1417     6.1081   0.023    0.982
## CountrySWA   -1.0000     9.1622  -0.109    0.913
## CountrySEN   -1.0000     5.6314  -0.178    0.859
## CountryZAI   -1.0000     9.1622  -0.109    0.913
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.801e-14  7.481e+00   0.000    1.000
## CountryMOZ   1.000e+00  9.162e+00   0.109    0.913
## CountryMLI  -6.869e-14  7.686e+00   0.000    1.000
## CountryKEN   1.042e-01  7.786e+00   0.013    0.989
## CountryETH   4.400e-01  1.058e+01   0.042    0.967
## CountryGUI  -6.621e-14  7.726e+00   0.000    1.000
## CountryGHA  -6.834e-14  7.686e+00   0.000    1.000
## CountryBKF   6.536e+00  7.567e+00   0.864    0.389
## CountryZIM  -6.617e-14  7.846e+00   0.000    1.000
## CountryZAM  -1.372e-13  1.058e+01   0.000    1.000
## CountrySAF  -6.079e-14  7.935e+00   0.000    1.000
## CountryUGA  -6.251e-14  8.195e+00   0.000    1.000
## CountryURT   1.142e+00  8.080e+00   0.141    0.888
## CountrySWA  -6.557e-14  1.058e+01   0.000    1.000
## CountrySEN  -6.897e-14  7.726e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.635e-15  1.932e+00   0.000  1.00000
## CountryZAI  -4.202e-14  7.726e+00   0.000  1.00000
## CountryMOZ   1.000e+00  5.631e+00   0.178  0.85931
## CountryMLI   8.876e-15  2.615e+00   0.000  1.00000
## CountryKEN   1.042e-01  2.897e+00   0.036  0.97137
## CountryETH   4.400e-01  7.726e+00   0.057  0.95467
## CountryGUI   7.783e-15  2.732e+00   0.000  1.00000
## CountryGHA   5.509e-15  2.615e+00   0.000  1.00000
```

```
## CountryBKF   6.536e+00  2.243e+00   2.914  0.00416 **
## CountryZIM   8.371e-15  3.054e+00   0.000  1.00000
## CountryZAM  -1.819e-14  7.726e+00   0.000  1.00000
## CountrySAF   1.109e-16  3.275e+00   0.000  1.00000
## CountryUGA   1.001e-14  3.863e+00   0.000  1.00000
## CountryURT   1.142e+00  3.614e+00   0.316  0.75252
## CountrySWA   5.275e-15  7.726e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.742e-14  7.481e+00   0.000    1.000
## CountrySEN  -4.577e-14  7.726e+00   0.000    1.000
## CountryZAI  -4.629e-14  1.058e+01   0.000    1.000
## CountryMOZ   1.000e+00  9.162e+00   0.109    0.913
## CountryMLI  -5.995e-14  7.686e+00   0.000    1.000
## CountryKEN   1.042e-01  7.786e+00   0.013    0.989
## CountryETH   4.400e-01  1.058e+01   0.042    0.967
## CountryGUI  -5.630e-14  7.726e+00   0.000    1.000
## CountryGHA  -6.022e-14  7.686e+00   0.000    1.000
## CountryBKF   6.536e+00  7.567e+00   0.864    0.389
## CountryZIM  -5.496e-14  7.846e+00   0.000    1.000
## CountryZAM  -5.324e-14  1.058e+01   0.000    1.000
## CountrySAF  -4.672e-14  7.935e+00   0.000    1.000
## CountryUGA  -5.084e-14  8.195e+00   0.000    1.000
## CountryURT   1.142e+00  8.080e+00   0.141    0.888
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
```

```
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.1417     3.0541   0.374    0.709
## CountrySWA   -1.1417     8.0803  -0.141    0.888
## CountrySEN   -1.1417     3.6136  -0.316    0.753
## CountryZAI   -1.1417     8.0803  -0.141    0.888
## CountryMOZ   -0.1417     6.1081  -0.023    0.982
## CountryMLI   -1.1417     3.5265  -0.324    0.747
## CountryKEN   -1.0375     3.7404  -0.277    0.782
## CountryETH   -0.7017     8.0803  -0.087    0.931
## CountryGUI   -1.1417     3.6136  -0.316    0.753
## CountryGHA   -1.1417     3.5265  -0.324    0.747
## CountryBKF    5.3944     3.2602   1.655    0.100
## CountryZIM   -1.1417     3.8631  -0.296    0.768
## CountryZAM   -1.1417     8.0803  -0.141    0.888
## CountrySAF   -1.1417     4.0401  -0.283    0.778
## CountryUGA   -1.1417     4.5299  -0.252    0.801
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
```

```
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.818e-14  3.346e+00   0.000   1.0000
## CountryURT    1.142e+00  4.530e+00   0.252   0.8014
## CountrySWA  -2.422e-14  8.195e+00   0.000   1.0000
## CountrySEN  -2.735e-14  3.863e+00   0.000   1.0000
## CountryZAI  -3.795e-14  8.195e+00   0.000   1.0000
## CountryMOZ   1.000e+00  6.259e+00   0.160   0.8733
## CountryMLI  -2.995e-14  3.782e+00   0.000   1.0000
## CountryKEN   1.042e-01  3.982e+00   0.026   0.9792
## CountryETH   4.400e-01  8.195e+00   0.054   0.9573
## CountryGUI  -2.101e-14  3.863e+00   0.000   1.0000
## CountryGHA  -2.641e-14  3.782e+00   0.000   1.0000
## CountryBKF   6.536e+00  3.535e+00   1.849   0.0665 .
## CountryZIM  -2.864e-14  4.097e+00   0.000   1.0000
## CountryZAM  -1.832e-15  8.195e+00   0.000   1.0000
## CountrySAF  -2.544e-14  4.265e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.031e-15  2.645e+00   0.000   1.0000
## CountryUGA   1.815e-14  4.265e+00   0.000   1.0000
## CountryURT   1.142e+00  4.040e+00   0.283   0.7779
```

```
## CountrySWA  -1.675e-14  7.935e+00   0.000   1.0000
## CountrySEN  -5.181e-15  3.275e+00   0.000   1.0000
## CountryZAI  -4.942e-15  7.935e+00   0.000   1.0000
## CountryMOZ   1.000e+00  5.914e+00   0.169   0.8660
## CountryMLI  -5.386e-15  3.179e+00   0.000   1.0000
## CountryKEN   1.042e-01  3.415e+00   0.031   0.9757
## CountryETH   4.400e-01  7.935e+00   0.055   0.9559
## CountryGUI   8.498e-15  3.275e+00   0.000   1.0000
## CountryGHA  -6.658e-15  3.179e+00   0.000   1.0000
## CountryBKF   6.536e+00  2.880e+00   2.269   0.0248 *
## CountryZIM  -1.167e-14  3.548e+00   0.000   1.0000
## CountryZAM  -2.237e-15  7.935e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.302e-13  7.481e+00   0.000    1.000
## CountrySAF  -2.087e-13  7.935e+00   0.000    1.000
## CountryUGA  -2.168e-13  8.195e+00   0.000    1.000
## CountryURT   1.142e+00  8.080e+00   0.141    0.888
## CountrySWA  -2.309e-13  1.058e+01   0.000    1.000
## CountrySEN  -2.346e-13  7.726e+00   0.000    1.000
## CountryZAI  -2.390e-13  1.058e+01   0.000    1.000
## CountryMOZ   1.000e+00  9.162e+00   0.109    0.913
## CountryMLI  -2.276e-13  7.686e+00   0.000    1.000
## CountryKEN   1.042e-01  7.786e+00   0.013    0.989
## CountryETH   4.400e-01  1.058e+01   0.042    0.967
## CountryGUI  -2.317e-13  7.726e+00   0.000    1.000
## CountryGHA  -2.330e-13  7.686e+00   0.000    1.000
```

```
## CountryBKF   6.536e+00  7.567e+00   0.864    0.389
## CountryZIM  -2.336e-13  7.846e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.773e-15  2.366e+00   0.000    1.000
## CountryZAM  -6.818e-14  7.846e+00   0.000    1.000
## CountrySAF  -1.283e-14  3.548e+00   0.000    1.000
## CountryUGA  -7.956e-16  4.097e+00   0.000    1.000
## CountryURT   1.142e+00  3.863e+00   0.296    0.768
## CountrySWA   7.575e-15  7.846e+00   0.000    1.000
## CountrySEN   2.589e-15  3.054e+00   0.000    1.000
## CountryZAI  -2.430e-14  7.846e+00   0.000    1.000
## CountryMOZ   1.000e+00  5.795e+00   0.173    0.863
## CountryMLI   1.225e-14  2.951e+00   0.000    1.000
## CountryKEN   1.042e-01  3.203e+00   0.033    0.974
## CountryETH   4.400e-01  7.846e+00   0.056    0.955
## CountryGUI  -3.846e-15  3.054e+00   0.000    1.000
## CountryGHA   8.723e-15  2.951e+00   0.000    1.000
## CountryBKF   6.536e+00  2.626e+00   2.489    0.014 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```r
#======== Glm TzTsg per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.8402     0.5987   3.074  0.00254 **
## CountryZIM   -1.8402     1.3784  -1.335  0.18401
## CountryZAM   -1.8402     3.9716  -0.463  0.64383
## CountrySAF   -1.8402     1.5117  -1.217  0.22552
## CountryUGA   -1.8402     1.8551  -0.992  0.32291
## CountryURT   -1.2869     1.7110  -0.752  0.45323
## CountrySWA   -1.8402     3.9716  -0.463  0.64383
## CountrySEN   -1.8402     1.1773  -1.563  0.12029
## CountryZAI   -1.8402     3.9716  -0.463  0.64383
## CountryMOZ   -1.8402     2.8401  -0.648  0.51807
## CountryMLI   -1.8402     1.1022  -1.670  0.09722 .
## CountryKEN   -1.5652     1.2818  -1.221  0.22408
## CountryETH   -1.1902     3.9716  -0.300  0.76486
## CountryGUI   -1.8402     1.1773  -1.563  0.12029
## CountryGHA   -1.8402     1.1022  -1.670  0.09722 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2

data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
```

```
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.778e-15  9.254e-01   0.000   1.0000
## CountryBKF   1.840e+00  1.102e+00   1.670   0.0972 .
## CountryZIM   2.017e-15  1.549e+00   0.000   1.0000
## CountryZAM  -1.941e-15  4.034e+00   0.000   1.0000
## CountrySAF  -1.194e-15  1.668e+00   0.000   1.0000
## CountryUGA  -1.697e-15  1.985e+00   0.000   1.0000
## CountryURT   5.533e-01  1.851e+00   0.299   0.7654
## CountrySWA  -2.506e-15  4.034e+00   0.000   1.0000
## CountrySEN  -1.966e-15  1.373e+00   0.000   1.0000
## CountryZAI  -1.072e-15  4.034e+00   0.000   1.0000
## CountryMOZ   1.358e-16  2.926e+00   0.000   1.0000
## CountryMLI  -3.025e-15  1.309e+00   0.000   1.0000
## CountryKEN   2.750e-01  1.463e+00   0.188   0.8512
## CountryETH   6.500e-01  4.034e+00   0.161   0.8722
## CountryGUI  -1.650e-15  1.373e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.092e-16  1.014e+00   0.000    1.000
## CountryGHA  -2.448e-15  1.373e+00   0.000    1.000
## CountryBKF   1.840e+00  1.177e+00   1.563    0.120
## CountryZIM  -2.792e-16  1.603e+00   0.000    1.000
## CountryZAM  -2.010e-16  4.055e+00   0.000    1.000
```

```
## CountrySAF   7.995e-16  1.719e+00   0.000    1.000
## CountryUGA  -1.490e-15  2.027e+00   0.000    1.000
## CountryURT   5.533e-01  1.897e+00   0.292    0.771
## CountrySWA   1.732e-16  4.055e+00   0.000    1.000
## CountrySEN   5.485e-16  1.434e+00   0.000    1.000
## CountryZAI  -1.067e-15  4.055e+00   0.000    1.000
## CountryMOZ  -8.111e-16  2.956e+00   0.000    1.000
## CountryMLI  -5.870e-16  1.373e+00   0.000    1.000
## CountryKEN   2.750e-01  1.521e+00   0.181    0.857
## CountryETH   6.500e-01  4.055e+00   0.160    0.873
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.65000    3.92618   0.166    0.869
## CountryGUI  -0.65000    4.05494  -0.160    0.873
## CountryGHA  -0.65000    4.03376  -0.161    0.872
## CountryBKF   1.19023    3.97157   0.300    0.765
## CountryZIM  -0.65000    4.11781  -0.158    0.875
## CountryZAM  -0.65000    5.55245  -0.117    0.907
## CountrySAF  -0.65000    4.16434  -0.156    0.876
## CountryUGA  -0.65000    4.30091  -0.151    0.880
## CountryURT  -0.09667    4.24076  -0.023    0.982
## CountrySWA  -0.65000    5.55245  -0.117    0.907
## CountrySEN  -0.65000    4.05494  -0.160    0.873
## CountryZAI  -0.65000    5.55245  -0.117    0.907
## CountryMOZ  -0.65000    4.80856  -0.135    0.893
## CountryMLI  -0.65000    4.03376  -0.161    0.872
## CountryKEN  -0.37500    4.08649  -0.092    0.927
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
```

```
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2750     1.1334   0.243    0.809
## CountryETH    0.3750     4.0865   0.092    0.927
## CountryGUI   -0.2750     1.5206  -0.181    0.857
## CountryGHA   -0.2750     1.4632  -0.188    0.851
## CountryBKF    1.5652     1.2818   1.221    0.224
## CountryZIM   -0.2750     1.6811  -0.164    0.870
## CountryZAM   -0.2750     4.0865  -0.067    0.946
## CountrySAF   -0.2750     1.7920  -0.153    0.878
## CountryUGA   -0.2750     2.0899  -0.132    0.895
## CountryURT    0.2783     1.9631   0.142    0.887
## CountrySWA   -0.2750     4.0865  -0.067    0.946
## CountrySEN   -0.2750     1.5206  -0.181    0.857
## CountryZAI   -0.2750     4.0865  -0.067    0.946
## CountryMOZ   -0.2750     2.9987  -0.092    0.927
## CountryMLI   -0.2750     1.4632  -0.188    0.851
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.422e-15  9.254e-01   0.000   1.0000
## CountryKEN   2.750e-01  1.463e+00   0.188   0.8512
## CountryETH   6.500e-01  4.034e+00   0.161   0.8722
## CountryGUI   1.545e-15  1.373e+00   0.000   1.0000
## CountryGHA   2.371e-15  1.309e+00   0.000   1.0000
## CountryBKF   1.840e+00  1.102e+00   1.670   0.0972 .
## CountryZIM   3.755e-15  1.549e+00   0.000   1.0000
## CountryZAM   4.329e-15  4.034e+00   0.000   1.0000
## CountrySAF   4.636e-15  1.668e+00   0.000   1.0000
## CountryUGA   5.233e-15  1.985e+00   0.000   1.0000
## CountryURT   5.533e-01  1.851e+00   0.299   0.7654
## CountrySWA   9.089e-15  4.034e+00   0.000   1.0000
## CountrySEN   3.456e-15  1.373e+00   0.000   1.0000
## CountryZAI   2.112e-15  4.034e+00   0.000   1.0000
## CountryMOZ   2.917e-15  2.926e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.269e-14  2.776e+00   0.000    1.000
## CountryMLI  -1.437e-14  2.926e+00   0.000    1.000
```

```
## CountryKEN   2.750e-01  2.999e+00   0.092    0.927
## CountryETH   6.500e-01  4.809e+00   0.135    0.893
## CountryGUI  -1.277e-14  2.956e+00   0.000    1.000
## CountryGHA  -1.305e-14  2.926e+00   0.000    1.000
## CountryBKF   1.840e+00  2.840e+00   0.648    0.518
## CountryZIM  -1.363e-14  3.041e+00   0.000    1.000
## CountryZAM  -1.476e-14  4.809e+00   0.000    1.000
## CountrySAF  -1.609e-14  3.104e+00   0.000    1.000
## CountryUGA  -1.091e-14  3.285e+00   0.000    1.000
## CountryURT   5.533e-01  3.206e+00   0.173    0.863
## CountrySWA  -1.869e-14  4.809e+00   0.000    1.000
## CountrySEN  -1.246e-14  2.956e+00   0.000    1.000
## CountryZAI  -1.801e-14  4.809e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.000e-14  3.926e+00   0.000    1.000
## CountryMOZ  -1.951e-14  4.809e+00   0.000    1.000
## CountryMLI  -1.936e-14  4.034e+00   0.000    1.000
## CountryKEN   2.750e-01  4.086e+00   0.067    0.946
## CountryETH   6.500e-01  5.552e+00   0.117    0.907
## CountryGUI  -1.874e-14  4.055e+00   0.000    1.000
## CountryGHA  -1.995e-14  4.034e+00   0.000    1.000
## CountryBKF   1.840e+00  3.972e+00   0.463    0.644
## CountryZIM  -1.938e-14  4.118e+00   0.000    1.000
## CountryZAM  -2.624e-14  5.552e+00   0.000    1.000
## CountrySAF  -2.148e-14  4.164e+00   0.000    1.000
## CountryUGA  -1.961e-14  4.301e+00   0.000    1.000
## CountryURT   5.533e-01  4.241e+00   0.130    0.896
## CountrySWA  -1.228e-14  5.552e+00   0.000    1.000
```

```
## CountrySEN  -2.116e-14  4.055e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -6.083e-16  1.014e+00   0.000    1.000
## CountryZAI  -1.230e-14  4.055e+00   0.000    1.000
## CountryMOZ  -1.315e-15  2.956e+00   0.000    1.000
## CountryMLI   3.622e-16  1.373e+00   0.000    1.000
## CountryKEN   2.750e-01  1.521e+00   0.181    0.857
## CountryETH   6.500e-01  4.055e+00   0.160    0.873
## CountryGUI   1.186e-15  1.434e+00   0.000    1.000
## CountryGHA  -2.295e-16  1.373e+00   0.000    1.000
## CountryBKF   1.840e+00  1.177e+00   1.563    0.120
## CountryZIM   1.522e-15  1.603e+00   0.000    1.000
## CountryZAM   1.966e-14  4.055e+00   0.000    1.000
## CountrySAF   7.226e-17  1.719e+00   0.000    1.000
## CountryUGA   2.200e-15  2.027e+00   0.000    1.000
## CountryURT   5.533e-01  1.897e+00   0.292    0.771
## CountrySWA   4.873e-16  4.055e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.209e-15  3.926e+00   0.000    1.000
## CountrySEN  -3.820e-15  4.055e+00   0.000    1.000
## CountryZAI  -1.170e-15  5.552e+00   0.000    1.000
## CountryMOZ  -8.393e-15  4.809e+00   0.000    1.000
## CountryMLI  -6.872e-15  4.034e+00   0.000    1.000
## CountryKEN   2.750e-01  4.086e+00   0.067    0.946
## CountryETH   6.500e-01  5.552e+00   0.117    0.907
## CountryGUI  -7.273e-15  4.055e+00   0.000    1.000
## CountryGHA  -7.470e-15  4.034e+00   0.000    1.000
## CountryBKF   1.840e+00  3.972e+00   0.463    0.644
## CountryZIM  -5.062e-15  4.118e+00   0.000    1.000
## CountryZAM  -9.896e-16  5.552e+00   0.000    1.000
## CountrySAF  -6.557e-15  4.164e+00   0.000    1.000
## CountryUGA  -7.346e-15  4.301e+00   0.000    1.000
## CountryURT   5.533e-01  4.241e+00   0.130    0.896
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.55333    1.60285   0.345    0.730
## CountrySWA  -0.55333    4.24076  -0.130    0.896
## CountrySEN  -0.55333    1.89652  -0.292    0.771
## CountryZAI  -0.55333    4.24076  -0.130    0.896
## CountryMOZ  -0.55333    3.20571  -0.173    0.863
## CountryMLI  -0.55333    1.85082  -0.299    0.765
## CountryKEN  -0.27833    1.96309  -0.142    0.887
## CountryETH   0.09667    4.24076   0.023    0.982
## CountryGUI  -0.55333    1.89652  -0.292    0.771
## CountryGHA  -0.55333    1.85082  -0.299    0.765
## CountryBKF   1.28690    1.71103   0.752    0.453
## CountryZIM  -0.55333    2.02747  -0.273    0.785
## CountryZAM  -0.55333    4.24076  -0.130    0.896
## CountrySAF  -0.55333    2.12038  -0.261    0.795
## CountryUGA  -0.55333    2.37742  -0.233    0.816
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TvTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -6.536  -0.104   0.000   0.000  60.134
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.818e-14  3.346e+00   0.000   1.0000
## CountryURT   1.142e+00  4.530e+00   0.252   0.8014
## CountrySWA  -2.422e-14  8.195e+00   0.000   1.0000
## CountrySEN  -2.735e-14  3.863e+00   0.000   1.0000
## CountryZAI  -3.795e-14  8.195e+00   0.000   1.0000
## CountryMOZ   1.000e+00  6.259e+00   0.160   0.8733
## CountryMLI  -2.995e-14  3.782e+00   0.000   1.0000
## CountryKEN   1.042e-01  3.982e+00   0.026   0.9792
## CountryETH   4.400e-01  8.195e+00   0.054   0.9573
## CountryGUI  -2.101e-14  3.863e+00   0.000   1.0000
```

```
## CountryGHA  -2.641e-14  3.782e+00   0.000   1.0000
## CountryBKF   6.536e+00  3.535e+00   1.849   0.0665 .
## CountryZIM  -2.864e-14  4.097e+00   0.000   1.0000
## CountryZAM  -1.832e-15  8.195e+00   0.000   1.0000
## CountrySAF  -2.544e-14  4.265e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 55.96374)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 7890.9  on 141  degrees of freedom
## AIC: 1086.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.767e-15  1.388e+00   0.000    1.000
## CountryUGA   4.078e-15  2.238e+00   0.000    1.000
## CountryURT   5.533e-01  2.120e+00   0.261    0.795
## CountrySWA  -1.592e-15  4.164e+00   0.000    1.000
## CountrySEN  -2.276e-15  1.719e+00   0.000    1.000
## CountryZAI  -2.811e-15  4.164e+00   0.000    1.000
## CountryMOZ  -2.264e-15  3.104e+00   0.000    1.000
## CountryMLI  -2.798e-15  1.668e+00   0.000    1.000
## CountryKEN   2.750e-01  1.792e+00   0.153    0.878
## CountryETH   6.500e-01  4.164e+00   0.156    0.876
## CountryGUI   1.786e-15  1.719e+00   0.000    1.000
## CountryGHA  -2.616e-15  1.668e+00   0.000    1.000
## CountryBKF   1.840e+00  1.512e+00   1.217    0.226
## CountryZIM  -2.458e-15  1.862e+00   0.000    1.000
## CountryZAM  -1.001e-15  4.164e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
```

```
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.322e-14  3.926e+00   0.000    1.000
## CountrySAF  -6.585e-14  4.164e+00   0.000    1.000
## CountryUGA  -6.922e-14  4.301e+00   0.000    1.000
## CountryURT   5.533e-01  4.241e+00   0.130    0.896
## CountrySWA  -7.408e-14  5.552e+00   0.000    1.000
## CountrySEN  -7.498e-14  4.055e+00   0.000    1.000
## CountryZAI  -7.563e-14  5.552e+00   0.000    1.000
## CountryMOZ  -7.351e-14  4.809e+00   0.000    1.000
## CountryMLI  -7.260e-14  4.034e+00   0.000    1.000
## CountryKEN   2.750e-01  4.086e+00   0.067    0.946
## CountryETH   6.500e-01  5.552e+00   0.117    0.907
## CountryGUI  -7.408e-14  4.055e+00   0.000    1.000
## CountryGHA  -7.397e-14  4.034e+00   0.000    1.000
## CountryBKF   1.840e+00  3.972e+00   0.463    0.644
## CountryZIM  -7.372e-14  4.118e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TzTsg) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
```

```
##     Min       1Q   Median       3Q      Max
## -1.8402  -0.8751   0.0000   0.0000  31.4898
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.222e-15  1.242e+00   0.000    1.000
## CountryZAM  -1.814e-14  4.118e+00   0.000    1.000
## CountrySAF  -1.850e-15  1.862e+00   0.000    1.000
## CountryUGA   1.740e-15  2.150e+00   0.000    1.000
## CountryURT   5.533e-01  2.027e+00   0.273    0.785
## CountrySWA   1.445e-15  4.118e+00   0.000    1.000
## CountrySEN   1.765e-15  1.603e+00   0.000    1.000
## CountryZAI  -6.094e-15  4.118e+00   0.000    1.000
## CountryMOZ   1.689e-15  3.041e+00   0.000    1.000
## CountryMLI   5.128e-15  1.549e+00   0.000    1.000
## CountryKEN   2.750e-01  1.681e+00   0.164    0.870
## CountryETH   6.500e-01  4.118e+00   0.158    0.875
## CountryGUI   7.305e-16  1.603e+00   0.000    1.000
## CountryGHA   3.877e-15  1.549e+00   0.000    1.000
## CountryBKF   1.840e+00  1.378e+00   1.335    0.184
##
## (Dispersion parameter for gaussian family taken to be 15.41486)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2173.5  on 141  degrees of freedom
## AIC: 885.65
##
## Number of Fisher Scoring iterations: 2
```

```
#======== Glm TcTvTz per country
data$Country <- relevel(data$Country, ref= "BKF")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.15488    0.09274   1.670   0.0971 .
## CountryZIM  -0.15488    0.21350  -0.725   0.4694
## CountryZAM  -0.15488    0.61516  -0.252   0.8016
## CountrySAF  -0.15488    0.23415  -0.661   0.5094
## CountryUGA  -0.15488    0.28734  -0.539   0.5907
## CountryURT  -0.15488    0.26502  -0.584   0.5599
```

```
## CountrySWA  -0.15488    0.61516  -0.252   0.8016
## CountrySEN  -0.15488    0.18236  -0.849   0.3971
## CountryZAI  -0.15488    0.61516  -0.252   0.8016
## CountryMOZ  -0.15488    0.43990  -0.352   0.7253
## CountryMLI  -0.15488    0.17072  -0.907   0.3658
## CountryKEN  -0.15488    0.19854  -0.780   0.4366
## CountryETH  -0.15488    0.61516  -0.252   0.8016
## CountryGUI  -0.15488    0.18236  -0.849   0.3971
## CountryGHA   0.23067    0.17072   1.351   0.1788
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GHA")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3856     0.1433   2.690  0.00801 **
## CountryBKF   -0.2307     0.1707  -1.351  0.17881
## CountryZIM   -0.3856     0.2398  -1.607  0.11018
## CountryZAM   -0.3856     0.6248  -0.617  0.53817
## CountrySAF   -0.3856     0.2584  -1.492  0.13792
## CountryUGA   -0.3856     0.3074  -1.254  0.21186
## CountryURT   -0.3856     0.2867  -1.345  0.18081
## CountrySWA   -0.3856     0.6248  -0.617  0.53817
## CountrySEN   -0.3856     0.2126  -1.813  0.07188 .
## CountryZAI   -0.3856     0.6248  -0.617  0.53817
## CountryMOZ   -0.3856     0.4533  -0.851  0.39643
## CountryMLI   -0.3856     0.2027  -1.902  0.05921 .
## CountryKEN   -0.3856     0.2266  -1.701  0.09111 .
## CountryETH   -0.3856     0.6248  -0.617  0.53817
## CountryGUI   -0.3856     0.2126  -1.813  0.07188 .
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "GUI")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.111e-17  1.570e-01   0.000   1.0000
## CountryGHA   3.856e-01  2.126e-01   1.813   0.0719 .
## CountryBKF   1.549e-01  1.824e-01   0.849   0.3971
## CountryZIM  -3.130e-17  2.483e-01   0.000   1.0000
## CountryZAM  -2.674e-17  6.281e-01   0.000   1.0000
## CountrySAF  -8.141e-18  2.662e-01   0.000   1.0000
## CountryUGA   4.088e-18  3.140e-01   0.000   1.0000
## CountryURT  -5.633e-17  2.938e-01   0.000   1.0000
## CountrySWA  -5.675e-17  6.281e-01   0.000   1.0000
## CountrySEN   8.960e-18  2.221e-01   0.000   1.0000
## CountryZAI  -5.486e-16  6.281e-01   0.000   1.0000
## CountryMOZ   3.196e-16  4.578e-01   0.000   1.0000
## CountryMLI  -1.150e-18  2.126e-01   0.000   1.0000
## CountryKEN  -2.538e-17  2.355e-01   0.000   1.0000
## CountryETH   2.723e-16  6.281e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "ETH")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.759e-16  6.081e-01   0.000    1.000
## CountryGUI  -1.885e-16  6.281e-01   0.000    1.000
## CountryGHA   3.856e-01  6.248e-01   0.617    0.538
## CountryBKF   1.549e-01  6.152e-01   0.252    0.802
## CountryZIM  -6.738e-16  6.378e-01   0.000    1.000
## CountryZAM  -6.426e-16  8.600e-01   0.000    1.000
## CountrySAF  -6.638e-16  6.450e-01   0.000    1.000
## CountryUGA  -6.731e-16  6.662e-01   0.000    1.000
## CountryURT  -6.605e-16  6.569e-01   0.000    1.000
## CountrySWA  -1.001e-15  8.600e-01   0.000    1.000
## CountrySEN  -8.720e-16  6.281e-01   0.000    1.000
## CountryZAI  -9.147e-16  8.600e-01   0.000    1.000
## CountryMOZ  -3.195e-16  7.448e-01   0.000    1.000
## CountryMLI  -6.063e-16  6.248e-01   0.000    1.000
## CountryKEN  -7.006e-16  6.330e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Country <- relevel(data$Country, ref= "KEN")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
```

```
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.842e-16  1.756e-01   0.000   1.0000
## CountryETH  -7.399e-16  6.330e-01   0.000   1.0000
## CountryGUI  -5.957e-16  2.355e-01   0.000   1.0000
## CountryGHA   3.856e-01  2.266e-01   1.701   0.0911 .
## CountryBKF   1.549e-01  1.985e-01   0.780   0.4366
## CountryZIM  -9.688e-17  2.604e-01   0.000   1.0000
## CountryZAM  -2.043e-17  6.330e-01   0.000   1.0000
## CountrySAF  -1.546e-17  2.776e-01   0.000   1.0000
## CountryUGA  -6.666e-17  3.237e-01   0.000   1.0000
## CountryURT   3.350e-18  3.041e-01   0.000   1.0000
## CountrySWA  -3.127e-16  6.330e-01   0.000   1.0000
## CountrySEN   4.883e-16  2.355e-01   0.000   1.0000
## CountryZAI   6.731e-16  6.330e-01   0.000   1.0000
## CountryMOZ  -6.895e-17  4.645e-01   0.000   1.0000
## CountryMLI  -1.487e-16  2.266e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MLI")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.575e-16  1.433e-01   0.000   1.0000
## CountryKEN   9.424e-16  2.266e-01   0.000   1.0000
## CountryETH  -3.871e-18  6.248e-01   0.000   1.0000
## CountryGUI   5.605e-16  2.126e-01   0.000   1.0000
## CountryGHA   3.856e-01  2.027e-01   1.902   0.0592 .
## CountryBKF   1.549e-01  1.707e-01   0.907   0.3658
## CountryZIM   2.216e-16  2.398e-01   0.000   1.0000
## CountryZAM   1.622e-16  6.248e-01   0.000   1.0000
```

```
## CountrySAF   2.143e-16  2.584e-01   0.000   1.0000
## CountryUGA  -4.359e-17  3.074e-01   0.000   1.0000
## CountryURT   3.818e-16  2.867e-01   0.000   1.0000
## CountrySWA   5.115e-16  6.248e-01   0.000   1.0000
## CountrySEN   1.825e-16  2.126e-01   0.000   1.0000
## CountryZAI   1.313e-16  6.248e-01   0.000   1.0000
## CountryMOZ   1.752e-16  4.533e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "MOZ")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  9.313e-16  4.300e-01   0.000    1.000
## CountryMLI  -1.292e-15  4.533e-01   0.000    1.000
## CountryKEN  -5.336e-16  4.645e-01   0.000    1.000
## CountryETH  -2.264e-15  7.448e-01   0.000    1.000
## CountryGUI  -8.098e-16  4.578e-01   0.000    1.000
## CountryGHA   3.856e-01  4.533e-01   0.851    0.396
## CountryBKF   1.549e-01  4.399e-01   0.352    0.725
## CountryZIM  -1.321e-15  4.711e-01   0.000    1.000
## CountryZAM  -1.397e-15  7.448e-01   0.000    1.000
## CountrySAF  -1.448e-15  4.808e-01   0.000    1.000
## CountryUGA  -1.319e-15  5.088e-01   0.000    1.000
## CountryURT  -1.320e-15  4.965e-01   0.000    1.000
## CountrySWA  -1.167e-15  7.448e-01   0.000    1.000
## CountrySEN  -1.199e-15  4.578e-01   0.000    1.000
## CountryZAI  -1.490e-15  7.448e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
```

```
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAI")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.519e-15  6.081e-01   0.000    1.000
## CountryMOZ  -1.173e-15  7.448e-01   0.000    1.000
## CountryMLI  -1.436e-15  6.248e-01   0.000    1.000
## CountryKEN  -2.066e-15  6.330e-01   0.000    1.000
## CountryETH  -4.228e-16  8.600e-01   0.000    1.000
## CountryGUI  -1.239e-15  6.281e-01   0.000    1.000
## CountryGHA   3.856e-01  6.248e-01   0.617    0.538
## CountryBKF   1.549e-01  6.152e-01   0.252    0.802
## CountryZIM  -1.457e-15  6.378e-01   0.000    1.000
## CountryZAM  -1.709e-15  8.600e-01   0.000    1.000
## CountrySAF  -4.173e-16  6.450e-01   0.000    1.000
## CountryUGA  -1.643e-15  6.662e-01   0.000    1.000
## CountryURT  -1.502e-15  6.569e-01   0.000    1.000
## CountrySWA  -1.154e-15  8.600e-01   0.000    1.000
## CountrySEN  -1.506e-15  6.281e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SEN")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.846e-16  1.570e-01   0.000   1.0000
## CountryZAI  -1.088e-15  6.281e-01   0.000   1.0000
## CountryMOZ  -1.567e-16  4.578e-01   0.000   1.0000
## CountryMLI   5.867e-16  2.126e-01   0.000   1.0000
## CountryKEN  -5.107e-16  2.355e-01   0.000   1.0000
## CountryETH  -6.463e-16  6.281e-01   0.000   1.0000
## CountryGUI   4.668e-16  2.221e-01   0.000   1.0000
## CountryGHA   3.856e-01  2.126e-01   1.813   0.0719 .
## CountryBKF   1.549e-01  1.824e-01   0.849   0.3971
## CountryZIM   3.945e-16  2.483e-01   0.000   1.0000
## CountryZAM   2.383e-15  6.281e-01   0.000   1.0000
## CountrySAF   1.461e-16  2.662e-01   0.000   1.0000
## CountryUGA   1.687e-16  3.140e-01   0.000   1.0000
## CountryURT   2.270e-16  2.938e-01   0.000   1.0000
## CountrySWA   2.311e-16  6.281e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SWA")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.335e-15  6.081e-01   0.000    1.000
## CountrySEN  -1.273e-15  6.281e-01   0.000    1.000
## CountryZAI  -7.438e-16  8.600e-01   0.000    1.000
```

```
## CountryMOZ  -1.282e-15  7.448e-01   0.000    1.000
## CountryMLI  -1.292e-15  6.248e-01   0.000    1.000
## CountryKEN  -1.014e-15  6.330e-01   0.000    1.000
## CountryETH  -2.095e-15  8.600e-01   0.000    1.000
## CountryGUI  -1.020e-15  6.281e-01   0.000    1.000
## CountryGHA   3.856e-01  6.248e-01   0.617    0.538
## CountryBKF   1.549e-01  6.152e-01   0.252    0.802
## CountryZIM  -1.030e-15  6.378e-01   0.000    1.000
## CountryZAM  -3.198e-15  8.600e-01   0.000    1.000
## CountrySAF  -1.091e-15  6.450e-01   0.000    1.000
## CountryUGA  -1.115e-15  6.662e-01   0.000    1.000
## CountryURT  -3.148e-16  6.569e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "URT")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  8.724e-18  2.483e-01   0.000    1.000
## CountrySWA  -1.264e-15  6.569e-01   0.000    1.000
## CountrySEN  -2.020e-16  2.938e-01   0.000    1.000
## CountryZAI  -5.886e-16  6.569e-01   0.000    1.000
## CountryMOZ  -3.753e-16  4.965e-01   0.000    1.000
## CountryMLI  -4.991e-17  2.867e-01   0.000    1.000
## CountryKEN   1.979e-16  3.041e-01   0.000    1.000
## CountryETH  -4.254e-16  6.569e-01   0.000    1.000
## CountryGUI  -2.475e-16  2.938e-01   0.000    1.000
## CountryGHA   3.856e-01  2.867e-01   1.345    0.181
## CountryBKF   1.549e-01  2.650e-01   0.584    0.560
## CountryZIM   4.747e-17  3.140e-01   0.000    1.000
## CountryZAM   7.452e-17  6.569e-01   0.000    1.000
## CountrySAF   6.471e-17  3.284e-01   0.000    1.000
## CountryUGA   7.143e-17  3.682e-01   0.000    1.000
```

```
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "UGA")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  8.308e-16  2.720e-01   0.000    1.000
## CountryURT  -7.052e-16  3.682e-01   0.000    1.000
## CountrySWA  -8.091e-16  6.662e-01   0.000    1.000
## CountrySEN  -5.799e-16  3.140e-01   0.000    1.000
## CountryZAI  -8.382e-16  6.662e-01   0.000    1.000
## CountryMOZ  -1.284e-15  5.088e-01   0.000    1.000
## CountryMLI  -7.760e-16  3.074e-01   0.000    1.000
## CountryKEN  -1.108e-15  3.237e-01   0.000    1.000
## CountryETH  -1.235e-15  6.662e-01   0.000    1.000
## CountryGUI  -4.197e-16  3.140e-01   0.000    1.000
## CountryGHA   3.856e-01  3.074e-01   1.254    0.212
## CountryBKF   1.549e-01  2.873e-01   0.539    0.591
## CountryZIM  -6.166e-16  3.331e-01   0.000    1.000
## CountryZAM   3.259e-16  6.662e-01   0.000    1.000
## CountrySAF  -6.171e-16  3.467e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "SAF")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.726e-16  2.150e-01   0.000    1.000
## CountryUGA   3.020e-16  3.467e-01   0.000    1.000
## CountryURT  -3.659e-16  3.284e-01   0.000    1.000
## CountrySWA  -2.301e-16  6.450e-01   0.000    1.000
## CountrySEN  -2.245e-17  2.662e-01   0.000    1.000
## CountryZAI  -5.800e-16  6.450e-01   0.000    1.000
## CountryMOZ  -3.928e-16  4.808e-01   0.000    1.000
## CountryMLI  -3.935e-16  2.584e-01   0.000    1.000
## CountryKEN  -4.212e-17  2.776e-01   0.000    1.000
## CountryETH  -7.715e-17  6.450e-01   0.000    1.000
## CountryGUI  -4.686e-17  2.662e-01   0.000    1.000
## CountryGHA   3.856e-01  2.584e-01   1.492    0.138
## CountryBKF   1.549e-01  2.342e-01   0.661    0.509
## CountryZIM  -1.698e-16  2.885e-01   0.000    1.000
## CountryZAM  -2.079e-16  6.450e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZAM")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.542e-15  6.081e-01   0.000    1.000
## CountrySAF  -5.088e-15  6.450e-01   0.000    1.000
```

```
## CountryUGA  -5.235e-15  6.662e-01   0.000    1.000
## CountryURT  -5.387e-15  6.569e-01   0.000    1.000
## CountrySWA  -5.570e-15  8.600e-01   0.000    1.000
## CountrySEN  -5.956e-15  6.281e-01   0.000    1.000
## CountryZAI  -5.664e-15  8.600e-01   0.000    1.000
## CountryMOZ  -5.484e-15  7.448e-01   0.000    1.000
## CountryMLI  -5.579e-15  6.248e-01   0.000    1.000
## CountryKEN  -4.808e-15  6.330e-01   0.000    1.000
## CountryETH  -5.076e-15  8.600e-01   0.000    1.000
## CountryGUI  -5.719e-15  6.281e-01   0.000    1.000
## CountryGHA   3.856e-01  6.248e-01   0.617    0.538
## CountryBKF   1.549e-01  6.152e-01   0.252    0.802
## CountryZIM  -5.438e-15  6.378e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

```
data$Country <- relevel(data$Country, ref= "ZIM")
model1<-glm((Prev_TcTvTz) ~ Country,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.1549   0.0000   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.150e-17  1.923e-01   0.000    1.000
## CountryZAM  -1.619e-15  6.378e-01   0.000    1.000
## CountrySAF  -6.904e-16  2.885e-01   0.000    1.000
## CountryUGA  -3.656e-16  3.331e-01   0.000    1.000
## CountryURT   2.697e-16  3.140e-01   0.000    1.000
## CountrySWA  -1.530e-16  6.378e-01   0.000    1.000
## CountrySEN   1.372e-16  2.483e-01   0.000    1.000
## CountryZAI  -7.134e-16  6.378e-01   0.000    1.000
## CountryMOZ  -3.098e-16  4.711e-01   0.000    1.000
## CountryMLI   3.191e-16  2.398e-01   0.000    1.000
## CountryKEN   2.307e-16  2.604e-01   0.000    1.000
## CountryETH  -9.883e-16  6.378e-01   0.000    1.000
## CountryGUI   1.577e-17  2.483e-01   0.000    1.000
## CountryGHA   3.856e-01  2.398e-01   1.607    0.110
```

```
## CountryBKF   1.549e-01  2.135e-01   0.725    0.469
##
## (Dispersion parameter for gaussian family taken to be 0.3698193)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 52.145  on 141  degrees of freedom
## AIC: 303.76
##
## Number of Fisher Scoring iterations: 2
```

Statistics for Supplementary table 4

```
#====== Glm Tc per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.4578     2.4439   1.415  0.15924
## SpeciesGt    -2.1635     2.8355  -0.763  0.44669
## SpeciesGpp   -3.4578     7.7283  -0.447  0.65524
## SpeciesGpg   -2.5937     2.5883  -1.002  0.31795
## SpeciesGp     7.8708     2.9210   2.695  0.00788 **
## SpeciesGmsm   0.7582     4.0895   0.185  0.85317
## SpeciesGmm    3.6385     3.5626   1.021  0.30880
## SpeciesGmed   5.7572     4.4058   1.307  0.19336
## SpeciesGff   -0.8644     4.8878  -0.177  0.85987
## SpeciesGb    -0.6578     4.0895  -0.161  0.87244
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2

data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.8000     3.2789   0.854   0.3945
## SpeciesGa     0.6578     4.0895   0.161   0.8724
## SpeciesGt    -1.5058     3.5803  -0.421   0.6747
## SpeciesGpp   -2.8000     8.0315  -0.349   0.7279
## SpeciesGpg   -1.9359     3.3878  -0.571   0.5686
## SpeciesGp     8.5286     3.6484   2.338   0.0208 *
## SpeciesGmsm   1.4160     4.6370   0.305   0.7605
## SpeciesGmm    4.2963     4.1797   1.028   0.3057
## SpeciesGmed   6.4150     4.9183   1.304   0.1942
## SpeciesGff   -0.2067     5.3544  -0.039   0.9693
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.5933     4.2330   0.613   0.5411
## SpeciesGb     0.2067     5.3544   0.039   0.9693
## SpeciesGa     0.8644     4.8878   0.177   0.8599
## SpeciesGt    -1.2991     4.4705  -0.291   0.7718
## SpeciesGpp   -2.5933     8.4660  -0.306   0.7598
```

```
## SpeciesGpg   -1.7293     4.3179  -0.400   0.6894
## SpeciesGp     8.7352     4.5253   1.930   0.0555 .
## SpeciesGmsm   1.6227     5.3544   0.303   0.7623
## SpeciesGmm    4.5029     4.9636   0.907   0.3658
## SpeciesGmed   6.6217     5.5997   1.183   0.2389
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.215      3.666   2.514   0.0130 *
## SpeciesGff    -6.622      5.600  -1.183   0.2389
## SpeciesGb     -6.415      4.918  -1.304   0.1942
## SpeciesGa     -5.757      4.406  -1.307   0.1934
## SpeciesGt     -7.921      3.938  -2.011   0.0461 *
## SpeciesGpp    -9.215      8.197  -1.124   0.2628
## SpeciesGpg    -8.351      3.764  -2.219   0.0280 *
## SpeciesGp      2.114      4.000   0.528   0.5980
## SpeciesGmsm   -4.999      4.918  -1.016   0.3111
## SpeciesGmm    -2.119      4.490  -0.472   0.6377
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    7.096      2.592   2.738  0.00696 **
## SpeciesGmed    2.119      4.490   0.472  0.63770
## SpeciesGff    -4.503      4.964  -0.907  0.36580
## SpeciesGb     -4.296      4.180  -1.028  0.30571
## SpeciesGa     -3.638      3.563  -1.021  0.30880
## SpeciesGt     -5.802      2.964  -1.957  0.05222 .
## SpeciesGpp    -7.096      7.776  -0.913  0.36300
## SpeciesGpg    -6.232      2.729  -2.284  0.02382 *
## SpeciesGp      4.232      3.046   1.389  0.16683
## SpeciesGmsm   -2.880      4.180  -0.689  0.49186
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.2160     3.2789   1.286   0.2005
```

```
## SpeciesGmm    2.8803     4.1797   0.689   0.4919
## SpeciesGmed   4.9990     4.9183   1.016   0.3111
## SpeciesGff   -1.6227     5.3544  -0.303   0.7623
## SpeciesGb    -1.4160     4.6370  -0.305   0.7605
## SpeciesGa    -0.7582     4.0895  -0.185   0.8532
## SpeciesGt    -2.9218     3.5803  -0.816   0.4158
## SpeciesGpp   -4.2160     8.0315  -0.525   0.6004
## SpeciesGpg   -3.3519     3.3878  -0.989   0.3241
## SpeciesGp     7.1126     3.6484   1.950   0.0532 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11.329      1.600   7.081 5.60e-11 ***
## SpeciesGmsm   -7.113      3.648  -1.950  0.05315 .
## SpeciesGmm    -4.232      3.046  -1.389  0.16683
## SpeciesGmed   -2.114      4.000  -0.528  0.59801
## SpeciesGff    -8.735      4.525  -1.930  0.05550 .
## SpeciesGb     -8.529      3.648  -2.338  0.02076 *
## SpeciesGa     -7.871      2.921  -2.695  0.00788 **
## SpeciesGt    -10.034      2.151  -4.665 6.92e-06 ***
## SpeciesGpp   -11.329      7.504  -1.510  0.13330
## SpeciesGpg   -10.465      1.813  -5.773 4.52e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
```

```
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.8641     0.8523   1.014   0.3124
## SpeciesGp    10.4645     1.8128   5.773 4.52e-08 ***
## SpeciesGmsm   3.3519     3.3878   0.989   0.3241
## SpeciesGmm    6.2322     2.7287   2.284   0.0238 *
## SpeciesGmed   8.3509     3.7636   2.219   0.0280 *
## SpeciesGff    1.7293     4.3179   0.400   0.6894
## SpeciesGb     1.9359     3.3878   0.571   0.5686
## SpeciesGa     2.5937     2.5883   1.002   0.3179
## SpeciesGt     0.4302     1.6715   0.257   0.7973
## SpeciesGpp   -0.8641     7.3811  -0.117   0.9070
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
```

```
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.659e-13  7.332e+00   0.000    1.000
## SpeciesGpg  8.641e-01  7.381e+00   0.117    0.907
## SpeciesGp   1.133e+01  7.504e+00   1.510    0.133
## SpeciesGmsm 4.216e+00  8.032e+00   0.525    0.600
## SpeciesGmm  7.096e+00  7.776e+00   0.913    0.363
## SpeciesGmed 9.215e+00  8.197e+00   1.124    0.263
## SpeciesGff  2.593e+00  8.466e+00   0.306    0.760
## SpeciesGb   2.800e+00  8.032e+00   0.349    0.728
## SpeciesGa   3.458e+00  7.728e+00   0.447    0.655
## SpeciesGt   1.294e+00  7.471e+00   0.173    0.863
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Tc) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -11.329   -1.294   -0.864   -0.524   49.136
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.2942     1.4379   0.900   0.3695
## SpeciesGpp   -1.2942     7.4714  -0.173   0.8627
## SpeciesGpg   -0.4302     1.6715  -0.257   0.7973
## SpeciesGp    10.0343     2.1511   4.665 6.92e-06 ***
## SpeciesGmsm   2.9218     3.5803   0.816   0.4158
## SpeciesGmm    5.8020     2.9643   1.957   0.0522 .
## SpeciesGmed   7.9208     3.9378   2.011   0.0461 *
## SpeciesGff    1.2991     4.4705   0.291   0.7718
## SpeciesGb     1.5058     3.5803   0.421   0.6747
## SpeciesGa     2.1635     2.8355   0.763   0.4467
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 53.75452)
```

```
##
##     Null deviance: 10017.9  on 155  degrees of freedom
## Residual deviance:  7848.2  on 146  degrees of freedom
## AIC: 1075.9
##
## Number of Fisher Scoring iterations: 2
```

```
#====== Glm Tv per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9511     5.8977   0.161   0.8721
## SpeciesGt    13.8258     6.8427   2.021   0.0452 *
## SpeciesGpp    1.9089    18.6501   0.102   0.9186
## SpeciesGpg   12.9500     6.2460   2.073   0.0399 *
## SpeciesGp     1.4051     7.0491   0.199   0.8423
## SpeciesGmsm   9.4989     9.8687   0.963   0.3374
## SpeciesGmm   -0.1024     8.5973  -0.012   0.9905
## SpeciesGmed  10.2039    10.6322   0.960   0.3388
## SpeciesGff    3.9022    11.7953   0.331   0.7412
## SpeciesGb     0.5149     9.8687   0.052   0.9585
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.4660     7.9125   0.185    0.853
## SpeciesGa    -0.5149     9.8687  -0.052    0.958
## SpeciesGt    13.3109     8.6399   1.541    0.126
## SpeciesGpp    1.3940    19.3817   0.072    0.943
## SpeciesGpg   12.4351     8.1755   1.521    0.130
## SpeciesGp     0.8902     8.8043   0.101    0.920
## SpeciesGmsm   8.9840    11.1900   0.803    0.423
## SpeciesGmm   -0.6172    10.0866  -0.061    0.951
## SpeciesGmed   9.6890    11.8688   0.816    0.416
## SpeciesGff    3.3873    12.9211   0.262    0.794
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.853     10.215   0.475    0.635
## SpeciesGb     -3.387     12.921  -0.262    0.794
## SpeciesGa     -3.902     11.795  -0.331    0.741
## SpeciesGt      9.924     10.788   0.920    0.359
## SpeciesGpp    -1.993     20.430  -0.098    0.922
## SpeciesGpg     9.048     10.420   0.868    0.387
## SpeciesGp     -2.497     10.920  -0.229    0.819
## SpeciesGmsm    5.597     12.921   0.433    0.666
## SpeciesGmm    -4.005     11.978  -0.334    0.739
## SpeciesGmed    6.302     13.513   0.466    0.642
##
```

```
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11.155      8.847   1.261    0.209
## SpeciesGff    -6.302     13.513  -0.466    0.642
## SpeciesGb     -9.689     11.869  -0.816    0.416
## SpeciesGa    -10.204     10.632  -0.960    0.339
## SpeciesGt      3.622      9.503   0.381    0.704
## SpeciesGpp    -8.295     19.781  -0.419    0.676
## SpeciesGpg     2.746      9.082   0.302    0.763
## SpeciesGp     -8.799      9.652  -0.912    0.363
## SpeciesGmsm   -0.705     11.869  -0.059    0.953
## SpeciesGmm   -10.306     10.835  -0.951    0.343
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.8488     6.2554   0.136   0.8923
## SpeciesGmed  10.3062    10.8347   0.951   0.3431
## SpeciesGff    4.0046    11.9782   0.334   0.7386
## SpeciesGb     0.6172    10.0866   0.061   0.9513
## SpeciesGa     0.1024     8.5973   0.012   0.9905
## SpeciesGt    13.9282     7.1533   1.947   0.0534 .
## SpeciesGpp    2.0112    18.7663   0.107   0.9148
## SpeciesGpg   13.0523     6.5849   1.982   0.0493 *
## SpeciesGp     1.5074     7.3510   0.205   0.8378
## SpeciesGmsm   9.6012    10.0866   0.952   0.3427
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.450      7.912   1.321    0.189
## SpeciesGmm    -9.601     10.087  -0.952    0.343
## SpeciesGmed    0.705     11.869   0.059    0.953
## SpeciesGff    -5.597     12.921  -0.433    0.666
## SpeciesGb     -8.984     11.190  -0.803    0.423
## SpeciesGa     -9.499      9.869  -0.963    0.337
## SpeciesGt      4.327      8.640   0.501    0.617
## SpeciesGpp    -7.590     19.382  -0.392    0.696
## SpeciesGpg     3.451      8.175   0.422    0.674
## SpeciesGp     -8.094      8.804  -0.919    0.359
##
```

```
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.3562     3.8609   0.610  0.54263
## SpeciesGmsm   8.0938     8.8043   0.919  0.35945
## SpeciesGmm   -1.5074     7.3510  -0.205  0.83781
## SpeciesGmed   8.7988     9.6523   0.912  0.36350
## SpeciesGff    2.4971    10.9204   0.229  0.81945
## SpeciesGb    -0.8902     8.8043  -0.101  0.91960
## SpeciesGa    -1.4051     7.0491  -0.199  0.84228
## SpeciesGt    12.4207     5.1910   2.393  0.01800 *
## SpeciesGpp    0.5038    18.1094   0.028  0.97784
## SpeciesGpg   11.5449     4.3746   2.639  0.00922 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13.9011     2.0568   6.759  3.1e-10 ***
## SpeciesGp   -11.5449     4.3746  -2.639  0.00922 **
## SpeciesGmsm  -3.4511     8.1755  -0.422  0.67355
## SpeciesGmm  -13.0523     6.5849  -1.982  0.04934 *
## SpeciesGmed  -2.7461     9.0824  -0.302  0.76282
## SpeciesGff   -9.0477    10.4201  -0.868  0.38665
## SpeciesGb   -12.4351     8.1755  -1.521  0.13042
## SpeciesGa   -12.9500     6.2460  -2.073  0.03990 *
## SpeciesGt     0.8758     4.0337   0.217  0.82841
## SpeciesGpp  -11.0411    17.8121  -0.620  0.53631
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.8600    17.6930   0.162    0.872
## SpeciesGpg   11.0411    17.8121   0.620    0.536
## SpeciesGp    -0.5038    18.1094  -0.028    0.978
## SpeciesGmsm   7.5900    19.3817   0.392    0.696
## SpeciesGmm   -2.0112    18.7663  -0.107    0.915
## SpeciesGmed   8.2950    19.7814   0.419    0.676
## SpeciesGff    1.9933    20.4301   0.098    0.922
## SpeciesGb    -1.3940    19.3817  -0.072    0.943
## SpeciesGa    -1.9089    18.6501  -0.102    0.919
```

```
## SpeciesGt    11.9169    18.0300   0.661    0.510
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Tv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -14.777  -13.901   -2.356    2.192   86.099
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  14.7769     3.4699   4.259 3.67e-05 ***
## SpeciesGpp  -11.9169    18.0300  -0.661   0.5097
## SpeciesGpg   -0.8758     4.0337  -0.217   0.8284
## SpeciesGp   -12.4207     5.1910  -2.393   0.0180 *
## SpeciesGmsm  -4.3269     8.6399  -0.501   0.6173
## SpeciesGmm  -13.9282     7.1533  -1.947   0.0534 .
## SpeciesGmed  -3.6219     9.5027  -0.381   0.7036
## SpeciesGff   -9.9236    10.7883  -0.920   0.3592
## SpeciesGb   -13.3109     8.6399  -1.541   0.1256
## SpeciesGa   -13.8258     6.8427  -2.021   0.0452 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313.0421)
##
##     Null deviance: 50549  on 155  degrees of freedom
## Residual deviance: 45704  on 146  degrees of freedom
## AIC: 1350.8
##
## Number of Fisher Scoring iterations: 2
```

```
#====== glm Tz per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.737      4.725   1.002 0.317808
## SpeciesGt     19.693      5.482   3.592 0.000448 ***
## SpeciesGpp    -4.737     14.943  -0.317 0.751706
## SpeciesGpg    -3.007      5.004  -0.601 0.548904
## SpeciesGp     -3.820      5.648  -0.676 0.499825
## SpeciesGmsm   -4.133      7.907  -0.523 0.602002
## SpeciesGmm    -4.263      6.888  -0.619 0.536969
## SpeciesGmed   11.493      8.519   1.349 0.179364
## SpeciesGff    -4.383      9.451  -0.464 0.643472
## SpeciesGb     -1.271      7.907  -0.161 0.872550
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    3.466      6.340   0.547  0.58541
## SpeciesGa      1.271      7.907   0.161  0.87255
## SpeciesGt     20.963      6.922   3.028  0.00291 **
## SpeciesGpp    -3.466     15.529  -0.223  0.82370
## SpeciesGpg    -1.736      6.550  -0.265  0.79137
```

```
## SpeciesGp     -2.550      7.054  -0.361  0.71828
## SpeciesGmsm   -2.862      8.966  -0.319  0.75002
## SpeciesGmm    -2.992      8.082  -0.370  0.71173
## SpeciesGmed   12.764      9.510   1.342  0.18160
## SpeciesGff    -3.113     10.353  -0.301  0.76410
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3533     8.1845   0.043  0.96562
## SpeciesGb     3.1127    10.3527   0.301  0.76410
## SpeciesGa     4.3833     9.4506   0.464  0.64347
## SpeciesGt    24.0759     8.6438   2.785  0.00606 **
## SpeciesGpp   -0.3533    16.3690  -0.022  0.98281
## SpeciesGpg    1.3767     8.3487   0.165  0.86925
## SpeciesGp     0.5629     8.7496   0.064  0.94880
## SpeciesGmsm   0.2507    10.3527   0.024  0.98072
## SpeciesGmm    0.1204     9.5972   0.013  0.99001
## SpeciesGmed  15.8767    10.8271   1.466  0.14469
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   16.230      7.088   2.290   0.0235 *
## SpeciesGff   -15.877     10.827  -1.466   0.1447
## SpeciesGb    -12.764      9.510  -1.342   0.1816
## SpeciesGa    -11.493      8.519  -1.349   0.1794
## SpeciesGt      8.199      7.614   1.077   0.2833
## SpeciesGpp   -16.230     15.849  -1.024   0.3075
## SpeciesGpg   -14.500      7.277  -1.993   0.0482 *
## SpeciesGp    -15.314      7.734  -1.980   0.0496 *
## SpeciesGmsm  -15.626      9.510  -1.643   0.1025
## SpeciesGmm   -15.756      8.681  -1.815   0.0716 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4737     5.0120   0.095   0.9248
```

```
## SpeciesGmed  15.7562     8.6810   1.815   0.0716 .
## SpeciesGff   -0.1204     9.5972  -0.013   0.9900
## SpeciesGb     2.9923     8.0815   0.370   0.7117
## SpeciesGa     4.2629     6.8883   0.619   0.5370
## SpeciesGt    23.9555     5.7314   4.180 5.01e-05 ***
## SpeciesGpp   -0.4737    15.0359  -0.032   0.9749
## SpeciesGpg    1.2563     5.2759   0.238   0.8121
## SpeciesGp     0.4424     5.8897   0.075   0.9402
## SpeciesGmsm   0.1303     8.0815   0.016   0.9872
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6040     6.3397   0.095 0.924229
## SpeciesGmm   -0.1302     8.0815  -0.016 0.987163
## SpeciesGmed  15.6260     9.5095   1.643 0.102494
## SpeciesGff   -0.2507    10.3527  -0.024 0.980716
## SpeciesGb     2.8620     8.9657   0.319 0.750018
## SpeciesGa     4.1327     7.9070   0.523 0.602002
## SpeciesGt    23.8252     6.9225   3.442 0.000754 ***
## SpeciesGpp   -0.6040    15.5290  -0.039 0.969027
## SpeciesGpg    1.1260     6.5504   0.172 0.863755
## SpeciesGp     0.3122     7.0541   0.044 0.964761
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
```

```
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9162     3.0934   0.296   0.7675
## SpeciesGmsm  -0.3122     7.0541  -0.044   0.9648
## SpeciesGmm   -0.4424     5.8897  -0.075   0.9402
## SpeciesGmed  15.3138     7.7336   1.980   0.0496 *
## SpeciesGff   -0.5629     8.7496  -0.064   0.9488
## SpeciesGb     2.5498     7.0541   0.361   0.7183
## SpeciesGa     3.8205     5.6478   0.676   0.4998
## SpeciesGt    23.5130     4.1592   5.653 8.01e-08 ***
## SpeciesGpp   -0.9162    14.5096  -0.063   0.9497
## SpeciesGpg    0.8138     3.5050   0.232   0.8167
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
```

```
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.7300     1.6479   1.050   0.2955
## SpeciesGp    -0.8138     3.5050  -0.232   0.8167
## SpeciesGmsm  -1.1260     6.5504  -0.172   0.8638
## SpeciesGmm   -1.2563     5.2759  -0.238   0.8121
## SpeciesGmed  14.5000     7.2770   1.993   0.0482 *
## SpeciesGff   -1.3767     8.3487  -0.165   0.8693
## SpeciesGb     1.7360     6.5504   0.265   0.7914
## SpeciesGa     3.0067     5.0044   0.601   0.5489
## SpeciesGt    22.6992     3.2318   7.024  7.6e-11 ***
## SpeciesGpp   -1.7300    14.2714  -0.121   0.9037
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 4.267e-14  1.418e+01   0.000    1.000
## SpeciesGpg  1.730e+00  1.427e+01   0.121    0.904
## SpeciesGp   9.162e-01  1.451e+01   0.063    0.950
## SpeciesGmsm 6.040e-01  1.553e+01   0.039    0.969
## SpeciesGmm  4.737e-01  1.504e+01   0.032    0.975
## SpeciesGmed 1.623e+01  1.585e+01   1.024    0.308
## SpeciesGff  3.533e-01  1.637e+01   0.022    0.983
## SpeciesGb   3.466e+00  1.553e+01   0.223    0.824
## SpeciesGa   4.737e+00  1.494e+01   0.317    0.752
## SpeciesGt   2.443e+01  1.445e+01   1.691    0.093 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Tz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -24.429   -1.730   -1.730   -0.102   75.571
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24.429      2.780   8.787 3.85e-15 ***
## SpeciesGpp   -24.429     14.446  -1.691 0.092957 .
## SpeciesGpg   -22.699      3.232  -7.024 7.60e-11 ***
## SpeciesGp    -23.513      4.159  -5.653 8.01e-08 ***
## SpeciesGmsm  -23.825      6.922  -3.442 0.000754 ***
## SpeciesGmm   -23.955      5.731  -4.180 5.01e-05 ***
## SpeciesGmed   -8.199      7.614  -1.077 0.283300
## SpeciesGff   -24.076      8.644  -2.785 0.006057 **
## SpeciesGb    -20.963      6.922  -3.028 0.002909 **
## SpeciesGa    -19.693      5.482  -3.592 0.000448 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 200.9577)
##
##     Null deviance: 41046  on 155  degrees of freedom
## Residual deviance: 29340  on 146  degrees of freedom
## AIC: 1281.7
##
## Number of Fisher Scoring iterations: 2
```

```
#======= Glm Tsg per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.209      3.655   1.425   0.1562
## SpeciesGt     -5.209      4.240  -1.228   0.2213
## SpeciesGpp    -5.209     11.557  -0.451   0.6529
## SpeciesGpg    -2.603      3.871  -0.673   0.5023
## SpeciesGp     10.174      4.368   2.329   0.0212 *
## SpeciesGmsm   -5.209      6.115  -0.852   0.3957
## SpeciesGmm     7.844      5.328   1.472   0.1431
## SpeciesGmed   -5.209      6.589  -0.791   0.4305
## SpeciesGff     2.391      7.309   0.327   0.7440
## SpeciesGb      3.725      6.115   0.609   0.5434
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    8.934      4.903   1.822   0.0705 .
## SpeciesGa     -3.725      6.115  -0.609   0.5434
## SpeciesGt     -8.934      5.354  -1.669   0.0973 .
## SpeciesGpp    -8.934     12.010  -0.744   0.4582
## SpeciesGpg    -6.328      5.066  -1.249   0.2136
## SpeciesGp      6.449      5.456   1.182   0.2391
## SpeciesGmsm   -8.934      6.934  -1.288   0.1996
```

```
## SpeciesGmm     4.119      6.250   0.659   0.5110
## SpeciesGmed   -8.934      7.355  -1.215   0.2264
## SpeciesGff    -1.334      8.007  -0.167   0.8679
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    7.600      6.330   1.201    0.232
## SpeciesGb      1.334      8.007   0.167    0.868
## SpeciesGa     -2.391      7.309  -0.327    0.744
## SpeciesGt     -7.600      6.685  -1.137    0.257
## SpeciesGpp    -7.600     12.660  -0.600    0.549
## SpeciesGpg    -4.994      6.457  -0.773    0.440
## SpeciesGp      7.783      6.767   1.150    0.252
## SpeciesGmsm   -7.600      8.007  -0.949    0.344
## SpeciesGmm     5.453      7.423   0.735    0.464
## SpeciesGmed   -7.600      8.374  -0.908    0.366
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.767e-14  5.482e+00   0.000   1.0000
## SpeciesGff   7.600e+00  8.374e+00   0.908   0.3656
## SpeciesGb    8.934e+00  7.355e+00   1.215   0.2264
## SpeciesGa    5.209e+00  6.589e+00   0.791   0.4305
## SpeciesGt   -7.456e-14  5.889e+00   0.000   1.0000
## SpeciesGpp  -2.052e-14  1.226e+01   0.000   1.0000
## SpeciesGpg   2.606e+00  5.628e+00   0.463   0.6441
## SpeciesGp    1.538e+01  5.981e+00   2.572   0.0111 *
## SpeciesGmsm -4.917e-14  7.355e+00   0.000   1.0000
## SpeciesGmm   1.305e+01  6.714e+00   1.944   0.0538 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13.053      3.876   3.367 0.000971 ***
## SpeciesGmed  -13.052      6.714  -1.944 0.053810 .
## SpeciesGff    -5.453      7.423  -0.735 0.463775
## SpeciesGb     -4.119      6.250  -0.659 0.510988
## SpeciesGa     -7.844      5.328  -1.472 0.143098
```

```
## SpeciesGt    -13.053      4.433  -2.945 0.003765 **
## SpeciesGpp   -13.053     11.629  -1.122 0.263532
## SpeciesGpg   -10.447      4.081  -2.560 0.011477 *
## SpeciesGp      2.330      4.555   0.512 0.609720
## SpeciesGmsm  -13.053      6.250  -2.088 0.038511 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.580e-14  4.903e+00   0.000  1.00000
## SpeciesGmm   1.305e+01  6.250e+00   2.088  0.03851 *
## SpeciesGmed -8.146e-14  7.355e+00   0.000  1.00000
## SpeciesGff   7.600e+00  8.007e+00   0.949  0.34410
## SpeciesGb    8.934e+00  6.934e+00   1.288  0.19965
## SpeciesGa    5.209e+00  6.115e+00   0.852  0.39574
## SpeciesGt   -6.916e-14  5.354e+00   0.000  1.00000
## SpeciesGpp  -2.379e-13  1.201e+01   0.000  1.00000
## SpeciesGpg   2.606e+00  5.066e+00   0.514  0.60782
## SpeciesGp    1.538e+01  5.456e+00   2.820  0.00548 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   15.383      2.393   6.430 1.71e-09 ***
## SpeciesGmsm  -15.383      5.456  -2.820  0.00548 **
## SpeciesGmm    -2.330      4.555  -0.512  0.60972
## SpeciesGmed  -15.383      5.981  -2.572  0.01112 *
## SpeciesGff    -7.783      6.767  -1.150  0.25198
## SpeciesGb     -6.449      5.456  -1.182  0.23912
## SpeciesGa    -10.174      4.368  -2.329  0.02122 *
## SpeciesGt    -15.383      3.217  -4.782 4.20e-06 ***
## SpeciesGpp   -15.383     11.222  -1.371  0.17255
## SpeciesGpg   -12.777      2.711  -4.713 5.63e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.606      1.275   2.044   0.0427 *
```

```
## SpeciesGp     12.777      2.711   4.713 5.63e-06 ***
## SpeciesGmsm   -2.606      5.066  -0.514   0.6078
## SpeciesGmm    10.447      4.081   2.560   0.0115 *
## SpeciesGmed   -2.606      5.628  -0.463   0.6441
## SpeciesGff     4.994      6.457   0.773   0.4405
## SpeciesGb      6.328      5.066   1.249   0.2136
## SpeciesGa      2.603      3.871   0.673   0.5023
## SpeciesGt     -2.606      2.500  -1.042   0.2990
## SpeciesGpp    -2.606     11.038  -0.236   0.8137
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.793e-13  1.096e+01   0.000    1.000
## SpeciesGpg   2.606e+00  1.104e+01   0.236    0.814
## SpeciesGp    1.538e+01  1.122e+01   1.371    0.173
## SpeciesGmsm  1.490e-13  1.201e+01   0.000    1.000
## SpeciesGmm   1.305e+01  1.163e+01   1.122    0.264
## SpeciesGmed  1.710e-13  1.226e+01   0.000    1.000
## SpeciesGff   7.600e+00  1.266e+01   0.600    0.549
## SpeciesGb    8.934e+00  1.201e+01   0.744    0.458
## SpeciesGa    5.209e+00  1.156e+01   0.451    0.653
## SpeciesGt    1.590e-13  1.117e+01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.816e-14  2.150e+00   0.000  1.00000
## SpeciesGpp  -3.698e-14  1.117e+01   0.000  1.00000
## SpeciesGpg   2.606e+00  2.500e+00   1.042  0.29895
## SpeciesGp    1.538e+01  3.217e+00   4.782  4.2e-06 ***
## SpeciesGmsm -2.116e-14  5.354e+00   0.000  1.00000
## SpeciesGmm   1.305e+01  4.433e+00   2.945  0.00376 **
## SpeciesGmed  2.658e-14  5.889e+00   0.000  1.00000
## SpeciesGff   7.600e+00  6.685e+00   1.137  0.25747
## SpeciesGb    8.934e+00  5.354e+00   1.669  0.09733 .
## SpeciesGa    5.209e+00  4.240e+00   1.228  0.22126
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
#========= Glm TcTv per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2100     0.3704   0.567   0.5716
## SpeciesGt    -0.1088     0.4298  -0.253   0.8004
## SpeciesGpp   -0.2100     1.1714  -0.179   0.8580
## SpeciesGpg   -0.2100     0.3923  -0.535   0.5933
## SpeciesGp     0.7719     0.4427   1.743   0.0834 .
## SpeciesGmsm  -0.2100     0.6198  -0.339   0.7352
## SpeciesGmm   -0.2100     0.5400  -0.389   0.6979
## SpeciesGmed   1.4575     0.6678   2.183   0.0307 *
## SpeciesGff    1.0967     0.7408   1.480   0.1409
## SpeciesGb    -0.2100     0.6198  -0.339   0.7352
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.356e-16  4.970e-01   0.000   1.0000
## SpeciesGa    2.100e-01  6.198e-01   0.339   0.7352
## SpeciesGt    1.012e-01  5.427e-01   0.186   0.8524
## SpeciesGpp  -3.124e-16  1.217e+00   0.000   1.0000
## SpeciesGpg  -1.501e-15  5.135e-01   0.000   1.0000
## SpeciesGp    9.819e-01  5.530e-01   1.776   0.0779 .
## SpeciesGmsm  1.420e-15  7.028e-01   0.000   1.0000
## SpeciesGmm   9.121e-16  6.335e-01   0.000   1.0000
## SpeciesGmed  1.668e+00  7.455e-01   2.237   0.0268 *
## SpeciesGff   1.307e+00  8.115e-01   1.610   0.1095
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.3067     0.6416   2.037   0.0435 *
## SpeciesGb    -1.3067     0.8115  -1.610   0.1095
## SpeciesGa    -1.0967     0.7408  -1.480   0.1409
## SpeciesGt    -1.2055     0.6776  -1.779   0.0773 .
## SpeciesGpp   -1.3067     1.2832  -1.018   0.3102
## SpeciesGpg   -1.3067     0.6545  -1.997   0.0477 *
## SpeciesGp    -0.3248     0.6859  -0.473   0.6366
## SpeciesGmsm  -1.3067     0.8115  -1.610   0.1095
## SpeciesGmm   -1.3067     0.7523  -1.737   0.0845 .
## SpeciesGmed   0.3608     0.8487   0.425   0.6714
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.6675     0.5556   3.001  0.00316 **
## SpeciesGff   -0.3608     0.8487  -0.425  0.67136
## SpeciesGb    -1.6675     0.7455  -2.237  0.02681 *
## SpeciesGa    -1.4575     0.6678  -2.183  0.03066 *
## SpeciesGt    -1.5663     0.5968  -2.624  0.00960 **
## SpeciesGpp   -1.6675     1.2424  -1.342  0.18164
## SpeciesGpg   -1.6675     0.5704  -2.923  0.00402 **
## SpeciesGp    -0.6856     0.6062  -1.131  0.25995
## SpeciesGmsm  -1.6675     0.7455  -2.237  0.02681 *
## SpeciesGmm   -1.6675     0.6805  -2.450  0.01545 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_Tsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -15.383   -2.606   -2.606    0.000   58.297
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13.053      3.876   3.367 0.000971 ***
## SpeciesGmed  -13.052      6.714  -1.944 0.053810 .
## SpeciesGff    -5.453      7.423  -0.735 0.463775
## SpeciesGb     -4.119      6.250  -0.659 0.510988
## SpeciesGa     -7.844      5.328  -1.472 0.143098
## SpeciesGt    -13.053      4.433  -2.945 0.003765 **
## SpeciesGpp   -13.053     11.629  -1.122 0.263532
## SpeciesGpg   -10.447      4.081  -2.560 0.011477 *
## SpeciesGp      2.330      4.555   0.512 0.609720
```

```
## SpeciesGmsm  -13.053      6.250  -2.088 0.038511 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 120.2084)
##
##     Null deviance: 21742  on 155  degrees of freedom
## Residual deviance: 17550  on 146  degrees of freedom
## AIC: 1201.5
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.069e-14  4.970e-01   0.000   1.0000
## SpeciesGmm  -9.375e-15  6.335e-01   0.000   1.0000
## SpeciesGmed  1.667e+00  7.455e-01   2.237   0.0268 *
## SpeciesGff   1.307e+00  8.115e-01   1.610   0.1095
## SpeciesGb   -2.087e-14  7.028e-01   0.000   1.0000
## SpeciesGa    2.100e-01  6.198e-01   0.339   0.7352
## SpeciesGt    1.012e-01  5.427e-01   0.186   0.8524
## SpeciesGpp  -1.159e-14  1.217e+00   0.000   1.0000
## SpeciesGpg  -1.043e-14  5.135e-01   0.000   1.0000
## SpeciesGp    9.819e-01  5.530e-01   1.776   0.0779 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9819     0.2425   4.049 8.31e-05 ***
## SpeciesGmsm  -0.9819     0.5530  -1.776 0.077870 .
## SpeciesGmm   -0.9819     0.4617  -2.127 0.035125 *
## SpeciesGmed   0.6856     0.6062   1.131 0.259953
## SpeciesGff    0.3248     0.6859   0.473 0.636567
## SpeciesGb    -0.9819     0.5530  -1.776 0.077870 .
## SpeciesGa    -0.7719     0.4427  -1.743 0.083353 .
## SpeciesGt    -0.8808     0.3260  -2.701 0.007723 **
## SpeciesGpp   -0.9819     1.1374  -0.863 0.389398
## SpeciesGpg   -0.9819     0.2748  -3.574 0.000477 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.378e-16  1.292e-01   0.000 1.000000
## SpeciesGp    9.819e-01  2.748e-01   3.574 0.000477 ***
## SpeciesGmsm  1.119e-15  5.135e-01   0.000 1.000000
## SpeciesGmm   9.117e-16  4.136e-01   0.000 1.000000
## SpeciesGmed  1.668e+00  5.704e-01   2.923 0.004018 **
```

```
## SpeciesGff   1.307e+00  6.545e-01   1.997 0.047733 *
## SpeciesGb    8.408e-16  5.135e-01   0.000 1.000000
## SpeciesGa    2.100e-01  3.923e-01   0.535 0.593252
## SpeciesGt    1.012e-01  2.533e-01   0.399 0.690275
## SpeciesGpp   1.460e-15  1.119e+00   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.172e-14  1.111e+00   0.000    1.000
## SpeciesGpg  -2.161e-14  1.119e+00   0.000    1.000
## SpeciesGp    9.819e-01  1.137e+00   0.863    0.389
## SpeciesGmsm -2.139e-14  1.217e+00   0.000    1.000
## SpeciesGmm  -2.334e-14  1.179e+00   0.000    1.000
## SpeciesGmed  1.667e+00  1.242e+00   1.342    0.182
## SpeciesGff   1.307e+00  1.283e+00   1.018    0.310
## SpeciesGb   -2.106e-14  1.217e+00   0.000    1.000
## SpeciesGa    2.100e-01  1.171e+00   0.179    0.858
## SpeciesGt    1.012e-01  1.132e+00   0.089    0.929
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TcTv) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6675  -0.1012   0.0000   0.0000   9.0181
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1012     0.2179   0.464  0.64323
## SpeciesGpp   -0.1012     1.1324  -0.089  0.92895
## SpeciesGpg   -0.1012     0.2533  -0.399  0.69028
## SpeciesGp     0.8808     0.3260   2.701  0.00772 **
## SpeciesGmsm  -0.1012     0.5427  -0.186  0.85239
## SpeciesGmm   -0.1012     0.4493  -0.225  0.82218
## SpeciesGmed   1.5663     0.5968   2.624  0.00960 **
## SpeciesGff    1.2055     0.6776   1.779  0.07730 .
## SpeciesGb    -0.1012     0.5427  -0.186  0.85239
## SpeciesGa     0.1088     0.4298   0.253  0.80042
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.234891)
##
##     Null deviance: 209.26  on 155  degrees of freedom
## Residual deviance: 180.29  on 146  degrees of freedom
## AIC: 487.29
##
## Number of Fisher Scoring iterations: 2
```

```r
#========= Glm TcTz per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept) -1.280e-15  9.024e-01   0.000  1.00000
## SpeciesGt    2.742e+00  1.047e+00   2.619  0.00975 **
## SpeciesGpp   6.146e-15  2.854e+00   0.000  1.00000
## SpeciesGpg   2.554e-02  9.557e-01   0.027  0.97872
## SpeciesGp    1.648e-01  1.079e+00   0.153  0.87880
## SpeciesGmsm  7.560e-01  1.510e+00   0.501  0.61738
## SpeciesGmm  -7.380e-16  1.316e+00   0.000  1.00000
## SpeciesGmed  1.665e+00  1.627e+00   1.023  0.30780
## SpeciesGff   6.533e-01  1.805e+00   0.362  0.71789
## SpeciesGb   -3.251e-16  1.510e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.229e-15  1.211e+00   0.000   1.0000
## SpeciesGa    2.897e-15  1.510e+00   0.000   1.0000
## SpeciesGt    2.742e+00  1.322e+00   2.074   0.0398 *
## SpeciesGpp   1.610e-15  2.966e+00   0.000   1.0000
## SpeciesGpg   2.554e-02  1.251e+00   0.020   0.9837
## SpeciesGp    1.648e-01  1.347e+00   0.122   0.9028
## SpeciesGmsm  7.560e-01  1.712e+00   0.442   0.6595
## SpeciesGmm   3.953e-15  1.543e+00   0.000   1.0000
## SpeciesGmed  1.665e+00  1.816e+00   0.917   0.3608
## SpeciesGff   6.533e-01  1.977e+00   0.330   0.7415
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
```

```
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6533     1.5631   0.418    0.677
## SpeciesGb    -0.6533     1.9771  -0.330    0.742
## SpeciesGa    -0.6533     1.8049  -0.362    0.718
## SpeciesGt     2.0890     1.6508   1.265    0.208
## SpeciesGpp   -0.6533     3.1261  -0.209    0.835
## SpeciesGpg   -0.6278     1.5944  -0.394    0.694
## SpeciesGp    -0.4886     1.6710  -0.292    0.770
## SpeciesGmsm   0.1027     1.9771   0.052    0.959
## SpeciesGmm   -0.6533     1.8329  -0.356    0.722
## SpeciesGmed   1.0117     2.0677   0.489    0.625
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.665      1.354   1.230    0.221
## SpeciesGff    -1.012      2.068  -0.489    0.625
## SpeciesGb     -1.665      1.816  -0.917    0.361
## SpeciesGa     -1.665      1.627  -1.023    0.308
## SpeciesGt      1.077      1.454   0.741    0.460
## SpeciesGpp    -1.665      3.027  -0.550    0.583
## SpeciesGpg    -1.639      1.390  -1.180    0.240
## SpeciesGp     -1.500      1.477  -1.016    0.311
## SpeciesGmsm   -0.909      1.816  -0.501    0.617
## SpeciesGmm    -1.665      1.658  -1.004    0.317
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.898e-15  9.572e-01   0.000   1.0000
## SpeciesGmed  1.665e+00  1.658e+00   1.004   0.3169
## SpeciesGff   6.533e-01  1.833e+00   0.356   0.7220
## SpeciesGb    8.380e-15  1.543e+00   0.000   1.0000
## SpeciesGa    8.026e-15  1.316e+00   0.000   1.0000
## SpeciesGt    2.742e+00  1.095e+00   2.505   0.0133 *
## SpeciesGpp   4.068e-15  2.872e+00   0.000   1.0000
## SpeciesGpg   2.554e-02  1.008e+00   0.025   0.9798
## SpeciesGp    1.648e-01  1.125e+00   0.146   0.8837
## SpeciesGmsm  7.560e-01  1.543e+00   0.490   0.6250
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
```

```
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.7560     1.2107   0.624    0.533
## SpeciesGmm   -0.7560     1.5434  -0.490    0.625
## SpeciesGmed   0.9090     1.8161   0.501    0.617
## SpeciesGff   -0.1027     1.9771  -0.052    0.959
## SpeciesGb    -0.7560     1.7123  -0.442    0.659
## SpeciesGa    -0.7560     1.5101  -0.501    0.617
## SpeciesGt     1.9863     1.3221   1.502    0.135
## SpeciesGpp   -0.7560     2.9657  -0.255    0.799
## SpeciesGpg   -0.7305     1.2510  -0.584    0.560
## SpeciesGp    -0.5912     1.3472  -0.439    0.661
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1648     0.5908   0.279  0.78073
## SpeciesGmsm   0.5912     1.3472   0.439  0.66141
## SpeciesGmm   -0.1648     1.1248  -0.146  0.88375
## SpeciesGmed   1.5002     1.4770   1.016  0.31142
## SpeciesGff    0.4886     1.6710   0.292  0.77041
## SpeciesGb    -0.1648     1.3472  -0.122  0.90283
## SpeciesGa    -0.1648     1.0786  -0.153  0.87880
## SpeciesGt     2.5775     0.7943   3.245  0.00146 **
## SpeciesGpp   -0.1648     2.7710  -0.059  0.95267
## SpeciesGpg   -0.1392     0.6694  -0.208  0.83553
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.02554    0.31472   0.081    0.935
## SpeciesGp    0.13922    0.66938   0.208    0.836
## SpeciesGmsm  0.73046    1.25098   0.584    0.560
## SpeciesGmm  -0.02554    1.00759  -0.025    0.980
## SpeciesGmed  1.63946    1.38976   1.180    0.240
## SpeciesGff   0.62779    1.59444   0.394    0.694
## SpeciesGb   -0.02554    1.25098  -0.020    0.984
## SpeciesGa   -0.02554    0.95574  -0.027    0.979
## SpeciesGt    2.71677    0.61722   4.402 2.06e-05 ***
## SpeciesGpp  -0.02554    2.72555  -0.009    0.993
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  9.533e-15  2.707e+00   0.000    1.000
## SpeciesGpg   2.554e-02  2.726e+00   0.009    0.993
## SpeciesGp    1.648e-01  2.771e+00   0.059    0.953
## SpeciesGmsm  7.560e-01  2.966e+00   0.255    0.799
## SpeciesGmm  -1.287e-14  2.872e+00   0.000    1.000
## SpeciesGmed  1.665e+00  3.027e+00   0.550    0.583
## SpeciesGff   6.533e-01  3.126e+00   0.209    0.835
## SpeciesGb    2.041e-15  2.966e+00   0.000    1.000
## SpeciesGa    3.077e-15  2.854e+00   0.000    1.000
## SpeciesGt    2.742e+00  2.759e+00   0.994    0.322
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TcTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -2.7423  -0.1648  -0.0255  -0.0255  19.4777
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.7423     0.5309   5.165 7.75e-07 ***
## SpeciesGpp   -2.7423     2.7589  -0.994  0.32187
## SpeciesGpg   -2.7168     0.6172  -4.402 2.06e-05 ***
## SpeciesGp    -2.5775     0.7943  -3.245  0.00146 **
## SpeciesGmsm  -1.9863     1.3221  -1.502  0.13514
## SpeciesGmm   -2.7423     1.0946  -2.505  0.01333 *
## SpeciesGmed  -1.0773     1.4541  -0.741  0.45995
## SpeciesGff   -2.0890     1.6508  -1.265  0.20773
## SpeciesGb    -2.7423     1.3221  -2.074  0.03981 *
## SpeciesGa    -2.7423     1.0470  -2.619  0.00975 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.329568)
##
##     Null deviance: 1230.7  on 155  degrees of freedom
## Residual deviance: 1070.1  on 146  degrees of freedom
## AIC: 765.11
##
## Number of Fisher Scoring iterations: 2

#======= Glm TcTsg per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.40444    0.85318   0.474 0.636178
## SpeciesGt   -0.40444    0.98990  -0.409 0.683452
## SpeciesGpp  -0.40444    2.69800  -0.150 0.881046
## SpeciesGpg  -0.34566    0.90358  -0.383 0.702612
## SpeciesGp    3.96508    1.01975   3.888 0.000153 ***
## SpeciesGmsm -0.40444    1.42765  -0.283 0.777353
## SpeciesGmm   1.32806    1.24372   1.068 0.287368
## SpeciesGmed -0.40444    1.53810  -0.263 0.792959
## SpeciesGff  -0.05111    1.70637  -0.030 0.976145
## SpeciesGb   -0.40444    1.42765  -0.283 0.777353
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.066e-14  1.145e+00   0.000 1.000000
## SpeciesGa    4.044e-01  1.428e+00   0.283 0.777353
## SpeciesGt    6.928e-15  1.250e+00   0.000 1.000000
## SpeciesGpp   1.215e-14  2.804e+00   0.000 1.000000
## SpeciesGpg   5.878e-02  1.183e+00   0.050 0.960427
## SpeciesGp    4.370e+00  1.274e+00   3.431 0.000783 ***
## SpeciesGmsm  1.055e-14  1.619e+00   0.000 1.000000
## SpeciesGmm   1.733e+00  1.459e+00   1.187 0.237030
## SpeciesGmed  1.015e-14  1.717e+00   0.000 1.000000
## SpeciesGff   3.533e-01  1.869e+00   0.189 0.850335
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.35333    1.47776   0.239   0.8114
## SpeciesGb   -0.35333    1.86923  -0.189   0.8503
## SpeciesGa    0.05111    1.70637   0.030   0.9761
## SpeciesGt   -0.35333    1.56069  -0.226   0.8212
## SpeciesGpp  -0.35333    2.95551  -0.120   0.9050
## SpeciesGpg  -0.29455    1.50741  -0.195   0.8454
## SpeciesGp    4.01619    1.57979   2.542   0.0121 *
## SpeciesGmsm -0.35333    1.86923  -0.189   0.8503
## SpeciesGmm   1.37917    1.73282   0.796   0.4274
## SpeciesGmed -0.35333    1.95489  -0.181   0.8568
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.347e-14  1.280e+00   0.000  1.00000
## SpeciesGff   3.533e-01  1.955e+00   0.181  0.85682
## SpeciesGb   -1.359e-14  1.717e+00   0.000  1.00000
## SpeciesGa    4.044e-01  1.538e+00   0.263  0.79296
## SpeciesGt   -9.192e-15  1.375e+00   0.000  1.00000
```

```
## SpeciesGpp  -2.467e-15  2.862e+00   0.000  1.00000
## SpeciesGpg   5.878e-02  1.314e+00   0.045  0.96438
## SpeciesGp    4.370e+00  1.396e+00   3.129  0.00212 **
## SpeciesGmsm -1.678e-14  1.717e+00   0.000  1.00000
## SpeciesGmm   1.732e+00  1.567e+00   1.105  0.27083
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.7325     0.9049   1.914   0.0575 .
## SpeciesGmed  -1.7325     1.5674  -1.105   0.2708
## SpeciesGff   -1.3792     1.7328  -0.796   0.4274
## SpeciesGb    -1.7325     1.4592  -1.187   0.2370
## SpeciesGa    -1.3281     1.2437  -1.068   0.2874
## SpeciesGt    -1.7325     1.0348  -1.674   0.0962 .
## SpeciesGpp   -1.7325     2.7148  -0.638   0.5244
## SpeciesGpg   -1.6737     0.9526  -1.757   0.0810 .
## SpeciesGp     2.6370     1.0634   2.480   0.0143 *
## SpeciesGmsm  -1.7325     1.4592  -1.187   0.2370
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.434e-14  1.145e+00   0.000 1.000000
## SpeciesGmm   1.732e+00  1.459e+00   1.187 0.237030
## SpeciesGmed -4.307e-14  1.717e+00   0.000 1.000000
## SpeciesGff   3.533e-01  1.869e+00   0.189 0.850335
## SpeciesGb    3.345e-14  1.619e+00   0.000 1.000000
## SpeciesGa    4.044e-01  1.428e+00   0.283 0.777353
## SpeciesGt   -4.455e-14  1.250e+00   0.000 1.000000
## SpeciesGpp  -3.863e-14  2.804e+00   0.000 1.000000
## SpeciesGpg   5.878e-02  1.183e+00   0.050 0.960427
## SpeciesGp    4.370e+00  1.274e+00   3.431 0.000783 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.3695     0.5585   7.823 9.51e-13 ***
```

```
## SpeciesGmsm  -4.3695     1.2737  -3.431 0.000783 ***
## SpeciesGmm   -2.6370     1.0634  -2.480 0.014285 *
## SpeciesGmed  -4.3695     1.3963  -3.129 0.002117 **
## SpeciesGff   -4.0162     1.5798  -2.542 0.012057 *
## SpeciesGb    -4.3695     1.2737  -3.431 0.000783 ***
## SpeciesGa    -3.9651     1.0197  -3.888 0.000153 ***
## SpeciesGt    -4.3695     0.7510  -5.819 3.61e-08 ***
## SpeciesGpp   -4.3695     2.6198  -1.668 0.097480 .
## SpeciesGpg   -4.3107     0.6328  -6.812 2.34e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.05878    0.29754   0.198    0.844
## SpeciesGp    4.31074    0.63285   6.812 2.34e-10 ***
## SpeciesGmsm -0.05878    1.18271  -0.050    0.960
## SpeciesGmm   1.67372    0.95260   1.757    0.081 .
## SpeciesGmed -0.05878    1.31391  -0.045    0.964
## SpeciesGff   0.29455    1.50741   0.195    0.845
## SpeciesGb   -0.05878    1.18271  -0.050    0.960
## SpeciesGa    0.34566    0.90358   0.383    0.703
## SpeciesGt   -0.05878    0.58353  -0.101    0.920
## SpeciesGpp  -0.05878    2.57679  -0.023    0.982
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
```

```
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.328e-14  2.560e+00   0.000   1.0000
## SpeciesGpg   5.878e-02  2.577e+00   0.023   0.9818
## SpeciesGp    4.370e+00  2.620e+00   1.668   0.0975 .
## SpeciesGmsm  3.316e-14  2.804e+00   0.000   1.0000
## SpeciesGmm   1.733e+00  2.715e+00   0.638   0.5244
## SpeciesGmed  2.598e-14  2.862e+00   0.000   1.0000
## SpeciesGff   3.533e-01  2.956e+00   0.120   0.9050
## SpeciesGb    3.016e-14  2.804e+00   0.000   1.0000
## SpeciesGa    4.044e-01  2.698e+00   0.150   0.8810
## SpeciesGt    3.394e-14  2.608e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TcTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.3695  -0.0588  -0.0588   0.0000  16.7605
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.501e-15  5.020e-01   0.000   1.0000
## SpeciesGpp  -8.058e-15  2.608e+00   0.000   1.0000
## SpeciesGpg   5.878e-02  5.835e-01   0.101   0.9199
## SpeciesGp    4.370e+00  7.510e-01   5.819 3.61e-08 ***
## SpeciesGmsm  1.727e-14  1.250e+00   0.000   1.0000
## SpeciesGmm   1.733e+00  1.035e+00   1.674   0.0962 .
## SpeciesGmed -1.328e-15  1.375e+00   0.000   1.0000
## SpeciesGff   3.533e-01  1.561e+00   0.226   0.8212
## SpeciesGb    2.057e-15  1.250e+00   0.000   1.0000
## SpeciesGa    4.044e-01  9.899e-01   0.409   0.6835
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.551301)
##
##     Null deviance: 1299.26  on 155  degrees of freedom
## Residual deviance:  956.49  on 146  degrees of freedom
## AIC: 747.6
##
## Number of Fisher Scoring iterations: 2

#======== Glm TvTsg per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.034e-14  2.568e+00   0.000    1.000
## SpeciesGt    1.039e-14  2.979e+00   0.000    1.000
## SpeciesGpp   1.114e-14  8.120e+00   0.000    1.000
## SpeciesGpg   3.798e+00  2.720e+00   1.397    0.165
## SpeciesGp    1.129e-01  3.069e+00   0.037    0.971
## SpeciesGmsm  7.500e-15  4.297e+00   0.000    1.000
## SpeciesGmm   7.713e-01  3.743e+00   0.206    0.837
## SpeciesGmed  8.639e-15  4.629e+00   0.000    1.000
## SpeciesGff   9.359e-15  5.136e+00   0.000    1.000
## SpeciesGb    4.000e-01  4.297e+00   0.093    0.926
##
```

```
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4000     3.4452   0.116    0.908
## SpeciesGa    -0.4000     4.2969  -0.093    0.926
## SpeciesGt    -0.4000     3.7619  -0.106    0.915
## SpeciesGpp   -0.4000     8.4390  -0.047    0.962
## SpeciesGpg    3.3980     3.5597   0.955    0.341
## SpeciesGp    -0.2871     3.8335  -0.075    0.940
## SpeciesGmsm  -0.4000     4.8723  -0.082    0.935
## SpeciesGmm    0.3713     4.3918   0.085    0.933
## SpeciesGmed  -0.4000     5.1678  -0.077    0.938
## SpeciesGff   -0.4000     5.6260  -0.071    0.943
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  9.444e-16  4.448e+00   0.000    1.000
## SpeciesGb    4.000e-01  5.626e+00   0.071    0.943
## SpeciesGa   -1.643e-15  5.136e+00   0.000    1.000
## SpeciesGt    4.263e-15  4.697e+00   0.000    1.000
## SpeciesGpp   2.676e-15  8.896e+00   0.000    1.000
## SpeciesGpg   3.798e+00  4.537e+00   0.837    0.404
## SpeciesGp    1.129e-01  4.755e+00   0.024    0.981
## SpeciesGmsm -4.013e-16  5.626e+00   0.000    1.000
## SpeciesGmm   7.712e-01  5.215e+00   0.148    0.883
## SpeciesGmed -6.360e-17  5.884e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.642e-15  3.852e+00   0.000    1.000
## SpeciesGff  -3.020e-15  5.884e+00   0.000    1.000
## SpeciesGb    4.000e-01  5.168e+00   0.077    0.938
## SpeciesGa    8.658e-16  4.629e+00   0.000    1.000
## SpeciesGt   -1.613e-15  4.138e+00   0.000    1.000
## SpeciesGpp  -7.583e-15  8.613e+00   0.000    1.000
## SpeciesGpg   3.798e+00  3.955e+00   0.960    0.338
## SpeciesGp    1.129e-01  4.203e+00   0.027    0.979
## SpeciesGmsm  2.777e-15  5.168e+00   0.000    1.000
## SpeciesGmm   7.713e-01  4.718e+00   0.163    0.870
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
```

```
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.7713     2.7237   0.283    0.777
## SpeciesGmed  -0.7712     4.7176  -0.163    0.870
## SpeciesGff   -0.7713     5.2155  -0.148    0.883
## SpeciesGb    -0.3713     4.3918  -0.085    0.933
## SpeciesGa    -0.7713     3.7433  -0.206    0.837
## SpeciesGt    -0.7713     3.1146  -0.248    0.805
## SpeciesGpp   -0.7713     8.1710  -0.094    0.925
## SpeciesGpg    3.0267     2.8671   1.056    0.293
## SpeciesGp    -0.6584     3.2007  -0.206    0.837
## SpeciesGmsm  -0.7712     4.3918  -0.176    0.861
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
```

```
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.253e-15  3.445e+00   0.000    1.000
## SpeciesGmm   7.712e-01  4.392e+00   0.176    0.861
## SpeciesGmed  2.893e-15  5.168e+00   0.000    1.000
## SpeciesGff   1.366e-15  5.626e+00   0.000    1.000
## SpeciesGb    4.000e-01  4.872e+00   0.082    0.935
## SpeciesGa    5.838e-15  4.297e+00   0.000    1.000
## SpeciesGt   -3.081e-15  3.762e+00   0.000    1.000
## SpeciesGpp   4.463e-15  8.439e+00   0.000    1.000
## SpeciesGpg   3.798e+00  3.560e+00   1.067    0.288
## SpeciesGp    1.129e-01  3.833e+00   0.029    0.977
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1129     1.6811   0.067    0.947
## SpeciesGmsm  -0.1129     3.8335  -0.029    0.977
## SpeciesGmm    0.6584     3.2007   0.206    0.837
## SpeciesGmed  -0.1129     4.2027  -0.027    0.979
## SpeciesGff   -0.1129     4.7548  -0.024    0.981
## SpeciesGb     0.2871     3.8335   0.075    0.940
## SpeciesGa    -0.1129     3.0692  -0.037    0.971
## SpeciesGt    -0.1129     2.2602  -0.050    0.960
## SpeciesGpp   -0.1129     7.8850  -0.014    0.989
## SpeciesGpg    3.6851     1.9047   1.935    0.055 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
```

```
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.7980     0.8955   4.241 3.93e-05 ***
## SpeciesGp    -3.6851     1.9047  -1.935   0.0550 .
## SpeciesGmsm  -3.7980     3.5597  -1.067   0.2878
## SpeciesGmm   -3.0267     2.8671  -1.056   0.2929
## SpeciesGmed  -3.7980     3.9546  -0.960   0.3384
## SpeciesGff   -3.7980     4.5370  -0.837   0.4039
## SpeciesGb    -3.3980     3.5597  -0.955   0.3414
## SpeciesGa    -3.7980     2.7196  -1.397   0.1647
## SpeciesGt    -3.7980     1.7563  -2.162   0.0322 *
## SpeciesGpp   -3.7980     7.7556  -0.490   0.6251
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.783e-14  7.704e+00   0.000    1.000
## SpeciesGpg   3.798e+00  7.756e+00   0.490    0.625
## SpeciesGp    1.129e-01  7.885e+00   0.014    0.989
## SpeciesGmsm  3.857e-14  8.439e+00   0.000    1.000
## SpeciesGmm   7.713e-01  8.171e+00   0.094    0.925
## SpeciesGmed  3.815e-14  8.613e+00   0.000    1.000
## SpeciesGff   3.867e-14  8.896e+00   0.000    1.000
## SpeciesGb    4.000e-01  8.439e+00   0.047    0.962
## SpeciesGa    3.820e-14  8.120e+00   0.000    1.000
## SpeciesGt    3.620e-14  7.850e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.177e-15  1.511e+00   0.000   1.0000
## SpeciesGpp  -7.574e-15  7.850e+00   0.000   1.0000
## SpeciesGpg   3.798e+00  1.756e+00   2.162   0.0322 *
## SpeciesGp    1.129e-01  2.260e+00   0.050   0.9602
## SpeciesGmsm -1.919e-15  3.762e+00   0.000   1.0000
## SpeciesGmm   7.712e-01  3.115e+00   0.248   0.8048
## SpeciesGmed  1.193e-15  4.138e+00   0.000   1.0000
## SpeciesGff  -1.097e-15  4.697e+00   0.000   1.0000
## SpeciesGb    4.000e-01  3.762e+00   0.106   0.9155
## SpeciesGa   -1.675e-15  2.979e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
#========= Glm TvTz per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.120e-15  3.029e+00   0.000  1.00000
## SpeciesGt    9.313e+00  3.515e+00   2.650  0.00894 **
## SpeciesGpp  -2.653e-14  9.579e+00   0.000  1.00000
## SpeciesGpg   5.265e-01  3.208e+00   0.164  0.86987
## SpeciesGp    1.162e-01  3.621e+00   0.032  0.97444
## SpeciesGmsm  1.251e-15  5.069e+00   0.000  1.00000
## SpeciesGmm   3.460e-16  4.416e+00   0.000  1.00000
## SpeciesGmed  8.325e-01  5.461e+00   0.152  0.87904
## SpeciesGff   1.820e-15  6.058e+00   0.000  1.00000
## SpeciesGb    1.734e-15  5.069e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
```

```
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.086e-14  4.064e+00   0.000   1.0000
## SpeciesGa    9.150e-16  5.069e+00   0.000   1.0000
## SpeciesGt    9.313e+00  4.438e+00   2.099   0.0376 *
## SpeciesGpp   7.469e-15  9.955e+00   0.000   1.0000
## SpeciesGpg   5.265e-01  4.199e+00   0.125   0.9004
## SpeciesGp    1.162e-01  4.522e+00   0.026   0.9795
## SpeciesGmsm  1.192e-14  5.747e+00   0.000   1.0000
## SpeciesGmm   1.196e-14  5.181e+00   0.000   1.0000
## SpeciesGmed  8.325e-01  6.096e+00   0.137   0.8916
## SpeciesGff   7.784e-15  6.637e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.247e-14  5.247e+00   0.000    1.000
## SpeciesGb    2.769e-14  6.637e+00   0.000    1.000
## SpeciesGa    4.457e-14  6.058e+00   0.000    1.000
## SpeciesGt    9.313e+00  5.541e+00   1.681    0.095 .
## SpeciesGpp   3.050e-14  1.049e+01   0.000    1.000
## SpeciesGpg   5.265e-01  5.352e+00   0.098    0.922
## SpeciesGp    1.162e-01  5.609e+00   0.021    0.984
## SpeciesGmsm  3.289e-14  6.637e+00   0.000    1.000
```

```
## SpeciesGmm   3.281e-14  6.152e+00   0.000    1.000
## SpeciesGmed  8.325e-01  6.941e+00   0.120    0.905
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.8325     4.5438   0.183   0.8549
## SpeciesGff   -0.8325     6.9407  -0.120   0.9047
## SpeciesGb    -0.8325     6.0961  -0.137   0.8916
## SpeciesGa    -0.8325     5.4609  -0.152   0.8790
## SpeciesGt     8.4806     4.8808   1.738   0.0844 .
## SpeciesGpp   -0.8325    10.1602  -0.082   0.9348
## SpeciesGpg   -0.3060     4.6649  -0.066   0.9478
## SpeciesGp    -0.7163     4.9576  -0.144   0.8853
## SpeciesGmsm  -0.8325     6.0961  -0.137   0.8916
## SpeciesGmm   -0.8325     5.5649  -0.150   0.8813
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.368e-14  3.213e+00   0.000   1.0000
## SpeciesGmed  8.325e-01  5.565e+00   0.150   0.8813
## SpeciesGff  -1.755e-14  6.152e+00   0.000   1.0000
## SpeciesGb    2.719e-14  5.181e+00   0.000   1.0000
## SpeciesGa    2.446e-14  4.416e+00   0.000   1.0000
## SpeciesGt    9.313e+00  3.674e+00   2.535   0.0123 *
## SpeciesGpp   2.175e-14  9.639e+00   0.000   1.0000
## SpeciesGpg   5.265e-01  3.382e+00   0.156   0.8765
## SpeciesGp    1.162e-01  3.776e+00   0.031   0.9755
## SpeciesGmsm  2.285e-14  5.181e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```r
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.548e-16  4.064e+00   0.000   1.0000
```

```
## SpeciesGmm   9.395e-16  5.181e+00   0.000   1.0000
## SpeciesGmed  8.325e-01  6.096e+00   0.137   0.8916
## SpeciesGff  -1.379e-15  6.637e+00   0.000   1.0000
## SpeciesGb   -9.120e-15  5.747e+00   0.000   1.0000
## SpeciesGa   -3.064e-16  5.069e+00   0.000   1.0000
## SpeciesGt    9.313e+00  4.438e+00   2.099   0.0376 *
## SpeciesGpp   8.926e-16  9.955e+00   0.000   1.0000
## SpeciesGpg   5.265e-01  4.199e+00   0.125   0.9004
## SpeciesGp    1.162e-01  4.522e+00   0.026   0.9795
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1162     1.9831   0.059 0.953358
## SpeciesGmsm  -0.1162     4.5221  -0.026 0.979536
## SpeciesGmm   -0.1162     3.7756  -0.031 0.975492
## SpeciesGmed   0.7163     4.9576   0.144 0.885316
## SpeciesGff   -0.1162     5.6089  -0.021 0.983501
## SpeciesGb    -0.1162     4.5221  -0.026 0.979536
## SpeciesGa    -0.1162     3.6206  -0.032 0.974443
## SpeciesGt     9.1969     2.6662   3.449 0.000735 ***
## SpeciesGpp   -0.1162     9.3014  -0.012 0.990050
## SpeciesGpg    0.4103     2.2469   0.183 0.855360
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
```

```
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TvTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.798  -3.798  -0.113   0.000  62.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.7980     0.8955   4.241 3.93e-05 ***
## SpeciesGp    -3.6851     1.9047  -1.935   0.0550 .
## SpeciesGmsm  -3.7980     3.5597  -1.067   0.2878
## SpeciesGmm   -3.0267     2.8671  -1.056   0.2929
## SpeciesGmed  -3.7980     3.9546  -0.960   0.3384
## SpeciesGff   -3.7980     4.5370  -0.837   0.4039
## SpeciesGb    -3.3980     3.5597  -0.955   0.3414
## SpeciesGa    -3.7980     2.7196  -1.397   0.1647
## SpeciesGt    -3.7980     1.7563  -2.162   0.0322 *
## SpeciesGpp   -3.7980     7.7556  -0.490   0.6251
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 59.34754)
##
##     Null deviance: 9193.0  on 155  degrees of freedom
## Residual deviance: 8664.7  on 146  degrees of freedom
## AIC: 1091.4
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.538e-15  9.088e+00   0.000    1.000
## SpeciesGpg   5.265e-01  9.149e+00   0.058    0.954
## SpeciesGp    1.162e-01  9.301e+00   0.012    0.990
## SpeciesGmsm -1.213e-14  9.955e+00   0.000    1.000
## SpeciesGmm  -3.901e-15  9.639e+00   0.000    1.000
## SpeciesGmed  8.325e-01  1.016e+01   0.082    0.935
## SpeciesGff  -4.034e-15  1.049e+01   0.000    1.000
## SpeciesGb    2.052e-14  9.955e+00   0.000    1.000
## SpeciesGa    4.102e-15  9.579e+00   0.000    1.000
## SpeciesGt    9.313e+00  9.261e+00   1.006    0.316
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -9.313  -0.526  -0.526   0.000  74.017
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.313      1.782   5.226 5.89e-07 ***
## SpeciesGpp    -9.313      9.261  -1.006 0.316241
## SpeciesGpg    -8.787      2.072  -4.241 3.93e-05 ***
## SpeciesGp     -9.197      2.666  -3.449 0.000735 ***
## SpeciesGmsm   -9.313      4.438  -2.099 0.037570 *
## SpeciesGmm    -9.313      3.674  -2.535 0.012305 *
## SpeciesGmed   -8.481      4.881  -1.738 0.084400 .
## SpeciesGff    -9.313      5.541  -1.681 0.094955 .
## SpeciesGb     -9.313      4.438  -2.099 0.037570 *
## SpeciesGa     -9.313      3.515  -2.650 0.008940 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 82.58299)
```

```
##
##     Null deviance: 13808  on 155  degrees of freedom
## Residual deviance: 12057  on 146  degrees of freedom
## AIC: 1142.9
##
## Number of Fisher Scoring iterations: 2
```

```
#========= glm TzTsg per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.651e-15  1.304e+00   0.000    1.000
## SpeciesGt    2.593e-15  1.513e+00   0.000    1.000
## SpeciesGpp   2.229e-15  4.125e+00   0.000    1.000
## SpeciesGpg   1.069e+00  1.381e+00   0.774    0.440
## SpeciesGp    2.876e-01  1.559e+00   0.184    0.854
## SpeciesGmsm  2.607e-15  2.183e+00   0.000    1.000
## SpeciesGmm   1.538e-01  1.901e+00   0.081    0.936
## SpeciesGmed  2.973e-15  2.352e+00   0.000    1.000
## SpeciesGff   3.520e-15  2.609e+00   0.000    1.000
## SpeciesGb    2.438e-15  2.183e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
```

```
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.484e-15  1.750e+00   0.000    1.000
## SpeciesGa    2.501e-15  2.183e+00   0.000    1.000
## SpeciesGt    4.224e-15  1.911e+00   0.000    1.000
## SpeciesGpp   0.000e+00  4.287e+00   0.000    1.000
## SpeciesGpg   1.069e+00  1.808e+00   0.591    0.555
## SpeciesGp    2.876e-01  1.947e+00   0.148    0.883
## SpeciesGmsm  1.547e-15  2.475e+00   0.000    1.000
## SpeciesGmm   1.538e-01  2.231e+00   0.069    0.945
## SpeciesGmed  1.248e-15  2.625e+00   0.000    1.000
## SpeciesGff   6.081e-16  2.858e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.242e-15  2.259e+00   0.000    1.000
## SpeciesGb    2.041e-15  2.858e+00   0.000    1.000
## SpeciesGa    1.561e-15  2.609e+00   0.000    1.000
## SpeciesGt    3.087e-15  2.386e+00   0.000    1.000
## SpeciesGpp   4.460e-16  4.519e+00   0.000    1.000
## SpeciesGpg   1.069e+00  2.305e+00   0.464    0.643
## SpeciesGp    2.876e-01  2.415e+00   0.119    0.905
## SpeciesGmsm  1.591e-15  2.858e+00   0.000    1.000
## SpeciesGmm   1.538e-01  2.649e+00   0.058    0.954
## SpeciesGmed  1.272e-15  2.989e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
```

```
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.631e-15  1.957e+00   0.000    1.000
## SpeciesGff  -1.902e-15  2.989e+00   0.000    1.000
## SpeciesGb   -3.082e-15  2.625e+00   0.000    1.000
## SpeciesGa   -6.005e-16  2.352e+00   0.000    1.000
## SpeciesGt   -2.411e-15  2.102e+00   0.000    1.000
## SpeciesGpp   4.461e-16  4.375e+00   0.000    1.000
## SpeciesGpg   1.069e+00  2.009e+00   0.532    0.595
## SpeciesGp    2.876e-01  2.135e+00   0.135    0.893
## SpeciesGmsm -2.807e-16  2.625e+00   0.000    1.000
## SpeciesGmm   1.537e-01  2.396e+00   0.064    0.949
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1537     1.3835   0.111    0.912
## SpeciesGmed  -0.1537     2.3963  -0.064    0.949
## SpeciesGff   -0.1537     2.6493  -0.058    0.954
## SpeciesGb    -0.1537     2.2309  -0.069    0.945
## SpeciesGa    -0.1537     1.9015  -0.081    0.936
## SpeciesGt    -0.1537     1.5821  -0.097    0.923
## SpeciesGpp   -0.1538     4.1506  -0.037    0.971
## SpeciesGpg    0.9156     1.4564   0.629    0.531
## SpeciesGp     0.1339     1.6258   0.082    0.934
## SpeciesGmsm  -0.1537     2.2309  -0.069    0.945
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.138e-15  1.750e+00   0.000    1.000
## SpeciesGmm   1.538e-01  2.231e+00   0.069    0.945
## SpeciesGmed  4.069e-15  2.625e+00   0.000    1.000
## SpeciesGff   3.102e-15  2.858e+00   0.000    1.000
## SpeciesGb    1.616e-15  2.475e+00   0.000    1.000
## SpeciesGa    3.609e-15  2.183e+00   0.000    1.000
## SpeciesGt    1.790e-15  1.911e+00   0.000    1.000
## SpeciesGpp   3.236e-15  4.287e+00   0.000    1.000
## SpeciesGpg   1.069e+00  1.808e+00   0.591    0.555
## SpeciesGp    2.876e-01  1.947e+00   0.148    0.883
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
```

```
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2876     0.8539   0.337    0.737
## SpeciesGmsm  -0.2876     1.9473  -0.148    0.883
## SpeciesGmm   -0.1339     1.6258  -0.082    0.934
## SpeciesGmed  -0.2876     2.1348  -0.135    0.893
## SpeciesGff   -0.2876     2.4153  -0.119    0.905
## SpeciesGb    -0.2876     1.9473  -0.148    0.883
## SpeciesGa    -0.2876     1.5591  -0.184    0.854
## SpeciesGt    -0.2876     1.1481  -0.251    0.803
## SpeciesGpp   -0.2876     4.0053  -0.072    0.943
## SpeciesGpg    0.7817     0.9675   0.808    0.420
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)   1.0693     0.4549   2.351   0.0201 *
## SpeciesGp    -0.7817     0.9675  -0.808   0.4204
## SpeciesGmsm  -1.0693     1.8082  -0.591   0.5552
## SpeciesGmm   -0.9156     1.4564  -0.629   0.5306
## SpeciesGmed  -1.0693     2.0088  -0.532   0.5953
## SpeciesGff   -1.0693     2.3046  -0.464   0.6433
## SpeciesGb    -1.0693     1.8082  -0.591   0.5552
## SpeciesGa    -1.0693     1.3815  -0.774   0.4401
## SpeciesGt    -1.0693     0.8921  -1.199   0.2326
## SpeciesGpp   -1.0693     3.9396  -0.271   0.7864
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -6.613e-15  3.913e+00   0.000    1.000
## SpeciesGpg   1.069e+00  3.940e+00   0.271    0.786
## SpeciesGp    2.876e-01  4.005e+00   0.072    0.943
## SpeciesGmsm  5.163e-15  4.287e+00   0.000    1.000
## SpeciesGmm   1.538e-01  4.151e+00   0.037    0.971
## SpeciesGmed  6.883e-15  4.375e+00   0.000    1.000
## SpeciesGff   7.462e-15  4.519e+00   0.000    1.000
## SpeciesGb    7.012e-15  4.287e+00   0.000    1.000
## SpeciesGa    7.604e-15  4.125e+00   0.000    1.000
## SpeciesGt    7.297e-15  3.988e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
```

```
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TzTsg) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.069  -1.069  -0.288   0.000  32.261
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.224e-15  7.674e-01   0.000    1.000
## SpeciesGpp  -2.339e-15  3.988e+00   0.000    1.000
## SpeciesGpg   1.069e+00  8.921e-01   1.199    0.233
## SpeciesGp    2.876e-01  1.148e+00   0.251    0.803
## SpeciesGmsm -2.561e-16  1.911e+00   0.000    1.000
## SpeciesGmm   1.538e-01  1.582e+00   0.097    0.923
## SpeciesGmed  5.683e-16  2.102e+00   0.000    1.000
## SpeciesGff   1.246e-15  2.386e+00   0.000    1.000
## SpeciesGb   -5.310e-16  1.911e+00   0.000    1.000
## SpeciesGa    5.152e-16  1.513e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 15.31328)
##
##     Null deviance: 2274.4  on 155  degrees of freedom
## Residual deviance: 2235.7  on 146  degrees of freedom
## AIC: 880.05
##
## Number of Fisher Scoring iterations: 2
```

```
#======== Glm TcTvTz per species
data$Species <- relevel(data$Species, ref= "Ga")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
```

```
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.422e-16  1.807e-01   0.000    1.000
## SpeciesGt    2.669e-01  2.097e-01   1.273    0.205
## SpeciesGpp   3.144e-16  5.715e-01   0.000    1.000
## SpeciesGpg  -2.818e-16  1.914e-01   0.000    1.000
## SpeciesGp   -6.261e-16  2.160e-01   0.000    1.000
## SpeciesGmsm -6.833e-16  3.024e-01   0.000    1.000
## SpeciesGmm  -1.384e-16  2.634e-01   0.000    1.000
## SpeciesGmed  1.665e+00  3.258e-01   5.111 9.89e-07 ***
## SpeciesGff   6.440e-17  3.614e-01   0.000    1.000
## SpeciesGb   -3.290e-17  3.024e-01   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gb")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.270e-16  2.424e-01   0.000    1.000
## SpeciesGa   -3.526e-16  3.024e-01   0.000    1.000
## SpeciesGt    2.669e-01  2.647e-01   1.008    0.315
## SpeciesGpp  -2.708e-16  5.939e-01   0.000    1.000
## SpeciesGpg  -9.952e-17  2.505e-01   0.000    1.000
## SpeciesGp   -5.937e-16  2.698e-01   0.000    1.000
## SpeciesGmsm  1.622e-16  3.429e-01   0.000    1.000
## SpeciesGmm   4.054e-16  3.091e-01   0.000    1.000
## SpeciesGmed  1.665e+00  3.637e-01   4.578 9.96e-06 ***
## SpeciesGff   1.463e-16  3.959e-01   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
```

```
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gff")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.126e-15  3.130e-01   0.000    1.000
## SpeciesGb    2.234e-15  3.959e-01   0.000    1.000
## SpeciesGa    2.337e-15  3.614e-01   0.000    1.000
## SpeciesGt    2.669e-01  3.306e-01   0.807    0.421
## SpeciesGpp   1.986e-15  6.260e-01   0.000    1.000
## SpeciesGpg   1.770e-15  3.193e-01   0.000    1.000
## SpeciesGp    1.872e-15  3.346e-01   0.000    1.000
## SpeciesGmsm  2.610e-15  3.959e-01   0.000    1.000
## SpeciesGmm   2.528e-15  3.670e-01   0.000    1.000
## SpeciesGmed  1.665e+00  4.141e-01   4.021 9.25e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmed")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
```

```
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.6650     0.2711   6.142 7.33e-09 ***
## SpeciesGff   -1.6650     0.4141  -4.021 9.25e-05 ***
## SpeciesGb    -1.6650     0.3637  -4.578 9.96e-06 ***
## SpeciesGa    -1.6650     0.3258  -5.111 9.89e-07 ***
## SpeciesGt    -1.3981     0.2912  -4.802 3.86e-06 ***
## SpeciesGpp   -1.6650     0.6061  -2.747  0.00677 **
## SpeciesGpg   -1.6650     0.2783  -5.983 1.62e-08 ***
## SpeciesGp    -1.6650     0.2958  -5.630 8.97e-08 ***
## SpeciesGmsm  -1.6650     0.3637  -4.578 9.96e-06 ***
## SpeciesGmm   -1.6650     0.3320  -5.015 1.52e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmm")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.622e-16  1.917e-01   0.000    1.000
## SpeciesGmed  1.665e+00  3.320e-01   5.015 1.52e-06 ***
## SpeciesGff  -3.675e-16  3.670e-01   0.000    1.000
## SpeciesGb    5.231e-16  3.091e-01   0.000    1.000
## SpeciesGa    5.924e-16  2.634e-01   0.000    1.000
## SpeciesGt    2.669e-01  2.192e-01   1.218    0.225
## SpeciesGpp   7.354e-16  5.750e-01   0.000    1.000
## SpeciesGpg   7.465e-16  2.018e-01   0.000    1.000
## SpeciesGp    6.141e-16  2.252e-01   0.000    1.000
## SpeciesGmsm  6.759e-16  3.091e-01   0.000    1.000
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gmsm")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.661e-17  2.424e-01   0.000    1.000
## SpeciesGmm  -8.564e-17  3.091e-01   0.000    1.000
## SpeciesGmed  1.665e+00  3.637e-01   4.578 9.96e-06 ***
## SpeciesGff  -1.825e-16  3.959e-01   0.000    1.000
## SpeciesGb   -4.594e-16  3.429e-01   0.000    1.000
## SpeciesGa   -6.702e-17  3.024e-01   0.000    1.000
## SpeciesGt    2.669e-01  2.647e-01   1.008    0.315
## SpeciesGpp   9.574e-17  5.939e-01   0.000    1.000
## SpeciesGpg   7.974e-17  2.505e-01   0.000    1.000
## SpeciesGp    1.998e-16  2.698e-01   0.000    1.000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gp")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -6.205e-16  1.183e-01   0.000   1.0000
## SpeciesGmsm  7.454e-16  2.698e-01   0.000   1.0000
## SpeciesGmm   2.017e-17  2.252e-01   0.000   1.0000
## SpeciesGmed  1.665e+00  2.958e-01   5.630 8.97e-08 ***
## SpeciesGff   5.168e-16  3.346e-01   0.000   1.0000
## SpeciesGb    4.509e-16  2.698e-01   0.000   1.0000
## SpeciesGa    9.491e-16  2.160e-01   0.000   1.0000
## SpeciesGt    2.669e-01  1.591e-01   1.678   0.0955 .
## SpeciesGpp   3.770e-16  5.549e-01   0.000   1.0000
## SpeciesGpg   1.270e-16  1.340e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpg")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.829e-17  6.302e-02   0.000   1.0000
## SpeciesGp    3.329e-16  1.340e-01   0.000   1.0000
## SpeciesGmsm  8.195e-16  2.505e-01   0.000   1.0000
## SpeciesGmm   1.621e-16  2.018e-01   0.000   1.0000
## SpeciesGmed  1.665e+00  2.783e-01   5.983 1.62e-08 ***
```

```
## SpeciesGff  -4.253e-16  3.193e-01   0.000   1.0000
## SpeciesGb    2.111e-16  2.505e-01   0.000   1.0000
## SpeciesGa   -3.669e-16  1.914e-01   0.000   1.0000
## SpeciesGt    2.669e-01  1.236e-01   2.160   0.0324 *
## SpeciesGpp  -3.353e-16  5.458e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gpp")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.205e-15  5.421e-01   0.000  1.00000
## SpeciesGpg   1.364e-15  5.458e-01   0.000  1.00000
## SpeciesGp    7.921e-16  5.549e-01   0.000  1.00000
## SpeciesGmsm  2.682e-16  5.939e-01   0.000  1.00000
## SpeciesGmm   1.696e-15  5.750e-01   0.000  1.00000
## SpeciesGmed  1.665e+00  6.061e-01   2.747  0.00677 **
## SpeciesGff   1.456e-15  6.260e-01   0.000  1.00000
## SpeciesGb    1.384e-15  5.939e-01   0.000  1.00000
## SpeciesGa    2.991e-15  5.715e-01   0.000  1.00000
## SpeciesGt    2.669e-01  5.525e-01   0.483  0.62971
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

```
data$Species <- relevel(data$Species, ref= "Gt")
model1<-glm((Prev_TcTvTz) ~ Species,data=data, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Species, family = gaussian(), data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.665   0.000   0.000   0.000   5.393
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2669     0.1063   2.511   0.0131 *
## SpeciesGpp   -0.2669     0.5525  -0.483   0.6297
## SpeciesGpg   -0.2669     0.1236  -2.160   0.0324 *
## SpeciesGp    -0.2669     0.1591  -1.678   0.0955 .
## SpeciesGmsm  -0.2669     0.2647  -1.008   0.3150
## SpeciesGmm   -0.2669     0.2192  -1.218   0.2253
## SpeciesGmed   1.3981     0.2912   4.802 3.86e-06 ***
## SpeciesGff   -0.2669     0.3306  -0.807   0.4207
## SpeciesGb    -0.2669     0.2647  -1.008   0.3150
## SpeciesGa    -0.2669     0.2097  -1.273   0.2050
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2939072)
##
##     Null deviance: 54.666  on 155  degrees of freedom
## Residual deviance: 42.910  on 146  degrees of freedom
## AIC: 263.35
##
## Number of Fisher Scoring iterations: 2
```

Statistics for Supplementary table 5

```
###For Ga
data_ga <- subset(data, Species=="Ga")
data_ga
```

```
##     Country                Localisation Species Sex Sample Prev_Sod Prev_
Tspp
## 27      SAF              False Bay Park      Ga  NI     27     0.00
2.60
## 41      SAF                SAFint Lucia      Ga  NI     41     0.00     3
8.60
## 46      SAF                Lower Mkhuze      Ga  NI     46     0.00     4
3.40
## 53      MOZ   Reserva Especial de Maputo      Ga  NI     53     0.00     1
0.00
```

```
## 59      SAF North eastern KwaZulu-Natal       Ga  NI     59     5.13
5.13
## 75      SWA      Mlawula Nature Reserve       Ga  NI     75     0.00
0.00
## 76      URT                 Uguja island      Ga  NI     76     6.67     1
0.00
## 132     URT                     Zanzibar      Ga  NI    132    16.67
0.00
## 141     URT                       Jozani      Ga  NI    141     0.00     2
5.00
##     Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_T
vTz
## 27     2.60    0.00    0.00     0.00      0.00         0       0.00
0
## 41    10.53    0.00   10.53    15.79      0.00         0       1.75
0
## 46     9.43    1.89    3.77    24.53      1.89         0       1.89
0
## 53     6.00    0.00    0.00     4.00      0.00         0       0.00
0
## 59     2.56    0.00    0.00     2.56      0.00         0       0.00
0
## 75     0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 76     0.00    6.67    3.33     0.00      0.00         0       0.00
0
## 132    0.00    0.00    0.00     0.00      0.00         0       0.00
0
## 141    0.00    0.00   25.00     0.00      0.00         0       0.00
0
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 27           0          0           0
## 41           0          0           0
## 46           0          0           0
## 53           0          0           0
## 59           0          0           0
## 75           0          0           0
## 76           0          0           0
## 132          0          0           0
## 141          0          0           0
```

```
##Tc
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_Tc) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_ga)
##
```

```
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -3.68   4.25   3.15   0.00  -3.72   0.00   0.00   0.00   0.00
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.280      1.664   3.774   0.0130 *
## CountryURT    -6.280      2.542  -2.471   0.0565 .
## CountrySWA    -6.280      3.720  -1.688   0.1522
## CountryMOZ    -0.280      3.720  -0.075   0.9429
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 11.07316)
##
##     Null deviance: 141.513  on 8  degrees of freedom
## Residual deviance:  55.366  on 5  degrees of freedom
## AIC: 51.892
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_Tc) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -3.68   4.25   3.15   0.00  -3.72   0.00   0.00   0.00   0.00
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.000      3.328   1.803    0.131
## CountrySAF     0.280      3.720   0.075    0.943
## CountryURT    -6.000      3.842  -1.562    0.179
## CountrySWA    -6.000      4.706  -1.275    0.258
##
## (Dispersion parameter for gaussian family taken to be 11.07316)
##
##     Null deviance: 141.513  on 8  degrees of freedom
## Residual deviance:  55.366  on 5  degrees of freedom
## AIC: 51.892
##
## Number of Fisher Scoring iterations: 2
```

```r
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_Tc) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -3.68   4.25   3.15   0.00  -3.72   0.00   0.00   0.00   0.00
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.882e-16  3.328e+00   0.000    1.000
## CountryMOZ   6.000e+00  4.706e+00   1.275    0.258
## CountrySAF   6.280e+00  3.720e+00   1.688    0.152
## CountryURT   2.051e-15  3.842e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 11.07316)
##
##     Null deviance: 141.513  on 8  degrees of freedom
## Residual deviance:  55.366  on 5  degrees of freedom
## AIC: 51.892
##
## Number of Fisher Scoring iterations: 2
```

```r
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_Tc) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -3.68   4.25   3.15   0.00  -3.72   0.00   0.00   0.00   0.00
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.606e-17  1.921e+00   0.000   1.0000
## CountrySWA  -2.826e-15  3.842e+00   0.000   1.0000
## CountryMOZ   6.000e+00  3.842e+00   1.562   0.1792
## CountrySAF   6.280e+00  2.542e+00   2.471   0.0565 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 11.07316)
##
```

```
##     Null deviance: 141.513  on 8  degrees of freedom
## Residual deviance:  55.366  on 5  degrees of freedom
## AIC: 51.892
##
## Number of Fisher Scoring iterations: 2
```

```
##Tv
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_Tv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   4.4467  -2.2233
##     141
## -2.2233
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4725     1.2716   0.372    0.725
## CountryURT    1.7508     1.9424   0.901    0.409
## CountrySWA   -0.4725     2.8433  -0.166    0.875
## CountryMOZ   -0.4725     2.8433  -0.166    0.875
##
## (Dispersion parameter for gaussian family taken to be 6.467668)
##
##     Null deviance: 39.919  on 8  degrees of freedom
## Residual deviance: 32.338  on 5  degrees of freedom
## AIC: 47.052
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_Tv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   4.4467  -2.2233
##     141
## -2.2233
##
## Coefficients:
```

```
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.331e-16  2.543e+00   0.000    1.000
## CountrySAF   4.725e-01  2.843e+00   0.166    0.875
## CountryURT   2.223e+00  2.937e+00   0.757    0.483
## CountrySWA   0.000e+00  3.597e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 6.467668)
##
##     Null deviance: 39.919  on 8  degrees of freedom
## Residual deviance: 32.338  on 5  degrees of freedom
## AIC: 47.052
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_Tv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   4.4467  -2.2233
##     141
## -2.2233
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.383e-17  2.543e+00   0.000    1.000
## CountryMOZ   8.832e-17  3.597e+00   0.000    1.000
## CountrySAF   4.725e-01  2.843e+00   0.166    0.875
## CountryURT   2.223e+00  2.937e+00   0.757    0.483
##
## (Dispersion parameter for gaussian family taken to be 6.467668)
##
##     Null deviance: 39.919  on 8  degrees of freedom
## Residual deviance: 32.338  on 5  degrees of freedom
## AIC: 47.052
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_Tv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_ga)
##
```

```
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   4.4467  -2.2233
##     141
## -2.2233
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.223      1.468   1.514    0.190
## CountrySWA    -2.223      2.937  -0.757    0.483
## CountryMOZ    -2.223      2.937  -0.757    0.483
## CountrySAF    -1.751      1.942  -0.901    0.409
##
## (Dispersion parameter for gaussian family taken to be 6.467668)
##
##     Null deviance: 39.919  on 8  degrees of freedom
## Residual deviance: 32.338  on 5  degrees of freedom
## AIC: 47.052
##
## Number of Fisher Scoring iterations: 2
```

```
##Tsg
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_Tsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -10.72    5.07   13.81    0.00   -8.16    0.00    0.00    0.00    0.00
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.720      4.461   2.403   0.0614 .
## CountryURT   -10.720      6.814  -1.573   0.1765
## CountrySWA   -10.720      9.974  -1.075   0.3316
## CountryMOZ    -6.720      9.974  -0.674   0.5304
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 79.585)
##
##     Null deviance: 629.41  on 8  degrees of freedom
## Residual deviance: 397.93  on 5  degrees of freedom
## AIC: 69.642
##
## Number of Fisher Scoring iterations: 2
```

```r
data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_Tsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -10.72    5.07   13.81    0.00   -8.16    0.00    0.00    0.00    0.00
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.000      8.921   0.448    0.673
## CountrySAF     6.720      9.974   0.674    0.530
## CountryURT    -4.000     10.301  -0.388    0.714
## CountrySWA    -4.000     12.616  -0.317    0.764
##
## (Dispersion parameter for gaussian family taken to be 79.585)
##
##     Null deviance: 629.41  on 8  degrees of freedom
## Residual deviance: 397.93  on 5  degrees of freedom
## AIC: 69.642
##
## Number of Fisher Scoring iterations: 2
```

```r
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_Tsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -10.72    5.07   13.81    0.00   -8.16    0.00    0.00    0.00    0.00
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.035e-15  8.921e+00   0.000    1.000
## CountryMOZ   4.000e+00  1.262e+01   0.317    0.764
## CountrySAF   1.072e+01  9.974e+00   1.075    0.332
## CountryURT   7.179e-15  1.030e+01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 79.585)
##
##     Null deviance: 629.41  on 8  degrees of freedom
## Residual deviance: 397.93  on 5  degrees of freedom
```

```
## AIC: 69.642
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_Tsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -10.72    5.07   13.81    0.00   -8.16    0.00    0.00    0.00    0.00
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2.335e-17  5.151e+00   0.000    1.000
## CountrySWA  3.121e-15  1.030e+01   0.000    1.000
## CountryMOZ  4.000e+00  1.030e+01   0.388    0.714
## CountrySAF  1.072e+01  6.814e+00   1.573    0.176
##
## (Dispersion parameter for gaussian family taken to be 79.585)
##
##     Null deviance: 629.41  on 8  degrees of freedom
## Residual deviance: 397.93  on 5  degrees of freedom
## AIC: 69.642
##
## Number of Fisher Scoring iterations: 2
```

```
##TZ
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_Tz) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -3.575   6.955   0.195   0.000  -3.575   0.000  -6.113  -9.443  15.557
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    3.575      4.704   0.760    0.482
## CountryURT     5.868      7.185   0.817    0.451
## CountrySWA    -3.575     10.518  -0.340    0.748
## CountryMOZ    -3.575     10.518  -0.340    0.748
##
```

```
## (Dispersion parameter for gaussian family taken to be 88.50611)
##
##     Null deviance: 559.26  on 8  degrees of freedom
## Residual deviance: 442.53  on 5  degrees of freedom
## AIC: 70.598
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_Tz) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -3.575   6.955   0.195   0.000  -3.575   0.000  -6.113  -9.443  15.557
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.882e-16  9.408e+00   0.000    1.000
## CountrySAF   3.575e+00  1.052e+01   0.340    0.748
## CountryURT   9.443e+00  1.086e+01   0.869    0.424
## CountrySWA   1.256e-15  1.330e+01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 88.50611)
##
##     Null deviance: 559.26  on 8  degrees of freedom
## Residual deviance: 442.53  on 5  degrees of freedom
## AIC: 70.598
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_Tz) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -3.575   6.955   0.195   0.000  -3.575   0.000  -6.113  -9.443  15.557
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.241e-15  9.408e+00   0.000    1.000
## CountryMOZ  -3.533e-15  1.330e+01   0.000    1.000
```

```
## CountrySAF   3.575e+00  1.052e+01   0.340    0.748
## CountryURT   9.443e+00  1.086e+01   0.869    0.424
##
## (Dispersion parameter for gaussian family taken to be 88.50611)
##
##     Null deviance: 559.26  on 8  degrees of freedom
## Residual deviance: 442.53  on 5  degrees of freedom
## AIC: 70.598
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_Tz) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##     27      41      46      53      59      75      76     132     141
## -3.575   6.955   0.195   0.000  -3.575   0.000  -6.113  -9.443  15.557
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.443      5.432   1.739    0.143
## CountrySWA    -9.443     10.863  -0.869    0.424
## CountryMOZ    -9.443     10.863  -0.869    0.424
## CountrySAF    -5.868      7.185  -0.817    0.451
##
## (Dispersion parameter for gaussian family taken to be 88.50611)
##
##     Null deviance: 559.26  on 8  degrees of freedom
## Residual deviance: 442.53  on 5  degrees of freedom
## AIC: 70.598
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTv
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_TcTv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   0.0000   0.0000
##     141
```

```
##  0.0000
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4725     0.3660   1.291    0.253
## CountryURT   -0.4725     0.5591  -0.845    0.437
## CountrySWA   -0.4725     0.8184  -0.577    0.589
## CountryMOZ   -0.4725     0.8184  -0.577    0.589
##
## (Dispersion parameter for gaussian family taken to be 0.535815)
##
##     Null deviance: 3.1752  on 8  degrees of freedom
## Residual deviance: 2.6791  on 5  degrees of freedom
## AIC: 24.635
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_TcTv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   0.0000   0.0000
##     141
##  0.0000
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.850e-16  7.320e-01   0.000    1.000
## CountrySAF   4.725e-01  8.184e-01   0.577    0.589
## CountryURT   2.027e-16  8.452e-01   0.000    1.000
## CountrySWA   0.000e+00  1.035e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.535815)
##
##     Null deviance: 3.1752  on 8  degrees of freedom
## Residual deviance: 2.6791  on 5  degrees of freedom
## AIC: 24.635
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_TcTv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   0.0000   0.0000
##     141
##  0.0000
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.463e-16  7.320e-01   0.000    1.000
## CountryMOZ   3.533e-16  1.035e+00   0.000    1.000
## CountrySAF   4.725e-01  8.184e-01   0.577    0.589
## CountryURT   4.487e-16  8.452e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.535815)
##
##     Null deviance: 3.1752  on 8  degrees of freedom
## Residual deviance: 2.6791  on 5  degrees of freedom
## AIC: 24.635
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_TcTv) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##      27       41       46       53       59       75       76      132
## -0.4725  -0.4725   1.4175   0.0000  -0.4725   0.0000   0.0000   0.0000
##     141
##  0.0000
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.405e-16  4.226e-01   0.000    1.000
## CountrySWA  -2.650e-16  8.452e-01   0.000    1.000
## CountryMOZ   0.000e+00  8.452e-01   0.000    1.000
## CountrySAF   4.725e-01  5.591e-01   0.845    0.437
##
## (Dispersion parameter for gaussian family taken to be 0.535815)
##
##     Null deviance: 3.1752  on 8  degrees of freedom
## Residual deviance: 2.6791  on 5  degrees of freedom
```

```
## AIC: 24.635
##
## Number of Fisher Scoring iterations: 2

##TcTsg
data_ga$Country <- relevel(data_ga$Country, ref= "SAF")
model1<-glm((Prev_TcTsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -0.91   0.84   0.98   0.00  -0.91   0.00   0.00   0.00   0.00
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9100     0.4076   2.233   0.0759 .
## CountryURT   -0.9100     0.6226  -1.462   0.2037
## CountrySWA   -0.9100     0.9113  -0.999   0.3639
## CountryMOZ   -0.9100     0.9113  -0.999   0.3639
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.66444)
##
##     Null deviance: 5.1624  on 8  degrees of freedom
## Residual deviance: 3.3222  on 5  degrees of freedom
## AIC: 26.572
##
## Number of Fisher Scoring iterations: 2

data_ga$Country <- relevel(data_ga$Country, ref= "MOZ")
model1<-glm((Prev_TcTsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -0.91   0.84   0.98   0.00  -0.91   0.00   0.00   0.00   0.00
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.961e-16  8.151e-01   0.000    1.000
## CountrySAF   9.100e-01  9.113e-01   0.999    0.364
## CountryURT   1.013e-16  9.412e-01   0.000    1.000
```

```
## CountrySWA   0.000e+00  1.153e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.66444)
##
##     Null deviance: 5.1624  on 8  degrees of freedom
## Residual deviance: 3.3222  on 5  degrees of freedom
## AIC: 26.572
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "SWA")
model1<-glm((Prev_TcTsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -0.91   0.84   0.98   0.00  -0.91   0.00   0.00   0.00   0.00
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.835e-16  8.151e-01   0.000    1.000
## CountryMOZ   5.888e-16  1.153e+00   0.000    1.000
## CountrySAF   9.100e-01  9.113e-01   0.999    0.364
## CountryURT   7.692e-16  9.412e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.66444)
##
##     Null deviance: 5.1624  on 8  degrees of freedom
## Residual deviance: 3.3222  on 5  degrees of freedom
## AIC: 26.572
##
## Number of Fisher Scoring iterations: 2
```

```
data_ga$Country <- relevel(data_ga$Country, ref= "URT")
model1<-glm((Prev_TcTsg) ~ Country,data=data_ga, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_ga)
##
## Deviance Residuals:
##    27     41     46     53     59     75     76    132    141
## -0.91   0.84   0.98   0.00  -0.91   0.00   0.00   0.00   0.00
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept) -5.847e-17  4.706e-01   0.000    1.000
## CountrySWA   1.108e-16  9.412e-01   0.000    1.000
## CountryMOZ   4.154e-16  9.412e-01   0.000    1.000
## CountrySAF   9.100e-01  6.226e-01   1.462    0.204
##
## (Dispersion parameter for gaussian family taken to be 0.66444)
##
##     Null deviance: 5.1624  on 8  degrees of freedom
## Residual deviance: 3.3222  on 5  degrees of freedom
## AIC: 26.572
##
## Number of Fisher Scoring iterations: 2

#------------------------------------------------------------------------
###For Gb
data_gb <- subset(data, Species=="Gb")
data_gb

##    Country                 Localisation Species Sex Sample Prev_Sod Prev_T
spp
## 7      SAF                       Phinda      Gb  NI      7     4.12      0
.00
## 50     SAF                     Hluhluwe      Gb  NI     50     0.00     32
.00
## 51     SAF North eastern KwaZulu-Natal       Gb  NI     51     0.00      4
.00
## 52     MOZ   Reserva Especial de Maputo      Gb  NI     52    14.00      6
.00
## 74     SAF                  SAFint Lucia      Gb  NI     74     0.00     43
.33
##    Prev_Tc Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_Tv
Tz
## 7        0    0.00    0.00     0.00         0         0          0
0
## 50      12    2.00   14.00     4.00         0         0          0
0
## 51       2    0.00    0.00     2.00         0         0          0
0
## 52       0    2.00    0.00     2.00         0         0          0
0
## 74       0    3.33    3.33    36.67         0         0          0
0
##    Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 7           0          0           0
## 50          0          0           0
## 51          0          0           0
## 52          2          0           0
## 74          0          0           0
```

```r
##Tc
data_gb$Country <- relevel(data_gb$Country, ref= "SAF")
model1<-glm((Prev_Tc) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##    7    50    51    52    74
## -3.5   8.5  -1.5   0.0  -3.5
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    3.500      2.872   1.219    0.310
## CountryMOZ    -3.500      6.423  -0.545    0.624
##
## (Dispersion parameter for gaussian family taken to be 33)
##
##     Null deviance: 108.8  on 4  degrees of freedom
## Residual deviance:  99.0  on 3  degrees of freedom
## AIC: 35.118
##
## Number of Fisher Scoring iterations: 2

##Tv
data_gb$Country <- relevel(data_gb$Country, ref= "SAF")
model1<-glm((Prev_Tv) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##       7       50       51       52       74
## -1.3325   0.6675  -1.3325   0.0000   1.9975
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.3325     0.8158   1.633    0.201
## CountryMOZ    0.6675     1.8242   0.366    0.739
##
## (Dispersion parameter for gaussian family taken to be 2.662225)
##
##     Null deviance: 8.3431  on 4  degrees of freedom
## Residual deviance: 7.9867  on 3  degrees of freedom
## AIC: 22.531
```

```
##
## Number of Fisher Scoring iterations: 2

##Tsg
data_gb$Country <- relevel(data_gb$Country, ref= "SAF")
model1<-glm((Prev_Tsg) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##       7       50       51       52       74
## -10.668   -6.668   -8.668    0.000   26.003
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.668      8.706   1.225    0.308
## CountryMOZ    -8.668     19.467  -0.445    0.686
##
## (Dispersion parameter for gaussian family taken to be 303.1689)
##
##     Null deviance: 969.61  on 4  degrees of freedom
## Residual deviance: 909.51  on 3  degrees of freedom
## AIC: 46.207
##
## Number of Fisher Scoring iterations: 2

##Tz
data_gb$Country <- relevel(data_gb$Country, ref= "SAF")
model1<-glm((Prev_Tz) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##      7      50      51      52      74
## -4.332   9.668  -4.332   0.000  -1.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.332      3.317   1.306    0.283
## CountryMOZ    -4.333      7.416  -0.584    0.600
##
## (Dispersion parameter for gaussian family taken to be 44.00223)
##
##     Null deviance: 147.02  on 4  degrees of freedom
## Residual deviance: 132.01  on 3  degrees of freedom
```

```
## AIC: 36.556
##
## Number of Fisher Scoring iterations: 2

##TvTsg
data_gb$Country <- relevel(data_gb$Country, ref= "SAF")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gb, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gb)
##
## Deviance Residuals:
##          7          50          51          52          74
##  1.986e-16   1.986e-16   1.986e-16  -8.882e-16   1.986e-16
##
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -1.986e-16  2.809e-16 -7.070e-01     0.53
## CountryMOZ   2.000e+00  6.280e-16  3.185e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3.155444e-31)
##
##     Null deviance: 3.2000e+00  on 4  degrees of freedom
## Residual deviance: 9.4663e-31  on 3  degrees of freedom
## AIC: -333.52
##
## Number of Fisher Scoring iterations: 1

#-------------------------------------------------------------------------
###For Gff
data_gff <- subset(data, Species=="Gff")
data_gff

##    Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pre
v_Tv
## 16     UGA Buvuma island     Gff  NI     16     4.26     10.64    3.19
2.13
## 49     KEN      Ikapolok     Gff  NI     49    39.22     37.25    1.96
9.80
## 61     KEN        Obekai     Gff  NI     61     0.00      5.26    2.63
2.63
##    Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 16    1.06     3.19      0.00      0.00       1.06         0          0
## 49    0.00    19.61      3.92      1.96       0.00         0          0
## 61    0.00     0.00      0.00      0.00       0.00         0          0
##    Prev_TzTsg Prev_TcTvTz
## 16          0           0
```

```
## 49          0           0
## 61          0           0
```

```
##Tv
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_Tv) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##  0.000   3.585  -3.585
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.215      3.585   1.734    0.333
## CountryUGA    -4.085      6.209  -0.658    0.630
##
## (Dispersion parameter for gaussian family taken to be 25.70445)
##
##     Null deviance: 36.829  on 2  degrees of freedom
## Residual deviance: 25.704  on 1  degrees of freedom
## AIC: 20.958
##
## Number of Fisher Scoring iterations: 2
```

```
##Tc
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_Tc) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##  0.000  -0.335   0.335
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.2950     0.3350   6.851   0.0923 .
## CountryUGA    0.8950     0.5802   1.542   0.3662
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.22445)
##
```

```
##     Null deviance: 0.75847  on 2  degrees of freedom
## Residual deviance: 0.22445  on 1  degrees of freedom
## AIC: 6.7355
##
## Number of Fisher Scoring iterations: 2
```

```
##Tz
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_Tz) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##       16        49        61
## 0.00e+00  6.41e-17  6.41e-17
##
## Coefficients:
##              Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -6.41e-17   6.41e-17 -1.000e+00      0.5
## CountryUGA   1.06e+00   1.11e-16  9.548e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 8.217301e-33)
##
##     Null deviance: 7.4907e-01  on 2  degrees of freedom
## Residual deviance: 8.2173e-33  on 1  degrees of freedom
## AIC: -210.42
##
## Number of Fisher Scoring iterations: 1
```

```
##Tsg
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_Tsg) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##     16      49      61
##  0.000   9.805  -9.805
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.805      9.805    1.00    0.500
## CountryUGA    -6.615     16.983   -0.39    0.764
```

```
##
## (Dispersion parameter for gaussian family taken to be 192.276)
##
##     Null deviance: 221.45  on 2  degrees of freedom
## Residual deviance: 192.28  on 1  degrees of freedom
## AIC: 26.995
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTv
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_TcTv) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##    16     49     61
##  0.00   1.96  -1.96
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.960      1.960   1.000    0.500
## CountryUGA    -1.960      3.395  -0.577    0.667
##
## (Dispersion parameter for gaussian family taken to be 7.6832)
##
##     Null deviance: 10.2443  on 2  degrees of freedom
## Residual deviance:  7.6832  on 1  degrees of freedom
## AIC: 17.335
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTz
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_TcTz) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gff)
##
## Deviance Residuals:
##    16     49     61
##  0.00   0.98  -0.98
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.980      0.980   1.000    0.500
```

```
## CountryUGA    -0.980      1.697  -0.577    0.667
##
## (Dispersion parameter for gaussian family taken to be 1.9208)
##
##     Null deviance: 2.5611  on 2  degrees of freedom
## Residual deviance: 1.9208  on 1  degrees of freedom
## AIC: 13.176
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTsg
data_gff$Country <- relevel(data_gff$Country, ref= "KEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gff, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gff
)
##
## Deviance Residuals:
##       16        49        61
## 0.00e+00  6.41e-17  6.41e-17
##
## Coefficients:
##              Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -6.41e-17   6.41e-17 -1.000e+00      0.5
## CountryUGA   1.06e+00   1.11e-16  9.548e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 8.217301e-33)
##
##     Null deviance: 7.4907e-01  on 2  degrees of freedom
## Residual deviance: 8.2173e-33  on 1  degrees of freedom
## AIC: -210.42
##
## Number of Fisher Scoring iterations: 1
```

```
#---------------------------------------------------------------------
###For Gmm
data_gmm <- subset(data, Species=="Gmm")
data_gmm
```

```
##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 21      KEN          Kari     Gmm  NI     21    63.53      2.35    2.35
0.00
## 22      URT MaSAFng-URTga     Gmm  NI     22    76.54     53.09   18.52
1.23
## 26      ZIM        Makuti     Gmm  NI     26    26.92     91.03   11.54
```

```
0.00
## 93      ZIM      Kemukura     Gmm  NI     93    22.22      5.56    0.00
5.56
## 100     ZIM     Rukomeshi     Gmm  NI    100    20.00      0.00    0.00
0.00
## 105     ZIM     Mukondore     Gmm  NI    105    23.08      7.69    7.69
0.00
## 115     ZIM     M. chiuyi     Gmm  NI    115    11.11      0.00    0.00
0.00
## 131     ZIM       Mushumb     Gmm  NI    131     0.00     33.33   16.67
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 21     0.00     0.00         0         0       0.00         0       0.00
## 22     1.23    18.52         0         0       6.17         0       6.17
## 26     2.56    69.23         0         0       7.69         0       0.00
## 93     0.00     0.00         0         0       0.00         0       0.00
## 100    0.00     0.00         0         0       0.00         0       0.00
## 105    0.00     0.00         0         0       0.00         0       0.00
## 115    0.00     0.00         0         0       0.00         0       0.00
## 131    0.00    16.67         0         0       0.00         0       0.00
##     Prev_TzTsg Prev_TcTvTz
## 21        0.00           0
## 22        1.23           0
## 26        0.00           0
## 93        0.00           0
## 100       0.00           0
## 105       0.00           0
## 115       0.00           0
## 131       0.00           0
```

```r
##Tc
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_Tc) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   5.557  -5.983  -5.983   1.707  -5.983  10.687
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.983      2.918   2.051   0.0956 .
## CountryURT    12.537      7.720   1.624   0.1653
## CountryKEN    -3.633      7.720  -0.471   0.6577
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for gaussian family taken to be 51.07899)
##
##     Null deviance: 415.86  on 7  degrees of freedom
## Residual deviance: 255.39  on 5  degrees of freedom
## AIC: 58.41
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_Tc) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   5.557  -5.983  -5.983   1.707  -5.983  10.687
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.350      7.147   0.329    0.756
## CountryZIM     3.633      7.720   0.471    0.658
## CountryURT    16.170     10.107   1.600    0.171
##
## (Dispersion parameter for gaussian family taken to be 51.07899)
##
##     Null deviance: 415.86  on 7  degrees of freedom
## Residual deviance: 255.39  on 5  degrees of freedom
## AIC: 58.41
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_Tc) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   5.557  -5.983  -5.983   1.707  -5.983  10.687
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18.520      7.147   2.591   0.0488 *
## CountryKEN   -16.170     10.107  -1.600   0.1705
```

```
## CountryZIM   -12.537      7.720  -1.624   0.1653
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 51.07899)
##
##     Null deviance: 415.86  on 7  degrees of freedom
## Residual deviance: 255.39  on 5  degrees of freedom
## AIC: 58.41
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_Tc) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   5.557  -5.983  -5.983   1.707  -5.983  10.687
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.983      2.918   2.051   0.0956 .
## CountryURT    12.537      7.720   1.624   0.1653
## CountryKEN    -3.633      7.720  -0.471   0.6577
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 51.07899)
##
##     Null deviance: 415.86  on 7  degrees of freedom
## Residual deviance: 255.39  on 5  degrees of freedom
## AIC: 58.41
##
## Number of Fisher Scoring iterations: 2
```

```
##Tv
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_Tv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
```

```
##  0.0000   0.0000  -0.9267   4.6333  -0.9267  -0.9267  -0.9267  -0.9267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9267     0.9267   1.000    0.363
## CountryURT    0.3033     2.4517   0.124    0.906
## CountryKEN   -0.9267     2.4517  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 5.152267)
##
##     Null deviance: 26.663  on 7  degrees of freedom
## Residual deviance: 25.761  on 5  degrees of freedom
## AIC: 40.058
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_Tv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000  -0.9267   4.6333  -0.9267  -0.9267  -0.9267  -0.9267
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.850e-16  2.270e+00   0.000    1.000
## CountryZIM   9.267e-01  2.452e+00   0.378    0.721
## CountryURT   1.230e+00  3.210e+00   0.383    0.717
##
## (Dispersion parameter for gaussian family taken to be 5.152267)
##
##     Null deviance: 26.663  on 7  degrees of freedom
## Residual deviance: 25.761  on 5  degrees of freedom
## AIC: 40.058
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_Tv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
```

```
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000  -0.9267   4.6333  -0.9267  -0.9267  -0.9267  -0.9267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.2300     2.2699   0.542    0.611
## CountryKEN   -1.2300     3.2101  -0.383    0.717
## CountryZIM   -0.3033     2.4517  -0.124    0.906
##
## (Dispersion parameter for gaussian family taken to be 5.152267)
##
##     Null deviance: 26.663  on 7  degrees of freedom
## Residual deviance: 25.761  on 5  degrees of freedom
## AIC: 40.058
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_Tv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000  -0.9267   4.6333  -0.9267  -0.9267  -0.9267  -0.9267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9267     0.9267   1.000    0.363
## CountryURT    0.3033     2.4517   0.124    0.906
## CountryKEN   -0.9267     2.4517  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 5.152267)
##
##     Null deviance: 26.663  on 7  degrees of freedom
## Residual deviance: 25.761  on 5  degrees of freedom
## AIC: 40.058
##
## Number of Fisher Scoring iterations: 2
```

```
##Tsg
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_Tsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gmm)
```

```
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000   54.913  -14.317  -14.317  -14.317  -14.317    2.353
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.317     11.315   1.265    0.262
## CountryURT     4.203     29.937   0.140    0.894
## CountryKEN   -14.317     29.937  -0.478    0.653
##
## (Dispersion parameter for gaussian family taken to be 768.176)
##
##     Null deviance: 4050.7  on 7  degrees of freedom
## Residual deviance: 3840.9  on 5  degrees of freedom
## AIC: 80.095
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_Tsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000   54.913  -14.317  -14.317  -14.317  -14.317    2.353
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.507e-14  2.772e+01   0.000    1.000
## CountryZIM   1.432e+01  2.994e+01   0.478    0.653
## CountryURT   1.852e+01  3.920e+01   0.472    0.656
##
## (Dispersion parameter for gaussian family taken to be 768.176)
##
##     Null deviance: 4050.7  on 7  degrees of freedom
## Residual deviance: 3840.9  on 5  degrees of freedom
## AIC: 80.095
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_Tsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000   54.913  -14.317  -14.317  -14.317  -14.317    2.353
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18.520     27.716   0.668    0.534
## CountryKEN   -18.520     39.196  -0.472    0.656
## CountryZIM    -4.203     29.937  -0.140    0.894
##
## (Dispersion parameter for gaussian family taken to be 768.176)
##
##     Null deviance: 4050.7  on 7  degrees of freedom
## Residual deviance: 3840.9  on 5  degrees of freedom
## AIC: 80.095
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_Tsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##   0.000    0.000   54.913  -14.317  -14.317  -14.317  -14.317    2.353
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14.317     11.315   1.265    0.262
## CountryURT     4.203     29.937   0.140    0.894
## CountryKEN   -14.317     29.937  -0.478    0.653
##
## (Dispersion parameter for gaussian family taken to be 768.176)
##
##     Null deviance: 4050.7  on 7  degrees of freedom
## Residual deviance: 3840.9  on 5  degrees of freedom
## AIC: 80.095
##
## Number of Fisher Scoring iterations: 2
```

```
##Tz
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_Tz) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000   2.1333  -0.4267  -0.4267  -0.4267  -0.4267  -0.4267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4267     0.4267   1.000    0.363
## CountryURT    0.8033     1.1289   0.712    0.509
## CountryKEN   -0.4267     1.1289  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 1.092267)
##
##     Null deviance: 6.2710  on 7  degrees of freedom
## Residual deviance: 5.4613  on 5  degrees of freedom
## AIC: 27.649
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_Tz) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000   2.1333  -0.4267  -0.4267  -0.4267  -0.4267  -0.4267
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.065e-16  1.045e+00   0.000    1.000
## CountryZIM   4.267e-01  1.129e+00   0.378    0.721
## CountryURT   1.230e+00  1.478e+00   0.832    0.443
##
## (Dispersion parameter for gaussian family taken to be 1.092267)
##
##     Null deviance: 6.2710  on 7  degrees of freedom
## Residual deviance: 5.4613  on 5  degrees of freedom
## AIC: 27.649
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_Tz) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000   2.1333  -0.4267  -0.4267  -0.4267  -0.4267  -0.4267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.2300     1.0451   1.177    0.292
## CountryKEN   -1.2300     1.4780  -0.832    0.443
## CountryZIM   -0.8033     1.1289  -0.712    0.509
##
## (Dispersion parameter for gaussian family taken to be 1.092267)
##
##     Null deviance: 6.2710  on 7  degrees of freedom
## Residual deviance: 5.4613  on 5  degrees of freedom
## AIC: 27.649
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_Tz) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##      21       22       26       93      100      105      115      131
##  0.0000   0.0000   2.1333  -0.4267  -0.4267  -0.4267  -0.4267  -0.4267
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4267     0.4267   1.000    0.363
## CountryURT    0.8033     1.1289   0.712    0.509
## CountryKEN   -0.4267     1.1289  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 1.092267)
##
##     Null deviance: 6.2710  on 7  degrees of freedom
## Residual deviance: 5.4613  on 5  degrees of freedom
## AIC: 27.649
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTv
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_TcTv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryURT         0          0      NA       NA
## CountryKEN         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 7  degrees of freedom
## Residual deviance: 0  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_TcTv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryZIM         0          0      NA       NA
## CountryURT         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 7  degrees of freedom
```

```
## Residual deviance: 0  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_TcTv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryKEN         0          0      NA       NA
## CountryZIM         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 7  degrees of freedom
## Residual deviance: 0  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_TcTv) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gmm)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryURT         0          0      NA       NA
## CountryKEN         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
```

```
##     Null deviance: 0  on 7  degrees of freedom
## Residual deviance: 0  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
##TcTsg
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   6.408  -1.282  -1.282  -1.282  -1.282  -1.282
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.282      1.282   1.000    0.363
## CountryURT     4.888      3.391   1.442    0.209
## CountryKEN    -1.282      3.391  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 9.856017)
##
##     Null deviance: 73.193  on 7  degrees of freedom
## Residual deviance: 49.280  on 5  degrees of freedom
## AIC: 45.248
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   6.408  -1.282  -1.282  -1.282  -1.282  -1.282
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.652e-15  3.139e+00   0.000    1.000
## CountryZIM   1.282e+00  3.391e+00   0.378    0.721
```

```
## CountryURT   6.170e+00  4.440e+00   1.390    0.223
##
## (Dispersion parameter for gaussian family taken to be 9.856017)
##
##     Null deviance: 73.193  on 7  degrees of freedom
## Residual deviance: 49.280  on 5  degrees of freedom
## AIC: 45.248
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   6.408  -1.282  -1.282  -1.282  -1.282  -1.282
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.170      3.139   1.965    0.107
## CountryKEN    -6.170      4.440  -1.390    0.223
## CountryZIM    -4.888      3.391  -1.442    0.209
##
## (Dispersion parameter for gaussian family taken to be 9.856017)
##
##     Null deviance: 73.193  on 7  degrees of freedom
## Residual deviance: 49.280  on 5  degrees of freedom
## AIC: 45.248
##
## Number of Fisher Scoring iterations: 2
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##     21      22      26      93     100     105     115     131
##  0.000   0.000   6.408  -1.282  -1.282  -1.282  -1.282  -1.282
##
## Coefficients:
```

```
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.282      1.282   1.000    0.363
## CountryURT     4.888      3.391   1.442    0.209
## CountryKEN    -1.282      3.391  -0.378    0.721
##
## (Dispersion parameter for gaussian family taken to be 9.856017)
##
##     Null deviance: 73.193  on 7  degrees of freedom
## Residual deviance: 49.280  on 5  degrees of freedom
## AIC: 45.248
##
## Number of Fisher Scoring iterations: 2
```

```
##TvTsg
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     0.00       0.00      NA       NA
## CountryURT      6.17       0.00     Inf   <2e-16 ***
## CountryKEN      0.00       0.00      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 33.31  on 7  degrees of freedom
## Residual deviance:  0.00  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gmm
)
```

```
##
## Deviance Residuals:
##         21          22          26          93         100         105
##  0.000e+00  -8.882e-16   0.000e+00   0.000e+00   0.000e+00   0.000e+00
##        115         131
##  0.000e+00   0.000e+00
##
## Coefficients:
##              Estimate Std. Error   t value Pr(>|t|)
## (Intercept) 0.000e+00  3.972e-16 0.000e+00        1
## CountryZIM  0.000e+00  4.290e-16 0.000e+00        1
## CountryURT  6.170e+00  5.617e-16 1.098e+16   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.577722e-31)
##
##     Null deviance: 3.3310e+01  on 7  degrees of freedom
## Residual deviance: 7.8886e-31  on 5  degrees of freedom
## AIC: -540.45
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##        21         22         26         93        100        105        11
5
## 4.441e-15  8.882e-16  1.776e-15  1.776e-15  1.776e-15  1.776e-15  1.776e-1
5
##       131
## 1.776e-15
##
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept)  6.170e+00  2.809e-15  2.197e+15   <2e-16 ***
## CountryKEN  -6.170e+00  3.972e-15 -1.553e+15   <2e-16 ***
## CountryZIM  -6.170e+00  3.034e-15 -2.034e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.888609e-30)
##
```

```
##     Null deviance: 3.3310e+01  on 7  degrees of freedom
## Residual deviance: 3.9443e-29  on 5  degrees of freedom
## AIC: -509.15
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##  21   22   26   93  100  105  115  131
##   0    0    0    0    0    0    0    0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)     0.00       0.00      NA       NA
## CountryURT      6.17       0.00     Inf   <2e-16 ***
## CountryKEN      0.00       0.00      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 33.31  on 7  degrees of freedom
## Residual deviance:  0.00  on 5  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
##TzTsg
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZAM")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##         21          22          26          93         100         105
##  1.887e-16  -6.661e-16   7.850e-17   7.850e-17   7.850e-17   7.850e-17
##        115         131
##  7.850e-17   7.850e-17
##
```

```
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -7.850e-17  1.312e-16 -5.980e-01    0.576
## CountryURT   1.230e+00  3.471e-16  3.544e+15   <2e-16 ***
## CountryKEN  -1.102e-16  3.471e-16 -3.170e-01    0.764
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.032607e-31)
##
##     Null deviance: 1.3238e+00  on 7  degrees of freedom
## Residual deviance: 5.1630e-31  on 5  degrees of freedom
## AIC: -543.84
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "KEN")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##         21          22          26          93         100         105
##  2.523e-16   4.441e-16  -1.103e-16  -1.103e-16  -1.103e-16  -1.103e-16
##        115         131
## -1.103e-16  -1.103e-16
##
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -2.523e-16  2.584e-16 -9.760e-01    0.374
## CountryZIM   3.626e-16  2.791e-16  1.299e+00    0.251
## CountryURT   1.230e+00  3.654e-16  3.366e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.676913e-32)
##
##     Null deviance: 1.3238e+00  on 7  degrees of freedom
## Residual deviance: 3.3385e-31  on 5  degrees of freedom
## AIC: -547.33
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "URT")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##        21         22         26         93        100        105        11
5
## 6.661e-16  6.661e-16  2.220e-16  2.220e-16  2.220e-16  2.220e-16  2.220e-1
6
##       131
## 2.220e-16
##
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept)  1.230e+00  4.865e-16  2.528e+15   <2e-16 ***
## CountryKEN  -1.230e+00  6.880e-16 -1.788e+15   <2e-16 ***
## CountryZIM  -1.230e+00  5.255e-16 -2.341e+15   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 2.366583e-31)
##
##     Null deviance: 1.3238e+00  on 7  degrees of freedom
## Residual deviance: 1.1833e-30  on 5  degrees of freedom
## AIC: -537.21
##
## Number of Fisher Scoring iterations: 1
```

```
data_gmm$Country <- relevel(data_gmm$Country, ref= "ZIM")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gmm, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gmm
)
##
## Deviance Residuals:
##         21          22          26          93         100         105
##  1.887e-16  -6.661e-16   7.850e-17   7.850e-17   7.850e-17   7.850e-17
##        115         131
##  7.850e-17   7.850e-17
##
## Coefficients:
##               Estimate Std. Error    t value Pr(>|t|)
## (Intercept) -7.850e-17  1.312e-16 -5.980e-01    0.576
## CountryURT   1.230e+00  3.471e-16  3.544e+15   <2e-16 ***
## CountryKEN  -1.102e-16  3.471e-16 -3.170e-01    0.764
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1.032607e-31)
##
##     Null deviance: 1.3238e+00  on 7  degrees of freedom
## Residual deviance: 5.1630e-31  on 5  degrees of freedom
## AIC: -543.84
##
## Number of Fisher Scoring iterations: 1

#-------------------------------------------------------------------------
---
###For Gp
data_gp <- subset(data, Species=="Gp")
data_gp

##     Country          Localisation Species Sex Sample Prev_Sod Prev_Tspp Pr
ev_Tc
## 1       ETH Arba minch, nech SAFr      Gp  NI      1    20.48     20.04
6.10
## 5       KEN               Katotoi      Gp  NI      5    42.56     88.72
21.54
## 6       KEN                  Mwea      Gp  NI      6     3.08     19.49
7.18
## 8       ZAM                 Mfuwe      Gp  NI      8     2.05     45.21
1.37
## 9       URT              URTzania      Gp  NI      9    78.77     19.86
6.16
## 17      KEN                  Kari      Gp  NI     17    89.36      2.13
1.06
## 19      KEN                Koibos      Gp  NI     19     0.00     71.59
15.91
## 20      KEN        Meru nat. parc      Gp  NI     20    22.99     70.11
29.89
## 23      KEN        Ruma nat. parc      Gp  NI     23    26.25     17.50
10.00
## 31      URT         MaSAFng-URTga      Gp  NI     31    66.20     73.24
33.80
## 38      KEN                 Emsos      Gp  NI     38     0.00     93.33
15.00
## 42      UGA                Budaka      Gp  NI     42    94.55      7.27
1.82
## 60      ZIM                Makuti      Gp  NI     60    15.79     86.84
7.89
## 79      UGA                 Omugo      Gp  NI     79   100.00      0.00
0.00
## 81      ZIM               Mushumb      Gp  NI     81     3.85     19.23
3.85
## 85      UGA                  Lira      Gp  NI     85     0.00     16.00
8.00
```

```
## 90      KEN                 Kiria      Gp  NI     90     0.00     80.00
55.00
## 101     KEN        Mwea nat. parc      Gp  NI    101     0.00     13.33
13.33
## 118     UGA                 Moyo       Gp  NI    118    87.50     12.50
0.00
## 139     ZIM             Rukomeshi      Gp  NI    139     0.00      0.00
0.00
## 140     ZIM                 Gokwe      Gp  NI    140     0.00      0.00
0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 1      0.65    1.09    10.46      0.00      0.00       0.65      0.00
## 5     15.38    0.51    26.15      6.67      1.54      15.90      1.03
## 6      0.51    1.03     7.69      1.03      0.51       0.51      0.00
## 8      0.68    0.68    34.93      0.00      0.00       7.53      0.00
## 9      2.74    0.68     8.22      0.00      0.00       0.68      0.00
## 17     0.00    1.06     0.00      0.00      0.00       0.00      0.00
## 19     9.09    0.00    28.41      0.00      0.00      15.91      0.00
## 20     4.60    0.00    25.29      0.00      0.00      10.34      0.00
## 23     2.50    2.50     0.00      1.25      0.00       0.00      0.00
## 31     0.00    0.00    14.08      0.00      1.41      21.13      1.41
## 38     8.33    0.00    58.33      1.67      0.00      10.00      0.00
## 42     0.00    0.00     5.45      0.00      0.00       0.00      0.00
## 60     0.00    0.00    73.68      0.00      0.00       5.26      0.00
## 79     0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 81     0.00    7.69     3.85      0.00      0.00       3.85      0.00
## 85     0.00    4.00     4.00      0.00      0.00       0.00      0.00
## 90     5.00    0.00    10.00     10.00      0.00       0.00      0.00
## 101    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 118    0.00    0.00    12.50      0.00      0.00       0.00      0.00
## 139    0.00    0.00     0.00      0.00      0.00       0.00      0.00
## 140    0.00    0.00     0.00      0.00      0.00       0.00      0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 1         0.44       0.65           0
## 5         0.00       0.00           0
## 6         0.00       1.03           0
## 8         0.00       0.00           0
## 9         0.68       0.68           0
## 17        0.00       0.00           0
## 19        0.00       2.27           0
## 20        0.00       0.00           0
## 23        1.25       0.00           0
## 31        0.00       1.41           0
## 38        0.00       0.00           0
## 42        0.00       0.00           0
## 60        0.00       0.00           0
## 79        0.00       0.00           0
## 81        0.00       0.00           0
## 85        0.00       0.00           0
## 90        0.00       0.00           0
```

```
## 101       0.00       0.00           0
## 118       0.00       0.00           0
## 139       0.00       0.00           0
## 140       0.00       0.00           0

##Tc
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.100     12.881   0.474    0.643
## CountryZIM    -3.165     14.401  -0.220    0.829
## CountryZAM    -4.730     18.216  -0.260    0.799
## CountryUGA    -3.645     14.401  -0.253    0.804
## CountryURT    13.880     15.775   0.880    0.393
## CountryKEN    12.668     13.577   0.933    0.366
##
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2

data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18.768      4.294   4.371 0.000548 ***
## CountryETH   -12.668     13.577  -0.933 0.365589
```

```
## CountryZIM   -15.833      7.740  -2.046 0.058757 .
## CountryZAM   -17.398     13.577  -1.281 0.219512
## CountryUGA   -16.313      7.740  -2.108 0.052308 .
## CountryURT     1.212     10.069   0.120 0.905772
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.455      6.440   0.381   0.7084
## CountryKEN    16.313      7.740   2.108   0.0523 .
## CountryETH     3.645     14.401   0.253   0.8036
## CountryZIM     0.480      9.108   0.053   0.9587
## CountryZAM    -1.085     14.401  -0.075   0.9409
## CountryURT    17.525     11.155   1.571   0.1370
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19.980      9.108   2.194   0.0444 *
## CountryUGA   -17.525     11.155  -1.571   0.1370
## CountryKEN    -1.212     10.069  -0.120   0.9058
## CountryETH   -13.880     15.775  -0.880   0.3928
## CountryZIM   -17.045     11.155  -1.528   0.1473
## CountryZAM   -18.610     15.775  -1.180   0.2565
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.935      6.440   0.456   0.6551
## CountryURT    17.045     11.155   1.528   0.1473
## CountryUGA    -0.480      9.108  -0.053   0.9587
## CountryKEN    15.833      7.740   2.046   0.0588 .
## CountryETH     3.165     14.401   0.220   0.8290
## CountryZAM    -1.565     14.401  -0.109   0.9149
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_Tc) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -17.708   -3.768   -2.455    2.772   36.232
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.370     12.881   0.106    0.917
## CountryZIM     1.565     14.401   0.109    0.915
## CountryURT    18.610     15.775   1.180    0.256
## CountryUGA     1.085     14.401   0.075    0.941
## CountryKEN    17.398     13.577   1.281    0.220
## CountryETH     4.730     18.216   0.260    0.799
##
## (Dispersion parameter for gaussian family taken to be 165.9079)
##
##     Null deviance: 3859.7  on 20  degrees of freedom
## Residual deviance: 2488.6  on 15  degrees of freedom
## AIC: 173.87
##
## Number of Fisher Scoring iterations: 2
```

```
##Tv
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
```

```
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.650      3.794   0.171    0.866
## CountryZAM     0.030      5.365   0.006    0.996
## CountryZIM    -0.650      4.241  -0.153    0.880
## CountryURT     0.720      4.646   0.155    0.879
## CountryUGA    -0.650      4.241  -0.153    0.880
## CountryKEN     4.396      3.999   1.099    0.289
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.046      1.265   3.990  0.00118 **
## CountryETH    -4.396      3.999  -1.099  0.28900
## CountryZAM    -4.366      3.999  -1.092  0.29218
## CountryZIM    -5.046      2.280  -2.213  0.04279 *
## CountryURT    -3.676      2.966  -1.239  0.23424
## CountryUGA    -5.046      2.280  -2.213  0.04279 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.753e-16  1.897e+00   0.000   1.0000
## CountryKEN   5.046e+00  2.280e+00   2.213   0.0428 *
## CountryETH   6.500e-01  4.241e+00   0.153   0.8802
## CountryZAM   6.800e-01  4.241e+00   0.160   0.8748
## CountryZIM   1.648e-15  2.682e+00   0.000   1.0000
## CountryURT   1.370e+00  3.285e+00   0.417   0.6826
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.370      2.683   0.511    0.617
## CountryUGA    -1.370      3.285  -0.417    0.683
## CountryKEN     3.676      2.966   1.239    0.234
## CountryETH    -0.720      4.646  -0.155    0.879
## CountryZAM    -0.690      4.646  -0.149    0.884
## CountryZIM    -1.370      3.285  -0.417    0.683
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
```

```
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 7.268e-17  1.897e+00   0.000   1.0000
## CountryURT  1.370e+00  3.285e+00   0.417   0.6826
## CountryUGA  4.998e-16  2.682e+00   0.000   1.0000
## CountryKEN  5.046e+00  2.280e+00   2.213   0.0428 *
## CountryETH  6.500e-01  4.241e+00   0.153   0.8802
## CountryZAM  6.800e-01  4.241e+00   0.160   0.8748
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_Tv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0456  -0.4456   0.0000   0.0000  10.3344
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)    0.680      3.794   0.179    0.860
## CountryZIM    -0.680      4.241  -0.160    0.875
## CountryURT     0.690      4.646   0.149    0.884
## CountryUGA    -0.680      4.241  -0.160    0.875
## CountryKEN     4.366      3.999   1.092    0.292
## CountryETH    -0.030      5.365  -0.006    0.996
##
## (Dispersion parameter for gaussian family taken to be 14.39111)
##
##     Null deviance: 333.04  on 20  degrees of freedom
## Residual deviance: 215.87  on 15  degrees of freedom
## AIC: 122.53
##
## Number of Fisher Scoring iterations: 2
```

```
##Tsg
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.383  -15.533   -1.487    7.013   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.460     21.652   0.483    0.636
## CountryZAM    24.470     30.620   0.799    0.437
## CountryZIM     8.922     24.208   0.369    0.718
## CountryURT     0.690     26.518   0.026    0.980
## CountryUGA    -4.973     24.208  -0.205    0.840
## CountryKEN     6.859     22.823   0.301    0.768
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.382  -15.533   -1.487    7.013   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17.319      7.217   2.400   0.0298 *
## CountryETH    -6.859     22.823  -0.301   0.7679
## CountryZAM    17.611     22.823   0.772   0.4523
## CountryZIM     2.064     13.011   0.159   0.8761
## CountryURT    -6.169     16.926  -0.364   0.7206
## CountryUGA   -11.831     13.011  -0.909   0.3776
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.383  -15.533   -1.488    7.012   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.488     10.826   0.507    0.620
## CountryKEN    11.831     13.011   0.909    0.378
## CountryETH     4.972     24.208   0.205    0.840
## CountryZAM    29.442     24.208   1.216    0.243
## CountryZIM    13.895     15.310   0.908    0.378
## CountryURT     5.663     18.751   0.302    0.767
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
```

```
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.383  -15.533   -1.488    7.012   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11.150     15.310   0.728    0.478
## CountryUGA    -5.662     18.751  -0.302    0.767
## CountryKEN     6.169     16.926   0.364    0.721
## CountryETH    -0.690     26.518  -0.026    0.980
## CountryZAM    23.780     26.518   0.897    0.384
## CountryZIM     8.232     18.751   0.439    0.667
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.382  -15.532   -1.487    7.013   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19.382     10.826   1.790   0.0936 .
## CountryURT    -8.232     18.751  -0.439   0.6669
## CountryUGA   -13.895     15.310  -0.908   0.3785
## CountryKEN    -2.064     13.011  -0.159   0.8761
```

```
## CountryETH    -8.923     24.208  -0.369   0.7176
## CountryZAM    15.548     24.208   0.642   0.5304
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_Tsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -19.382  -15.533   -1.487    7.013   54.298
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    34.93      21.65   1.613    0.128
## CountryZIM    -15.55      24.21  -0.642    0.530
## CountryURT    -23.78      26.52  -0.897    0.384
## CountryUGA    -29.44      24.21  -1.216    0.243
## CountryKEN    -17.61      22.82  -0.772    0.452
## CountryETH    -24.47      30.62  -0.799    0.437
##
## (Dispersion parameter for gaussian family taken to be 468.8051)
##
##     Null deviance: 7963.6  on 20  degrees of freedom
## Residual deviance: 7032.1  on 15  degrees of freedom
## AIC: 195.68
##
## Number of Fisher Scoring iterations: 2
```

```
##TZ
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0900     2.0394   0.534    0.601
## CountryZAM   -0.4100     2.8842  -0.142    0.889
## CountryZIM    0.8325     2.2801   0.365    0.720
## CountryURT   -0.7500     2.4978  -0.300    0.768
## CountryUGA   -0.0900     2.2801  -0.039    0.969
## CountryKEN   -0.5233     2.1497  -0.243    0.811
##
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5667     0.6798   0.834    0.418
## CountryETH    0.5233     2.1497   0.243    0.811
## CountryZAM    0.1133     2.1497   0.053    0.959
## CountryZIM    1.3558     1.2255   1.106    0.286
## CountryURT   -0.2267     1.5943  -0.142    0.889
## CountryUGA    0.4333     1.2255   0.354    0.729
##
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0000     1.0197   0.981    0.342
## CountryKEN   -0.4333     1.2255  -0.354    0.729
## CountryETH    0.0900     2.2801   0.039    0.969
## CountryZAM   -0.3200     2.2801  -0.140    0.890
## CountryZIM    0.9225     1.4421   0.640    0.532
## CountryURT   -0.6600     1.7662  -0.374    0.714
##
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3400     1.4421   0.236    0.817
## CountryUGA    0.6600     1.7662   0.374    0.714
## CountryKEN    0.2267     1.5943   0.142    0.889
## CountryETH    0.7500     2.4978   0.300    0.768
## CountryZAM    0.3400     2.4978   0.136    0.894
## CountryZIM    1.5825     1.7662   0.896    0.384
##
```

```
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.9225     1.0197   1.885   0.0789 .
## CountryURT   -1.5825     1.7662  -0.896   0.3844
## CountryUGA   -0.9225     1.4421  -0.640   0.5320
## CountryKEN   -1.3558     1.2255  -1.106   0.2860
## CountryETH   -0.8325     2.2801  -0.365   0.7201
## CountryZAM   -1.2425     2.2801  -0.545   0.5938
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_Tz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9225  -1.0000  -0.5667   0.3400   5.7675
##
```

```
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6800     2.0394   0.333    0.743
## CountryZIM    1.2425     2.2801   0.545    0.594
## CountryURT   -0.3400     2.4978  -0.136    0.894
## CountryUGA    0.3200     2.2801   0.140    0.890
## CountryKEN   -0.1133     2.1497  -0.053    0.959
## CountryETH    0.4100     2.8842   0.142    0.889
##
## (Dispersion parameter for gaussian family taken to be 4.159192)
##
##     Null deviance: 68.316  on 20  degrees of freedom
## Residual deviance: 62.388  on 15  degrees of freedom
## AIC: 96.461
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTv
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  7.336e-15  2.616e+00   0.000    1.000
## CountryZAM  -3.870e-15  3.700e+00   0.000    1.000
## CountryZIM  -7.218e-15  2.925e+00   0.000    1.000
## CountryURT  -8.330e-15  3.204e+00   0.000    1.000
## CountryUGA  -6.831e-15  2.925e+00   0.000    1.000
## CountryKEN   2.291e+00  2.758e+00   0.831    0.419
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.291      0.872   2.627    0.019 *
## CountryETH    -2.291      2.758  -0.831    0.419
## CountryZAM    -2.291      2.758  -0.831    0.419
## CountryZIM    -2.291      1.572  -1.457    0.166
## CountryURT    -2.291      2.045  -1.120    0.280
## CountryUGA    -2.291      1.572  -1.457    0.166
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.814e-16  1.308e+00   0.000    1.000
## CountryKEN   2.291e+00  1.572e+00   1.457    0.166
## CountryETH   2.561e-15  2.925e+00   0.000    1.000
## CountryZAM   9.177e-16  2.925e+00   0.000    1.000
## CountryZIM   9.428e-16  1.850e+00   0.000    1.000
## CountryURT   1.538e-15  2.266e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
```

```
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.816e-16  1.850e+00    0.00     1.00
## CountryUGA   4.936e-16  2.266e+00    0.00     1.00
## CountryKEN   2.291e+00  2.045e+00    1.12     0.28
## CountryETH  -1.637e-15  3.204e+00    0.00     1.00
## CountryZAM  -6.595e-16  3.204e+00    0.00     1.00
## CountryZIM   0.000e+00  2.266e+00    0.00     1.00
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.209e-16  1.308e+00   0.000    1.000
## CountryURT   4.839e-15  2.266e+00   0.000    1.000
```

```
## CountryUGA   2.499e-16  1.850e+00   0.000    1.000
## CountryKEN   2.291e+00  1.572e+00   1.457    0.166
## CountryETH   1.271e-15  2.925e+00   0.000    1.000
## CountryZAM   1.490e-15  2.925e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TcTv) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.291  -1.041   0.000   0.000   7.709
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -6.789e-16  2.616e+00   0.000    1.000
## CountryZIM   6.909e-16  2.925e+00   0.000    1.000
## CountryURT   6.397e-16  3.204e+00   0.000    1.000
## CountryUGA   5.186e-16  2.925e+00   0.000    1.000
## CountryKEN   2.291e+00  2.758e+00   0.831    0.419
## CountryETH   1.256e-15  3.700e+00   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 6.843899)
##
##     Null deviance: 129.65  on 20  degrees of freedom
## Residual deviance: 102.66  on 15  degrees of freedom
## AIC: 106.92
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTZ
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.041e-15  4.589e-01   0.000    1.000
## CountryZAM  -1.807e-15  6.490e-01   0.000    1.000
## CountryZIM  -1.071e-15  5.131e-01   0.000    1.000
## CountryURT   7.050e-01  5.620e-01   1.254    0.229
## CountryUGA  -1.084e-15  5.131e-01   0.000    1.000
## CountryKEN   2.278e-01  4.837e-01   0.471    0.644
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.2278     0.1530   1.489    0.157
## CountryETH   -0.2278     0.4837  -0.471    0.644
## CountryZAM   -0.2278     0.4837  -0.471    0.644
## CountryZIM   -0.2278     0.2758  -0.826    0.422
## CountryURT    0.4772     0.3587   1.330    0.203
## CountryUGA   -0.2278     0.2758  -0.826    0.422
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.268e-17  2.294e-01   0.000   1.0000
## CountryKEN   2.278e-01  2.758e-01   0.826   0.4218
## CountryETH   4.068e-17  5.131e-01   0.000   1.0000
## CountryZAM  -1.478e-17  5.131e-01   0.000   1.0000
## CountryZIM   3.583e-17  3.245e-01   0.000   1.0000
## CountryURT   7.050e-01  3.974e-01   1.774   0.0964 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.7050     0.3245   2.173   0.0462 *
## CountryUGA   -0.7050     0.3974  -1.774   0.0964 .
## CountryKEN   -0.4772     0.3587  -1.330   0.2033
## CountryETH   -0.7050     0.5620  -1.254   0.2289
## CountryZAM   -0.7050     0.5620  -1.254   0.2289
```

```
## CountryZIM   -0.7050     0.3974  -1.774   0.0964 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.938e-16  2.294e-01   0.000   1.0000
## CountryURT   7.050e-01  3.974e-01   1.774   0.0964 .
## CountryUGA   3.280e-16  3.245e-01   0.000   1.0000
## CountryKEN   2.278e-01  2.758e-01   0.826   0.4218
## CountryETH   5.113e-16  5.131e-01   0.000   1.0000
## CountryZAM   1.241e-16  5.131e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TcTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gp)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.2278   0.0000   0.0000   1.3122
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.346e-17  4.589e-01   0.000    1.000
## CountryZIM  -3.856e-16  5.131e-01   0.000    1.000
## CountryURT   7.050e-01  5.620e-01   1.254    0.229
## CountryUGA   3.241e-17  5.131e-01   0.000    1.000
## CountryKEN   2.278e-01  4.837e-01   0.471    0.644
## CountryETH   0.000e+00  6.490e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.210587)
##
##     Null deviance: 4.0497  on 20  degrees of freedom
## Residual deviance: 3.1588  on 15  degrees of freedom
## AIC: 33.815
##
## Number of Fisher Scoring iterations: 2

##TvTZ
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.463e-15  3.594e-01   0.000    1.000
## CountryZAM  -1.402e-16  5.082e-01   0.000    1.000
## CountryZIM  -1.412e-15  4.018e-01   0.000    1.000
## CountryURT   7.050e-01  4.401e-01   1.602    0.130
## CountryUGA  -1.396e-15  4.018e-01   0.000    1.000
## CountryKEN   1.144e-01  3.788e-01   0.302    0.767
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1144     0.1198   0.955   0.3545
## CountryETH   -0.1144     0.3788  -0.302   0.7667
## CountryZAM   -0.1144     0.3788  -0.302   0.7667
## CountryZIM   -0.1144     0.2159  -0.530   0.6039
## CountryURT    0.5906     0.2809   2.102   0.0528 .
## CountryUGA   -0.1144     0.2159  -0.530   0.6039
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.696e-16  1.797e-01   0.000   1.0000
## CountryKEN  1.144e-01  2.159e-01   0.530   0.6039
## CountryETH  4.315e-16  4.018e-01   0.000   1.0000
## CountryZAM  2.822e-17  4.018e-01   0.000   1.0000
## CountryZIM  1.433e-16  2.541e-01   0.000   1.0000
```

```
## CountryURT  7.050e-01  3.112e-01   2.265   0.0387 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.7050     0.2541   2.774   0.0142 *
## CountryUGA   -0.7050     0.3112  -2.265   0.0387 *
## CountryKEN   -0.5906     0.2809  -2.102   0.0528 .
## CountryETH   -0.7050     0.4401  -1.602   0.1300
## CountryZAM   -0.7050     0.4401  -1.602   0.1300
## CountryZIM   -0.7050     0.3112  -2.265   0.0387 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.268e-17  1.797e-01   0.000   1.0000
## CountryURT   7.050e-01  3.112e-01   2.265   0.0387 *
## CountryUGA   1.249e-16  2.541e-01   0.000   1.0000
## CountryKEN   1.144e-01  2.159e-01   0.530   0.6039
## CountryETH   3.537e-16  4.018e-01   0.000   1.0000
## CountryZAM   2.482e-16  4.018e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TvTz) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.7050  -0.1144   0.0000   0.0000   0.9156
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.205e-16  3.594e-01   0.000    1.000
## CountryZIM   6.324e-16  4.018e-01   0.000    1.000
## CountryURT   7.050e-01  4.401e-01   1.602    0.130
## CountryUGA   4.862e-17  4.018e-01   0.000    1.000
## CountryKEN   1.144e-01  3.788e-01   0.302    0.767
## CountryETH   4.710e-16  5.082e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.1291381)
##
##     Null deviance: 2.7655  on 20  degrees of freedom
## Residual deviance: 1.9371  on 15  degrees of freedom
## AIC: 23.545
```

```
##
## Number of Fisher Scoring iterations: 2

##TcTsg
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.650      6.511   0.100    0.922
## CountryZAM     6.880      9.207   0.747    0.466
## CountryZIM     1.627      7.279   0.224    0.826
## CountryURT    10.255      7.974   1.286    0.218
## CountryUGA    -0.650      7.279  -0.089    0.930
## CountryKEN     5.201      6.863   0.758    0.460
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
##
## Number of Fisher Scoring iterations: 2

data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.851      2.170   2.696   0.0166 *
## CountryETH    -5.201      6.863  -0.758   0.4603
## CountryZAM     1.679      6.863   0.245   0.8101
## CountryZIM    -3.574      3.912  -0.913   0.3755
```

```
## CountryURT     5.054      5.090   0.993   0.3365
## CountryUGA    -5.851      3.912  -1.496   0.1555
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 5.427e-15  3.255e+00   0.000   1.0000
## CountryKEN  5.851e+00  3.912e+00   1.496   0.1555
## CountryETH  6.500e-01  7.279e+00   0.089   0.9300
## CountryZAM  7.530e+00  7.279e+00   1.034   0.3173
## CountryZIM  2.277e+00  4.604e+00   0.495   0.6280
## CountryURT  1.090e+01  5.638e+00   1.934   0.0722 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.905      4.604   2.369   0.0317 *
## CountryUGA   -10.905      5.638  -1.934   0.0722 .
## CountryKEN    -5.054      5.090  -0.993   0.3365
## CountryETH   -10.255      7.974  -1.286   0.2179
## CountryZAM    -3.375      7.974  -0.423   0.6781
## CountryZIM    -8.627      5.638  -1.530   0.1468
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.277      3.255   0.700    0.495
## CountryURT     8.627      5.638   1.530    0.147
## CountryUGA    -2.277      4.604  -0.495    0.628
## CountryKEN     3.574      3.912   0.913    0.375
## CountryETH    -1.627      7.279  -0.224    0.826
## CountryZAM     5.253      7.279   0.722    0.482
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
```

```
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -10.225   -5.341    0.000    2.982   10.225
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    7.530      6.511   1.157    0.266
## CountryZIM    -5.253      7.279  -0.722    0.482
## CountryURT     3.375      7.974   0.423    0.678
## CountryUGA    -7.530      7.279  -1.034    0.317
## CountryKEN    -1.679      6.863  -0.245    0.810
## CountryETH    -6.880      9.208  -0.747    0.466
##
## (Dispersion parameter for gaussian family taken to be 42.38917)
##
##     Null deviance: 858.72  on 20  degrees of freedom
## Residual deviance: 635.84  on 15  degrees of freedom
## AIC: 145.21
##
## Number of Fisher Scoring iterations: 2
```

```
##TvTsg
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.4400     0.3286   1.339    0.201
## CountryZAM   -0.4400     0.4648  -0.947    0.359
## CountryZIM   -0.4400     0.3674  -1.197    0.250
## CountryURT   -0.1000     0.4025  -0.248    0.807
```

```
## CountryUGA   -0.4400     0.3674  -1.197    0.250
## CountryKEN   -0.3011     0.3464  -0.869    0.398
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1389     0.1095   1.268    0.224
## CountryETH    0.3011     0.3464   0.869    0.398
## CountryZAM   -0.1389     0.3464  -0.401    0.694
## CountryZIM   -0.1389     0.1975  -0.703    0.493
## CountryURT    0.2011     0.2569   0.783    0.446
## CountryUGA   -0.1389     0.1975  -0.703    0.493
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.057e-17  1.643e-01   0.000    1.000
## CountryKEN   1.389e-01  1.975e-01   0.703    0.493
## CountryETH   4.400e-01  3.674e-01   1.197    0.250
## CountryZAM  -1.527e-16  3.674e-01   0.000    1.000
## CountryZIM  -1.792e-17  2.324e-01   0.000    1.000
## CountryURT   3.400e-01  2.846e-01   1.195    0.251
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3400     0.2324   1.463    0.164
## CountryUGA   -0.3400     0.2846  -1.195    0.251
## CountryKEN   -0.2011     0.2569  -0.783    0.446
## CountryETH    0.1000     0.4025   0.248    0.807
## CountryZAM   -0.3400     0.4025  -0.845    0.412
## CountryZIM   -0.3400     0.2846  -1.195    0.251
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.451e-17  1.643e-01   0.000    1.000
## CountryURT   3.400e-01  2.846e-01   1.195    0.251
## CountryUGA   1.562e-17  2.324e-01   0.000    1.000
## CountryKEN   1.389e-01  1.975e-01   0.703    0.493
## CountryETH   4.400e-01  3.674e-01   1.197    0.250
## CountryZAM  -1.241e-16  3.674e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3400  -0.1389   0.0000   0.0000   1.1111
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 9.176e-18  3.286e-01   0.000    1.000
## CountryZIM  1.542e-17  3.674e-01   0.000    1.000
## CountryURT  3.400e-01  4.025e-01   0.845    0.412
## CountryUGA  3.241e-17  3.674e-01   0.000    1.000
## CountryKEN  1.389e-01  3.464e-01   0.401    0.694
## CountryETH  4.400e-01  4.648e-01   0.947    0.359
##
## (Dispersion parameter for gaussian family taken to be 0.1080059)
##
##     Null deviance: 1.9510  on 20  degrees of freedom
## Residual deviance: 1.6201  on 15  degrees of freedom
```

```
## AIC: 19.793
##
## Number of Fisher Scoring iterations: 2

##TzTsg
data_gp$Country <- relevel(data_gp$Country, ref= "ETH")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6500     0.5927   1.097    0.290
## CountryZAM   -0.6500     0.8383  -0.775    0.450
## CountryZIM   -0.6500     0.6627  -0.981    0.342
## CountryURT    0.3950     0.7260   0.544    0.594
## CountryUGA   -0.6500     0.6627  -0.981    0.342
## CountryKEN   -0.2833     0.6248  -0.453    0.657
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2702  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2

data_gp$Country <- relevel(data_gp$Country, ref= "KEN")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3667     0.1976   1.856   0.0832 .
## CountryETH    0.2833     0.6248   0.453   0.6567
## CountryZAM   -0.3667     0.6248  -0.587   0.5660
```

```
## CountryZIM   -0.3667     0.3562  -1.029   0.3196
## CountryURT    0.6783     0.4634   1.464   0.1639
## CountryUGA   -0.3667     0.3562  -1.029   0.3196
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2702  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "UGA")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.423e-17  2.964e-01   0.000   1.0000
## CountryKEN   3.667e-01  3.562e-01   1.029   0.3196
## CountryETH   6.500e-01  6.627e-01   0.981   0.3422
## CountryZAM  -1.751e-16  6.627e-01   0.000   1.0000
## CountryZIM   7.166e-17  4.191e-01   0.000   1.0000
## CountryURT   1.045e+00  5.133e-01   2.036   0.0598 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2702  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "URT")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.0450     0.4191   2.493   0.0248 *
## CountryUGA   -1.0450     0.5133  -2.036   0.0598 .
## CountryKEN   -0.6783     0.4634  -1.464   0.1639
## CountryETH   -0.3950     0.7260  -0.544   0.5944
## CountryZAM   -1.0450     0.7260  -1.439   0.1706
## CountryZIM   -1.0450     0.5133  -2.036   0.0598 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2703  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZIM")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.059e-16  2.964e-01   0.000   1.0000
## CountryURT   1.045e+00  5.133e-01   2.036   0.0598 .
## CountryUGA   5.935e-16  4.191e-01   0.000   1.0000
## CountryKEN   3.667e-01  3.562e-01   1.029   0.3196
## CountryETH   6.500e-01  6.627e-01   0.981   0.3422
## CountryZAM  -1.241e-16  6.627e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
```

```
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2702  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2
```

```
data_gp$Country <- relevel(data_gp$Country, ref= "ZAM")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gp, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3667  -0.3667   0.0000   0.0000   1.9033
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -3.616e-16  5.927e-01   0.000    1.000
## CountryZIM   3.085e-16  6.627e-01   0.000    1.000
## CountryURT   1.045e+00  7.260e-01   1.439    0.171
## CountryUGA   3.241e-16  6.627e-01   0.000    1.000
## CountryKEN   3.667e-01  6.248e-01   0.587    0.566
## CountryETH   6.500e-01  8.383e-01   0.775    0.450
##
## (Dispersion parameter for gaussian family taken to be 0.35135)
##
##     Null deviance: 7.3496  on 20  degrees of freedom
## Residual deviance: 5.2702  on 15  degrees of freedom
## AIC: 44.564
##
## Number of Fisher Scoring iterations: 2
```

```
#-----------------------------------------------------------------------
###For Gpg
data_gpg <- subset(data, Species=="Gpg")
data_gpg
```

```
##     Country    Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc
## 4       SEN            Pout     Gpg  NI      4     0.00      7.04    1.51
## 12      BKF         Folonzo     Gpg   F     12     0.00      7.55    0.94
## 13      BKF         Folonzo     Gpg   M     13     1.89     16.04    0.00
## 15      GUI       Kangoliya     Gpg   F     15    95.74      0.00    0.00
## 18      SEN           Kayar     Gpg  NI     18     0.00      1.14    0.00
## 25      BKF    Moussodougou     Gpg   F     25     0.00     44.87    0.00
## 30      BKF           Comoe     Gpg   F     30     0.00      2.82    1.41
## 32      BKF        Kartasso     Gpg   F     32     0.00      0.00    0.00
## 33      BKF        Kartasso     Gpg   M     33     0.00      0.00    0.00
## 34      SEN DiackSAFo Peulh     Gpg  NI     34     0.00      7.69    0.00
```

```
## 35      BKF    Moussodougou     Gpg   M     35     0.00     21.88    0.00
## 40      MLI            Bani     Gpg   F     40     0.00      1.72    0.00
## 45      BKF          Kampty     Gpg   F     45     0.00     90.57    1.89
## 47      BKF           Comoe     Gpg   M     47     0.00      1.92    1.92
## 48      MLI             SEN     Gpg   M     48     0.00      7.69    1.92
## 54      BKF            Bama     Gpg   F     54     0.00      0.00    0.00
## 56      SEN     Tambacounda     Gpg   F     56     0.00     41.46    0.00
## 57      SEN     Tambacounda     Gpg   M     57     0.00     71.79    0.00
## 58      SEN      SebikoURTe     Gpg  NI     58     0.00      5.13    0.00
## 62      MLI             SEN     Gpg   F     62     0.00      0.00    0.00
## 64      BKF            Bama     Gpg   M     64     0.00      0.00    0.00
## 65      MLI           Banco     Gpg   F     65     0.00     20.59    0.00
## 66      BKF        Dedougou     Gpg   F     66     0.00     52.94    0.00
## 67      MLI         Sikasso     Gpg   F     67     0.00      6.06    0.00
## 71      GUI       Kangoliya     Gpg   M     71     0.00      0.00    0.00
## 77      GUI            Mini     Gpg   F     77     0.00      3.45    0.00
## 78      SEN            Hann     Gpg  NI     78     0.00      0.00    0.00
## 80      BKF          Kampty     Gpg   M     80     0.00     80.77    0.00
## 82      GUI          Kifala     Gpg   M     82     0.00      0.00    0.00
## 83      MLI         Sikasso     Gpg   M     83     0.00      0.00    0.00
## 84      MLI              SS     Gpg   F     84     0.00      4.00    0.00
## 86      BKF      Kenedougou     Gpg   F     86     0.00      0.00    0.00
## 87      MLI              SS     Gpg   M     87     0.00      0.00    0.00
## 88      BKF        Dedougou     Gpg   M     88     0.00     69.57    4.35
## 89      GUI          Bafing     Gpg   F     89     0.00      5.00    0.00
## 91      BKF          Kampty     Gpg  NI     91     0.00     84.21    0.00
## 92      GUI        Tinkisso     Gpg   M     92     0.00      5.56    0.00
## 94      BKF      Kenedougou     Gpg   M     94     0.00      0.00    0.00
## 96      GUI       Dekonkore     Gpg   F     96     0.00      6.25    0.00
## 97      GUI            Mini     Gpg   M     97     0.00      0.00    0.00
## 98      SEN   Fleuve Gambie     Gpg   M     98     0.00     43.75    0.00
## 102     GUI          Bafing     Gpg   M    102     0.00      0.00    0.00
## 103     GUI        Tinkisso     Gpg   F    103     0.00      7.69    0.00
## 104     BKF Bouroum bouroum     Gpg   F    104     0.00     92.31    0.00
## 106     GUI        Karifale     Gpg   M    106     0.00      8.33    0.00
## 107     GUI        Lemonako     Gpg   F    107     0.00      0.00    0.00
## 108     BKF      KouriGUIon     Gpg   F    108     0.00     50.00    0.00
## 109     MLI            Bani     Gpg   M    109     0.00      0.00    0.00
## 110     MLI            Sybi     Gpg   F    110     0.00      0.00    0.00
## 111     MLI            Sybi     Gpg   M    111     0.00      0.00    0.00
## 113     SEN       Fleueve G     Gpg   F    113     0.00     11.11    0.00
## 114     BKF      KouriGUIon     Gpg  NI    114     0.00     22.22    0.00
## 117     GUI        Lemonako     Gpg   M    117     0.00      0.00    0.00
## 119     SEN        Diaguiri     Gpg   F    119     0.00      0.00    0.00
## 120     MLI           Banco     Gpg   M    120     0.00     28.57    0.00
## 121     MLI          Baoule     Gpg   F    121     0.00     42.86    0.00
## 122     MLI          Baoule     Gpg   M    122     0.00     42.86    0.00
## 123     MLI        Bougouni     Gpg   M    123     0.00      0.00    0.00
## 124     BKF        Lorepeni     Gpg   F    124     0.00     71.43    0.00
## 127     SEN      MousSAFlla     Gpg   M    127     0.00      0.00    0.00
```

```
## 128     MLI       Baguineda     Gpg   F    128     0.00     16.67    0.00
## 129     MLI        Bougouni     Gpg   F    129     0.00      0.00    0.00
## 130     MLI            Kita     Gpg   M    130     0.00     16.67    0.00
## 136     GUI          Kifala     Gpg   F    136     0.00      0.00    0.00
## 137     BKF Bouroum bouroum     Gpg   M    137     0.00     80.00    0.00
## 138     SEN   Fleuve Gambie     Gpg   F    138     0.00     25.00    0.00
## 143     SEN         Niokolo     Gpg   M    143     0.00      0.00    0.00
## 145     BKF        Lorepeni     Gpg   M    145     0.00    100.00    0.00
## 146     BKF      KouriGUIon     Gpg   M    146     0.00     66.67    0.00
## 147     BKF        Ouarkoye     Gpg   M    147     0.00    100.00    0.00
## 150     SEN        Diaguiri     Gpg   M    150     0.00     50.00    0.00
## 151     BKF        Ouarkoye     Gpg   F    151     0.00    100.00   50.00
## 156     GUI        Karifale     Gpg   F    156     0.00      0.00    0.00
## 157     SEN            Mako     Gpg   M    157     0.00    100.00    0.00
##     Prev_Tv Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz
## 4      2.01    0.50     3.02         0      0.00       0.00      0.00
## 12     2.83    1.89     0.00         0      0.00       0.00      1.89
## 13     5.66    5.66     0.00         0      1.89       0.00      2.83
## 15     0.00    0.00     0.00         0      0.00       0.00      0.00
## 18     0.00    0.00     1.14         0      0.00       0.00      0.00
## 25    20.51   12.82     0.00         0      0.00       0.00     11.54
## 30     1.41    0.00     0.00         0      0.00       0.00      0.00
## 32     0.00    0.00     0.00         0      0.00       0.00      0.00
## 33     0.00    0.00     0.00         0      0.00       0.00      0.00
## 34     1.54    1.54     4.62         0      0.00       0.00      0.00
## 35     6.25   15.63     0.00         0      0.00       0.00      0.00
## 40     1.72    0.00     0.00         0      0.00       0.00      0.00
## 45    62.26    1.89    11.32         0      0.00       0.00      0.00
## 47     0.00    0.00     0.00         0      0.00       0.00      0.00
## 48     1.92    3.85     0.00         0      0.00       0.00      0.00
## 54     0.00    0.00     0.00         0      0.00       0.00      0.00
## 56    26.83    7.32     0.00         0      0.00       0.00      7.32
## 57    53.85    2.56     0.00         0      0.00       0.00     15.38
## 58     5.13    0.00     0.00         0      0.00       0.00      0.00
## 62     0.00    0.00     0.00         0      0.00       0.00      0.00
## 64     0.00    0.00     0.00         0      0.00       0.00      0.00
## 65    20.59    0.00     0.00         0      0.00       0.00      0.00
## 66    26.47    0.00    23.53         0      0.00       0.00      0.00
## 67     0.00    6.06     0.00         0      0.00       0.00      0.00
## 71     0.00    0.00     0.00         0      0.00       0.00      0.00
## 77     3.45    0.00     0.00         0      0.00       0.00      0.00
## 78     0.00    0.00     0.00         0      0.00       0.00      0.00
## 80    65.38    0.00     7.69         0      0.00       0.00      0.00
## 82     0.00    0.00     0.00         0      0.00       0.00      0.00
## 83     0.00    0.00     0.00         0      0.00       0.00      0.00
## 84     4.00    0.00     0.00         0      0.00       0.00      0.00
## 86     0.00    0.00     0.00         0      0.00       0.00      0.00
## 87     0.00    0.00     0.00         0      0.00       0.00      0.00
## 88    30.43   13.04     4.35         0      0.00       4.35      0.00
## 89     5.00    0.00     0.00         0      0.00       0.00      0.00
```

```
## 91    26.32    5.26    21.05          0      0.00       0.00       0.00
## 92     5.56    0.00     0.00          0      0.00       0.00       0.00
## 94     0.00    0.00     0.00          0      0.00       0.00       0.00
## 96     6.25    0.00     0.00          0      0.00       0.00       0.00
## 97     0.00    0.00     0.00          0      0.00       0.00       0.00
## 98    43.75    0.00     0.00          0      0.00       0.00       0.00
## 102    0.00    0.00     0.00          0      0.00       0.00       0.00
## 103    7.69    0.00     0.00          0      0.00       0.00       0.00
## 104   53.85    0.00    23.08          0      0.00       0.00       0.00
## 106    8.33    0.00     0.00          0      0.00       0.00       0.00
## 107    8.33    0.00     0.00          0      0.00       0.00       0.00
## 108    0.00    0.00    33.33          0      0.00       0.00       0.00
## 109    0.00    0.00     0.00          0      0.00       0.00       0.00
## 110    0.00    0.00     0.00          0      0.00       0.00       0.00
## 111    0.00    0.00     0.00          0      0.00       0.00       0.00
## 113   11.11    0.00     0.00          0      0.00       0.00       0.00
## 114    0.00    0.00    11.11          0      0.00       0.00       0.00
## 117    0.00    0.00     0.00          0      0.00       0.00       0.00
## 119    0.00    0.00     0.00          0      0.00       0.00       0.00
## 120   28.57    0.00     0.00          0      0.00       0.00       0.00
## 121   42.86    0.00     0.00          0      0.00       0.00       0.00
## 122   42.86    0.00     0.00          0      0.00       0.00       0.00
## 123    0.00    0.00     0.00          0      0.00       0.00       0.00
## 124   14.29    0.00    28.57          0      0.00       0.00       0.00
## 127    0.00    0.00     0.00          0      0.00       0.00       0.00
## 128   16.67    0.00     0.00          0      0.00       0.00       0.00
## 129    0.00    0.00     0.00          0      0.00       0.00       0.00
## 130   16.67    0.00     0.00          0      0.00       0.00       0.00
## 136    0.00    0.00     0.00          0      0.00       0.00       0.00
## 137   40.00    0.00    20.00          0      0.00       0.00       0.00
## 138   25.00    0.00     0.00          0      0.00       0.00       0.00
## 143   66.67    0.00     0.00          0      0.00       0.00       0.00
## 145    0.00    0.00     0.00          0      0.00       0.00       0.00
## 146   33.33    0.00     0.00          0      0.00       0.00       0.00
## 147   33.33    0.00     0.00          0      0.00       0.00       0.00
## 150    0.00   50.00     0.00          0      0.00       0.00       0.00
## 151   50.00    0.00     0.00          0      0.00       0.00       0.00
## 156    0.00    0.00     0.00          0      0.00       0.00       0.00
## 157  100.00    0.00     0.00          0      0.00       0.00       0.00
##     Prev_TvTsg Prev_TzTsg Prev_TcTvTz
## 4         0.00       0.00           0
## 12        0.00       0.00           0
## 13        0.00       0.00           0
## 15        0.00       0.00           0
## 18        0.00       0.00           0
## 25        0.00       0.00           0
## 30        0.00       0.00           0
## 32        0.00       0.00           0
## 33        0.00       0.00           0
## 34        0.00       0.00           0
```

```
## 35        0.00       0.00           0
## 40        0.00       0.00           0
## 45        9.43       3.77           0
## 47        0.00       0.00           0
## 48        0.00       0.00           0
## 54        0.00       0.00           0
## 56        0.00       0.00           0
## 57        0.00       0.00           0
## 58        0.00       0.00           0
## 62        0.00       0.00           0
## 64        0.00       0.00           0
## 65        0.00       0.00           0
## 66        2.94       0.00           0
## 67        0.00       0.00           0
## 71        0.00       0.00           0
## 77        0.00       0.00           0
## 78        0.00       0.00           0
## 80        7.69       0.00           0
## 82        0.00       0.00           0
## 83        0.00       0.00           0
## 84        0.00       0.00           0
## 86        0.00       0.00           0
## 87        0.00       0.00           0
## 88        4.35       8.70           0
## 89        0.00       0.00           0
## 91       31.58       0.00           0
## 92        0.00       0.00           0
## 94        0.00       0.00           0
## 96        0.00       0.00           0
## 97        0.00       0.00           0
## 98        0.00       0.00           0
## 102       0.00       0.00           0
## 103       0.00       0.00           0
## 104      15.38       0.00           0
## 106       0.00       0.00           0
## 107       0.00       0.00           0
## 108      16.67       0.00           0
## 109       0.00       0.00           0
## 110       0.00       0.00           0
## 111       0.00       0.00           0
## 113       0.00       0.00           0
## 114      11.11       0.00           0
## 117       0.00       0.00           0
## 119       0.00       0.00           0
## 120       0.00       0.00           0
## 121       0.00       0.00           0
## 122       0.00       0.00           0
## 123       0.00       0.00           0
## 124      28.57       0.00           0
## 127       0.00       0.00           0
```

```
## 128       0.00       0.00           0
## 129       0.00       0.00           0
## 130       0.00       0.00           0
## 136       0.00       0.00           0
## 137      20.00       0.00           0
## 138       0.00       0.00           0
## 143       0.00       0.00           0
## 145      66.67      33.33           0
## 146      33.33       0.00           0
## 147      33.33      33.33           0
## 150       0.00       0.00           0
## 151       0.00       0.00           0
## 156       0.00       0.00           0
## 157       0.00       0.00           0
```

```
##Tc
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_Tc) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.327  -2.327  -0.107  -0.025  47.673
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.327      1.147   2.029   0.0462 *
## CountrySEN    -2.227      1.896  -1.174   0.2442
## CountryMLI    -2.221      1.793  -1.238   0.2197
## CountryGUI    -2.327      1.896  -1.227   0.2238
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 34.19767)
##
##     Null deviance: 2479.8  on 73  degrees of freedom
## Residual deviance: 2393.8  on 70  degrees of freedom
## AIC: 477.27
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_Tc) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.327  -2.327  -0.107  -0.025  47.673
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.136e-15  1.510e+00   0.000    1.000
## CountryBKF  2.327e+00  1.896e+00   1.227    0.224
## CountrySEN  1.007e-01  2.135e+00   0.047    0.963
## CountryMLI  1.067e-01  2.044e+00   0.052    0.959
##
## (Dispersion parameter for gaussian family taken to be 34.19767)
##
##     Null deviance: 2479.8  on 73  degrees of freedom
## Residual deviance: 2393.8  on 70  degrees of freedom
## AIC: 477.27
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_Tc) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.327  -2.327  -0.107  -0.025  47.673
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1067     1.3784   0.077    0.939
## CountryGUI   -0.1067     2.0444  -0.052    0.959
## CountryBKF    2.2206     1.7931   1.238    0.220
## CountrySEN   -0.0060     2.0444  -0.003    0.998
##
## (Dispersion parameter for gaussian family taken to be 34.19767)
##
##     Null deviance: 2479.8  on 73  degrees of freedom
## Residual deviance: 2393.8  on 70  degrees of freedom
## AIC: 477.27
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_Tc) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -2.327  -2.327  -0.107  -0.025  47.673
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1007     1.5099   0.067    0.947
## CountryMLI    0.0060     2.0444   0.003    0.998
## CountryGUI   -0.1007     2.1353  -0.047    0.963
## CountryBKF    2.2266     1.8961   1.174    0.244
##
## (Dispersion parameter for gaussian family taken to be 34.19767)
##
##     Null deviance: 2479.8  on 73  degrees of freedom
## Residual deviance: 2393.8  on 70  degrees of freedom
## AIC: 477.27
##
## Number of Fisher Scoring iterations: 2
```

```r
##Tv
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_Tv) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393  -16.401   -2.974    6.900   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18.166      3.992   4.551 2.19e-05 ***
## CountrySEN     4.227      6.600   0.640   0.5240
## CountryMLI    -8.396      6.241  -1.345   0.1829
## CountryGUI   -15.192      6.600  -2.302   0.0243 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 414.3203)
```

```
##
##     Null deviance: 32655  on 73  degrees of freedom
## Residual deviance: 29002  on 70  degrees of freedom
## AIC: 661.86
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_Tv) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393  -16.401   -2.974    6.900   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.974      5.256   0.566   0.5733
## CountryBKF    15.192      6.600   2.302   0.0243 *
## CountrySEN    19.419      7.433   2.613   0.0110 *
## CountryMLI     6.796      7.116   0.955   0.3429
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 414.3203)
##
##     Null deviance: 32655  on 73  degrees of freedom
## Residual deviance: 29002  on 70  degrees of freedom
## AIC: 661.86
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_Tv) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393  -16.401   -2.974    6.900   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9.770      4.798   2.036   0.0455 *
```

```
## CountryGUI    -6.796      7.116  -0.955   0.3429
## CountryBKF     8.396      6.241   1.345   0.1829
## CountrySEN    12.623      7.116   1.774   0.0804 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 414.3203)
##
##     Null deviance: 32655  on 73  degrees of freedom
## Residual deviance: 29002  on 70  degrees of freedom
## AIC: 661.86
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_Tv) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -22.393  -16.401   -2.974    6.900   77.607
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   22.393      5.256   4.261 6.24e-05 ***
## CountryMLI   -12.623      7.116  -1.774   0.0804 .
## CountryGUI   -19.419      7.433  -2.613   0.0110 *
## CountryBKF    -4.227      6.600  -0.640   0.5240
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 414.3203)
##
##     Null deviance: 32655  on 73  degrees of freedom
## Residual deviance: 29002  on 70  degrees of freedom
## AIC: 661.86
##
## Number of Fisher Scoring iterations: 2
```

```
##Tsg
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_Tsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gpg)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -7.0781  -0.5853   0.0000   0.0000  26.2519
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    7.078      1.265   5.597 3.96e-07 ***
## CountrySEN    -6.493      2.091  -3.106 0.002741 **
## CountryMLI    -7.078      1.977  -3.580 0.000629 ***
## CountryGUI    -7.078      2.091  -3.386 0.001168 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.57519)
##
##     Null deviance: 3715.6  on 73  degrees of freedom
## Residual deviance: 2910.3  on 70  degrees of freedom
## AIC: 491.73
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_Tsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -7.0781  -0.5853   0.0000   0.0000  26.2519
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.130e-15  1.665e+00   0.000  1.00000
## CountryBKF   7.078e+00  2.091e+00   3.386  0.00117 **
## CountrySEN   5.853e-01  2.354e+00   0.249  0.80439
## CountryMLI  -2.100e-15  2.254e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.57519)
##
##     Null deviance: 3715.6  on 73  degrees of freedom
## Residual deviance: 2910.3  on 70  degrees of freedom
## AIC: 491.73
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_Tsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -7.0781  -0.5853   0.0000   0.0000  26.2519
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.864e-15  1.520e+00    0.00 1.000000
## CountryGUI  -3.082e-15  2.254e+00    0.00 1.000000
## CountryBKF   7.078e+00  1.977e+00    3.58 0.000629 ***
## CountrySEN   5.853e-01  2.254e+00    0.26 0.795885
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.57519)
##
##     Null deviance: 3715.6  on 73  degrees of freedom
## Residual deviance: 2910.3  on 70  degrees of freedom
## AIC: 491.73
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_Tsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -7.0781  -0.5853   0.0000   0.0000  26.2519
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5853     1.6648   0.352  0.72620
## CountryMLI   -0.5853     2.2542  -0.260  0.79589
## CountryGUI   -0.5853     2.3544  -0.249  0.80439
## CountryBKF    6.4927     2.0906   3.106  0.00274 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 41.57519)
##
##     Null deviance: 3715.6  on 73  degrees of freedom
## Residual deviance: 2910.3  on 70  degrees of freedom
## AIC: 491.73
##
## Number of Fisher Scoring iterations: 2

##Tz
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_Tz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -4.128  -2.161  -0.551   0.000  45.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.161      1.257   1.719   0.0901 .
## CountrySEN     1.967      2.079   0.946   0.3473
## CountryMLI    -1.611      1.966  -0.819   0.4154
## CountryGUI    -2.161      2.079  -1.040   0.3021
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.10493)
##
##     Null deviance: 3038.4  on 73  degrees of freedom
## Residual deviance: 2877.3  on 70  degrees of freedom
## AIC: 490.88
##
## Number of Fisher Scoring iterations: 2

data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_Tz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -4.128  -2.161  -0.551   0.000  45.872
##
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.549e-15  1.655e+00   0.000   1.0000
## CountryBKF  2.161e+00  2.079e+00   1.040   0.3021
## CountrySEN  4.128e+00  2.341e+00   1.763   0.0822 .
## CountryMLI  5.506e-01  2.241e+00   0.246   0.8067
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.10493)
##
##     Null deviance: 3038.4  on 73  degrees of freedom
## Residual deviance: 2877.3  on 70  degrees of freedom
## AIC: 490.88
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_Tz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -4.128  -2.161  -0.551   0.000  45.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5506     1.5112   0.364    0.717
## CountryGUI   -0.5506     2.2414  -0.246    0.807
## CountryBKF    1.6106     1.9658   0.819    0.415
## CountrySEN    3.5774     2.2414   1.596    0.115
##
## (Dispersion parameter for gaussian family taken to be 41.10493)
##
##     Null deviance: 3038.4  on 73  degrees of freedom
## Residual deviance: 2877.3  on 70  degrees of freedom
## AIC: 490.88
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_Tz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gpg)
##
```

```
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -4.128  -2.161  -0.551   0.000  45.872
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.128      1.655   2.494   0.0150 *
## CountryMLI    -3.577      2.241  -1.596   0.1150
## CountryGUI    -4.128      2.341  -1.763   0.0822 .
## CountryBKF    -1.967      2.079  -0.946   0.3473
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 41.10493)
##
##     Null deviance: 3038.4  on 73  degrees of freedom
## Residual deviance: 2877.3  on 70  degrees of freedom
## AIC: 490.88
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTz
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_TcTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q       Max
## -0.07269  -0.07269   0.00000   0.00000   1.81731
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.07269    0.04344   1.673   0.0987 .
## CountrySEN  -0.07269    0.07182  -1.012   0.3150
## CountryMLI  -0.07269    0.06792  -1.070   0.2882
## CountryGUI  -0.07269    0.07182  -1.012   0.3150
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.04906731)
##
##     Null deviance: 3.5238  on 73  degrees of freedom
## Residual deviance: 3.4347  on 70  degrees of freedom
## AIC: -7.1869
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_TcTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q       Max
## -0.07269  -0.07269   0.00000   0.00000   1.81731
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.000e-16  5.719e-02   0.000    1.000
## CountryBKF   7.269e-02  7.182e-02   1.012    0.315
## CountrySEN  -1.595e-16  8.088e-02   0.000    1.000
## CountryMLI  -3.881e-17  7.744e-02   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.04906731)
##
##     Null deviance: 3.5238  on 73  degrees of freedom
## Residual deviance: 3.4347  on 70  degrees of freedom
## AIC: -7.1869
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_TcTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q       Max
## -0.07269  -0.07269   0.00000   0.00000   1.81731
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.601e-16  5.221e-02    0.00    1.000
## CountryGUI  -6.140e-16  7.744e-02    0.00    1.000
## CountryBKF   7.269e-02  6.792e-02    1.07    0.288
## CountrySEN   3.251e-16  7.744e-02    0.00    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.04906731)
##
##     Null deviance: 3.5238  on 73  degrees of freedom
## Residual deviance: 3.4347  on 70  degrees of freedom
```

```
## AIC: -7.1869
##
## Number of Fisher Scoring iterations: 2

data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_TcTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q       Max
## -0.07269  -0.07269   0.00000   0.00000   1.81731
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.045e-17  5.719e-02   0.000    1.000
## CountryMLI   5.705e-19  7.744e-02   0.000    1.000
## CountryGUI  -3.769e-16  8.088e-02   0.000    1.000
## CountryBKF   7.269e-02  7.182e-02   1.012    0.315
##
## (Dispersion parameter for gaussian family taken to be 0.04906731)
##
##     Null deviance: 3.5238  on 73  degrees of freedom
## Residual deviance: 3.4347  on 70  degrees of freedom
## AIC: -7.1869
##
## Number of Fisher Scoring iterations: 2

##TcTsg
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.1673  -0.1673   0.0000   0.0000   4.1827
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.16731    0.09999   1.673   0.0987 .
## CountrySEN  -0.16731    0.16530  -1.012   0.3150
## CountryMLI  -0.16731    0.15632  -1.070   0.2882
## CountryGUI  -0.16731    0.16530  -1.012   0.3150
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2599245)
##
##     Null deviance: 18.667  on 73  degrees of freedom
## Residual deviance: 18.195  on 70  degrees of freedom
## AIC: 116.19
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.1673  -0.1673   0.0000   0.0000   4.1827
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.291e-17  1.316e-01   0.000    1.000
## CountryBKF   1.673e-01  1.653e-01   1.012    0.315
## CountrySEN   2.109e-17  1.862e-01   0.000    1.000
## CountryMLI  -5.640e-17  1.782e-01   0.000    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.2599245)
##
##     Null deviance: 18.667  on 73  degrees of freedom
## Residual deviance: 18.195  on 70  degrees of freedom
## AIC: 116.19
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.1673  -0.1673   0.0000   0.0000   4.1827
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.389e-16  1.202e-01    0.00    1.000
## CountryGUI   1.124e-16  1.782e-01    0.00    1.000
## CountryBKF   1.673e-01  1.563e-01    1.07    0.288
## CountrySEN  -4.124e-17  1.782e-01    0.00    1.000
##
## (Dispersion parameter for gaussian family taken to be 0.2599245)
##
##     Null deviance: 18.667  on 73  degrees of freedom
## Residual deviance: 18.195  on 70  degrees of freedom
## AIC: 116.19
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.1673  -0.1673   0.0000   0.0000   4.1827
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.795e-17  1.316e-01   0.000    1.000
## CountryMLI   1.795e-17  1.782e-01   0.000    1.000
## CountryGUI   6.700e-17  1.862e-01   0.000    1.000
## CountryBKF   1.673e-01  1.653e-01   1.012    0.315
##
## (Dispersion parameter for gaussian family taken to be 0.2599245)
##
##     Null deviance: 18.667  on 73  degrees of freedom
## Residual deviance: 18.195  on 70  degrees of freedom
## AIC: 116.19
##
## Number of Fisher Scoring iterations: 2
```

```
##TvTz
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_TvTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.5133  -0.6254   0.0000   0.0000  13.8667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.6254     0.4631   1.350    0.181
## CountrySEN    0.8879     0.7657   1.160    0.250
## CountryMLI   -0.6254     0.7241  -0.864    0.391
## CountryGUI   -0.6254     0.7657  -0.817    0.417
##
## (Dispersion parameter for gaussian family taken to be 5.576543)
##
##     Null deviance: 414.37  on 73  degrees of freedom
## Residual deviance: 390.36  on 70  degrees of freedom
## AIC: 343.06
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_TvTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.5133  -0.6254   0.0000   0.0000  13.8667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.162e-17  6.097e-01   0.000   1.0000
## CountryBKF   6.254e-01  7.657e-01   0.817   0.4168
## CountrySEN   1.513e+00  8.623e-01   1.755   0.0836 .
## CountryMLI   2.329e-16  8.256e-01   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5.576543)
##
##     Null deviance: 414.37  on 73  degrees of freedom
## Residual deviance: 390.36  on 70  degrees of freedom
## AIC: 343.06
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_TvTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.5133  -0.6254   0.0000   0.0000  13.8667
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -4.846e-16  5.566e-01   0.000    1.000
## CountryGUI   3.531e-16  8.256e-01   0.000    1.000
## CountryBKF   6.254e-01  7.241e-01   0.864    0.391
## CountrySEN   1.513e+00  8.256e-01   1.833    0.071 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5.576543)
##
##     Null deviance: 414.37  on 73  degrees of freedom
## Residual deviance: 390.36  on 70  degrees of freedom
## AIC: 343.06
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_TvTz) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gpg)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.5133  -0.6254   0.0000   0.0000  13.8667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.5133     0.6097   2.482   0.0155 *
## CountryMLI   -1.5133     0.8256  -1.833   0.0710 .
## CountryGUI   -1.5133     0.8623  -1.755   0.0836 .
## CountryBKF   -0.8879     0.7657  -1.160   0.2501
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for gaussian family taken to be 5.576543)
##
##     Null deviance: 414.37  on 73  degrees of freedom
## Residual deviance: 390.36  on 70  degrees of freedom
## AIC: 343.06
##
## Number of Fisher Scoring iterations: 2

##TvTsg
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -10.81    0.00    0.00    0.00   55.86
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.810      1.912   5.653 3.18e-07 ***
## CountrySEN   -10.810      3.162  -3.419 0.001052 **
## CountryMLI   -10.810      2.990  -3.615 0.000561 ***
## CountryGUI   -10.810      3.162  -3.419 0.001052 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 95.08083)
##
##     Null deviance: 8626.3  on 73  degrees of freedom
## Residual deviance: 6655.7  on 70  degrees of freedom
## AIC: 552.94
##
## Number of Fisher Scoring iterations: 2

data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -10.81    0.00    0.00    0.00   55.86
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  3.304e-15  2.518e+00   0.000  1.00000
## CountryBKF   1.081e+01  3.162e+00   3.419  0.00105 **
## CountrySEN  -9.607e-15  3.561e+00   0.000  1.00000
## CountryMLI  -3.416e-15  3.409e+00   0.000  1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 95.08083)
##
##     Null deviance: 8626.3  on 73  degrees of freedom
## Residual deviance: 6655.7  on 70  degrees of freedom
## AIC: 552.94
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -10.81    0.00    0.00    0.00   55.86
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.000e+00  2.298e+00   0.000 1.000000
## CountryGUI   0.000e+00  3.409e+00   0.000 1.000000
## CountryBKF   1.081e+01  2.990e+00   3.615 0.000561 ***
## CountrySEN  -2.950e-15  3.409e+00   0.000 1.000000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 95.08083)
##
##     Null deviance: 8626.3  on 73  degrees of freedom
## Residual deviance: 6655.7  on 70  degrees of freedom
## AIC: 552.94
##
## Number of Fisher Scoring iterations: 2
```

```r
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_TvTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TvTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -10.81    0.00    0.00    0.00   55.86
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.141e-15  2.518e+00   0.000  1.00000
## CountryMLI   1.202e-14  3.409e+00   0.000  1.00000
## CountryGUI   5.360e-15  3.561e+00   0.000  1.00000
## CountryBKF   1.081e+01  3.162e+00   3.419  0.00105 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 95.08083)
##
##     Null deviance: 8626.3  on 73  degrees of freedom
## Residual deviance: 6655.7  on 70  degrees of freedom
## AIC: 552.94
##
## Number of Fisher Scoring iterations: 2
```

```r
##TvTsg
data_gpg$Country <- relevel(data_gpg$Country, ref= "BKF")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.043  -3.043   0.000   0.000  30.287
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    3.043      1.067   2.853  0.00569 **
## CountrySEN    -3.043      1.764  -1.726  0.08880 .
## CountryMLI    -3.043      1.668  -1.825  0.07228 .
## CountryGUI    -3.043      1.764  -1.726  0.08880 .
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 29.58359)
##
##     Null deviance: 2227.1  on 73  degrees of freedom
## Residual deviance: 2070.9  on 70  degrees of freedom
## AIC: 466.55
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "GUI")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.043  -3.043   0.000   0.000  30.287
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.445e-15  1.404e+00   0.000   1.0000
## CountryBKF   3.043e+00  1.764e+00   1.726   0.0888 .
## CountrySEN  -3.024e-15  1.986e+00   0.000   1.0000
## CountryMLI  -9.800e-16  1.902e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 29.58359)
##
##     Null deviance: 2227.1  on 73  degrees of freedom
## Residual deviance: 2070.9  on 70  degrees of freedom
## AIC: 466.55
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "MLI")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
```

```
##    Min      1Q  Median      3Q     Max
## -3.043  -3.043   0.000   0.000  30.287
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.586e-16  1.282e+00   0.000   1.0000
## CountryGUI  -2.568e-16  1.902e+00   0.000   1.0000
## CountryBKF   3.043e+00  1.668e+00   1.825   0.0723 .
## CountrySEN  -1.009e-15  1.902e+00   0.000   1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 29.58359)
##
##     Null deviance: 2227.1  on 73  degrees of freedom
## Residual deviance: 2070.9  on 70  degrees of freedom
## AIC: 466.55
##
## Number of Fisher Scoring iterations: 2
```

```
data_gpg$Country <- relevel(data_gpg$Country, ref= "SEN")
model1<-glm((Prev_TzTsg) ~ Country,data=data_gpg, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TzTsg) ~ Country, family = gaussian(), data = data_gpg
)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -3.043  -3.043   0.000   0.000  30.287
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -9.531e-16  1.404e+00   0.000   1.0000
## CountryMLI   1.997e-15  1.902e+00   0.000   1.0000
## CountryGUI   2.680e-16  1.986e+00   0.000   1.0000
## CountryBKF   3.043e+00  1.764e+00   1.726   0.0888 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 29.58359)
##
##     Null deviance: 2227.1  on 73  degrees of freedom
## Residual deviance: 2070.9  on 70  degrees of freedom
## AIC: 466.55
##
## Number of Fisher Scoring iterations: 2
```

```
#-------------------------------------------------------------------------
---
###For Gt
data_gt <- subset(data, Species=="Gt")
data_gt

##     Country  Localisation Species Sex Sample Prev_Sod Prev_Tspp Prev_Tc Pr
ev_Tv
## 2       BKF         Comoe      Gt   F      2        0     16.54    1.10
13.24
## 3       BKF         Comoe      Gt   M      3        0     15.00    3.64
11.36
## 11      BKF       Folonzo      Gt   F     11        0     18.87    1.89
12.26
## 14      BKF       Folonzo      Gt   M     14        0     32.63    2.11
27.37
## 24      GHA      Walewale      Gt   M     24        0     53.85    3.85
12.82
## 43      GHA      Walewale      Gt   F     43        0     66.04    1.89
9.43
## 44      BKF          Arly      Gt   F     44        0      1.89    0.00
0.00
## 55      BKF          Arly      Gt   M     55        0      0.00    0.00
0.00
## 69      GHA       MorURTi      Gt   M     69        0     50.00    0.00
15.63
## 70      BKF       Sissili      Gt   M     70        0     25.00   12.50
12.50
## 95      GHA    Bougouhiya      Gt   F     95        0     18.75    0.00
6.25
## 99      BKF       Sissili      Gt   F     99        0     13.33    6.67
6.67
## 112     GHA       MorURTi      Gt   F    112        0     66.67    0.00
0.00
## 116     GHA      Fumbissi      Gt   F    116        0    100.00    0.00
0.00
## 125     GHA      Fumbissi      Gt   M    125        0    100.00    0.00
66.67
## 126     GHA        Grogro      Gt   M    126        0    100.00    0.00
0.00
## 133     GHA        Grogro      Gt   F    133        0    100.00    0.00
80.00
## 134     GHA       Kumpole      Gt   F    134        0    100.00    0.00
40.00
## 135     GHA Sissili Bidge      Gt   F    135        0    100.00    0.00
20.00
## 142     GHA    Bougouhiya      Gt   M    142        0      0.00    0.00
0.00
## 148     GHA       Kumpole      Gt   M    148        0    100.00    0.00
50.00
```

```
## 149     GHA        Psikp_      Gt   M    149        0    100.00    0.00
0.00
## 152     GHA      Kandiaga      Gt   M    152        0    100.00    0.00
0.00
## 153     GHA Sissili Bidge      Gt   M    153        0    100.00    0.00
0.00
## 154     GHA        Nabogo      Gt   F    154        0      0.00    0.00
0.00
## 155     GHA Volta Blanche      Gt   F    155        0      0.00    0.00
0.00
##     Prev_Tz Prev_Tsg Prev_TcTv Prev_TcTz Prev_TcTsg Prev_TvTz Prev_TvTsg
## 2      0.37        0      0.74      1.10          0      0.00          0
## 3      0.00        0      0.00      0.00          0      0.00          0
## 11     1.89        0      1.89      0.94          0      0.00          0
## 14     1.05        0      0.00      1.05          0      1.05          0
## 24     8.97        0      0.00     10.26          0     14.10          0
## 43    24.53        0      0.00     16.98          0      7.55          0
## 44     1.89        0      0.00      0.00          0      0.00          0
## 55     0.00        0      0.00      0.00          0      0.00          0
## 69    15.63        0      0.00     18.75          0      0.00          0
## 70     0.00        0      0.00      0.00          0      0.00          0
## 95     0.00        0      0.00      0.00          0     12.50          0
## 99     0.00        0      0.00      0.00          0      0.00          0
## 112   33.33        0      0.00     22.22          0     11.11          0
## 116   37.50        0      0.00      0.00          0     62.50          0
## 125   33.33        0      0.00      0.00          0      0.00          0
## 126   16.67        0      0.00      0.00          0     83.33          0
## 133   20.00        0      0.00      0.00          0      0.00          0
## 134   60.00        0      0.00      0.00          0      0.00          0
## 135   80.00        0      0.00      0.00          0      0.00          0
## 142    0.00        0      0.00      0.00          0      0.00          0
## 148   50.00        0      0.00      0.00          0      0.00          0
## 149   50.00        0      0.00      0.00          0     50.00          0
## 152  100.00        0      0.00      0.00          0      0.00          0
## 153  100.00        0      0.00      0.00          0      0.00          0
## 154    0.00        0      0.00      0.00          0      0.00          0
## 155    0.00        0      0.00      0.00          0      0.00          0
##     Prev_TzTsg Prev_TcTvTz
## 2            0        0.00
## 3            0        0.00
## 11           0        0.00
## 14           0        0.00
## 24           0        1.28
## 43           0        5.66
## 44           0        0.00
## 55           0        0.00
## 69           0        0.00
## 70           0        0.00
## 95           0        0.00
## 99           0        0.00
```

```
## 112          0        0.00
## 116          0        0.00
## 125          0        0.00
## 126          0        0.00
## 133          0        0.00
## 134          0        0.00
## 135          0        0.00
## 142          0        0.00
## 148          0        0.00
## 149          0        0.00
## 152          0        0.00
## 153          0        0.00
## 154          0        0.00
## 155          0        0.00
```

```
##Tc
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_Tc) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tc) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.4888  -0.3189  -0.3189  -0.3189   9.0112
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.4888     0.8612   4.051 0.000463 ***
## CountryGHA   -3.1699     1.0351  -3.062 0.005348 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5.933994)
##
##     Null deviance: 198.07  on 25  degrees of freedom
## Residual deviance: 142.42  on 24  degrees of freedom
## AIC: 124
##
## Number of Fisher Scoring iterations: 2
```

```
##TV
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_Tv) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tv) ~ Country, family = gaussian(), data = data_gt)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -16.711  -16.711   -5.586    2.630   63.289
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10.425      7.702   1.354    0.188
## CountryGHA     6.286      9.257   0.679    0.504
##
## (Dispersion parameter for gaussian family taken to be 474.5787)
##
##     Null deviance: 11609  on 25  degrees of freedom
## Residual deviance: 11390  on 24  degrees of freedom
## AIC: 237.93
##
## Number of Fisher Scoring iterations: 2
```

```
##Tsg
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_Tsg) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_Tsg) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
##      0       0       0       0       0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryGHA         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 25  degrees of freedom
## Residual deviance: 0  on 24  degrees of freedom
## AIC: -Inf
##
## Number of Fisher Scoring iterations: 1
```

```
##Tz
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_Tz) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
```

```
## glm(formula = (Prev_Tz) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -34.998  -17.495   -0.650    2.187   65.002
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.650      9.733   0.067  0.94731
## CountryGHA    34.348     11.698   2.936  0.00722 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 757.925)
##
##     Null deviance: 24724  on 25  degrees of freedom
## Residual deviance: 18190  on 24  degrees of freedom
## AIC: 250.1
##
## Number of Fisher Scoring iterations: 2
```

```
##TcTV
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_TcTv) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTv) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3287   0.0000   0.0000   0.0000   1.5613
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3288     0.1302   2.525   0.0186 *
## CountryGHA   -0.3288     0.1565  -2.101   0.0463 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1356286)
##
##     Null deviance: 3.8537  on 25  degrees of freedom
## Residual deviance: 3.2551  on 24  degrees of freedom
## AIC: 25.76
##
## Number of Fisher Scoring iterations: 2
```

```r
##TcTz
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_TcTz) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTz) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.7894  -3.7894  -3.7894   0.3188  18.4306
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.3862     2.2620   0.171    0.866
## CountryGHA    3.4032     2.7186   1.252    0.223
##
## (Dispersion parameter for gaussian family taken to be 40.93348)
##
##     Null deviance: 1046.5  on 25  degrees of freedom
## Residual deviance:  982.4  on 24  degrees of freedom
## AIC: 174.21
##
## Number of Fisher Scoring iterations: 2
```

```r
##TcTsg
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_TcTsg) ~ Country,data=data_gt, family=gaussian())
summary(model1)
```

```
##
## Call:
## glm(formula = (Prev_TcTsg) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
##      0       0       0       0       0
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0          0      NA       NA
## CountryGHA         0          0      NA       NA
##
## (Dispersion parameter for gaussian family taken to be 0)
##
##     Null deviance: 0  on 25  degrees of freedom
## Residual deviance: 0  on 24  degrees of freedom
## AIC: -Inf
```

```
##
## Number of Fisher Scoring iterations: 1

##TvTz
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_TvTz) ~ Country,data=data_gt, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TvTz) ~ Country, family = gaussian(), data = data_gt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -13.394  -13.394   -1.589   -0.131   69.936
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.1312     7.4503   0.018    0.986
## CountryGHA   13.2626     8.9542   1.481    0.152
##
## (Dispersion parameter for gaussian family taken to be 444.0611)
##
##     Null deviance: 11632  on 25  degrees of freedom
## Residual deviance: 10657  on 24  degrees of freedom
## AIC: 236.2
##
## Number of Fisher Scoring iterations: 2

##TcTvTz
data_gt$Country <- relevel(data_gt$Country, ref= "BKF")
model1<-glm((Prev_TcTvTz) ~ Country,data=data_gt, family=gaussian())
summary(model1)

##
## Call:
## glm(formula = (Prev_TcTvTz) ~ Country, family = gaussian(), data = data_gt
)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.3856  -0.3856  -0.3856   0.0000   5.2744
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -6.097e-16  4.018e-01   0.000    1.000
## CountryGHA   3.856e-01  4.829e-01   0.798    0.432
##
## (Dispersion parameter for gaussian family taken to be 1.291594)
##
##     Null deviance: 31.822  on 25  degrees of freedom
```

```
## Residual deviance: 30.998  on 24  degrees of freedom
## AIC: 84.356
##
## Number of Fisher Scoring iterations: 2
```

Preparation of Figure 4

```
data_sodqpcr=read.csv("rawdata_fig4_dataqpcr.csv")
data_sodqpcr
```

```
##     Sample Species Country copy_number_corrected.per.fly log_copy
## 1        A     G.m     Ken                     1052227.45     6.02
## 2        A     G.m     Ken                     1027001.16     6.01
## 3        A     G.m     Ken                     1023120.19     6.01
## 4        A     G.m     Ken                     5603115.00     6.75
## 5        A     G.m     Ken                     4966500.00     6.70
## 6        A     G.m     Ken                     5341245.00     6.73
## 7        A     G.m     Ken                      272400.38     5.44
## 8        A     G.m     Ken                      256746.95     5.41
## 9        A     G.m     Ken                      356806.13     5.55
## 10       A     G.m     Ken                    12208549.27     7.09
## 11       A     G.m     Ken                    13125132.16     7.12
## 12       A     G.m     Ken                    12216919.89     7.09
## 13       A     G.m     Ken                      645518.77     5.81
## 14       A     G.m     Ken                      676953.08     5.83
## 15       A     G.m     Ken                      669246.60     5.83
## 16       A     G.m     Ken                     2907825.97     6.46
## 17       A     G.m     Ken                     3374021.40     6.53
## 18       A     G.m     Ken                     3457464.94     6.54
## 19       A     G.m     Ken                     3423114.71     6.53
## 20       A     G.m     Ken                      614100.77     5.79
## 21       A     G.m     Ken                      516256.62     5.71
## 22       A     G.m     Ken                     1808072.61     6.26
## 23       A     G.m     Ken                     2973891.21     6.47
## 24       A     G.m     Ken                     1961518.45     6.29
## 25       A     G.m     Ken                      905739.16     5.96
## 26       A     G.m     Ken                      886696.02     5.95
## 27       A     G.m     Ken                      804572.50     5.91
## 28       A     G.m     Ken                      250735.18     5.40
## 29       A     G.m     Ken                     1344821.04     6.13
## 30       A     G.m     Ken                     1505614.86     6.18
## 31       A     G.m     Ken                      684950.46     5.84
## 32       A     G.m     Ken                      630574.17     5.80
## 33       A     G.m     Ken                      564273.26     5.75
## 34       A     G.m     Ken                      223782.47     5.35
## 35       A     G.m     Ken                      201414.77     5.30
## 36       A     G.m     Ken                      181895.79     5.26
## 37       A     G.m     Ken                     1542650.80     6.19
## 38       A     G.m     Ken                     1714853.68     6.23
## 39       A     G.m     Ken                     1468208.93     6.17
## 40       A     G.m     Zim                     2600739.64     6.42
```

```
## 41       A     G.m     Zim                  2550570.36     6.41
## 42       A     G.m     Zim                  2560425.04     6.41
## 43       A     G.m     Zim                  3582643.40     6.55
## 44       A     G.m     Zim                  3540592.30     6.55
## 45       A     G.m     Zim                  3719862.79     6.57
## 46       A     G.m     Zim                 21886249.20     7.34
## 47       A     G.m     Zim                  5152192.14     6.71
## 48       A     G.m     Zim                  2196170.46     6.34
## 49       A     G.m     Zim                  1959602.48     6.29
## 50       A     G.m     Zim                  3006462.36     6.48
## 51       A     G.m     Zim                  4871250.21     6.69
## 52       A     G.m     Zim                  4461318.75     6.65
## 53       A     G.m     Zim                  4451121.45     6.65
## 54       A     G.p     Eth                  4105792.26     6.61
## 55       A     G.p     Eth                  3964434.78     6.60
## 56       A     G.p     Eth                  3185897.75     6.50
## 57       A     G.p     Eth                  2926772.25     6.47
## 58       A     G.p     Eth                  2956410.45     6.47
## 59       A     G.p     Eth                  3536825.20     6.55
## 60       A     G.p     Ken                   253637.59     5.40
## 61       A     G.p     Ken                   262660.71     5.42
## 62       A     G.p     Ken                   256278.50     5.41
## 63       A     G.p     Ken                    15725.73     4.20
## 64       A     G.p     Ken                    16857.07     4.23
## 65       A     G.p     Ken                     4972.94     3.70
## 66       A     G.p     Ken                     7221.39     3.86
## 67       A     G.p     Ken                     8997.20     3.95
## 68       A     G.p     Ken                  9233957.60     6.97
## 69       A     G.p     Ken                  8894524.80     6.95
## 70       A     G.p     Ken                  8139460.00     6.91
## 71       A     G.p     Ken                   752835.83     5.88
## 72       A     G.p     Ken                   833772.53     5.92
## 73       A     G.p     Ken                   728305.78     5.86
## 74       A     G.p     Ken                  1765650.25     6.25
## 75       A     G.p     Ken                  1968265.85     6.29
## 76       A     G.p     Ken                  1961504.95     6.29
## 77       A     G.p     Ken                  3549700.00     6.55
## 78       A     G.p     Ken                  3329111.50     6.52
## 79       A     G.p     Ken                  3151626.50     6.50
## 80       A     G.p     Ken                   962698.10     5.98
## 81       A     G.p     Ken                  1143055.77     6.06
## 82       A     G.p     Ken                  1191733.62     6.08
## 83       A     G.p     Ken                  1015960.30     6.01
## 84       A     G.p     Ken                  1205362.82     6.08
## 85       A     G.p     Ken                  1133481.14     6.05
## 86       A     G.p     Ken                  1472527.87     6.17
## 87       A     G.p     Ken                  1308940.95     6.12
## 88       A     G.p     Ken                  1281185.22     6.11
## 89       A     G.p     Ken                  4105627.56     6.61
## 90       A     G.p     Ken                  3459869.64     6.54
```

```
## 91       A     G.p     Ken                  3122746.02     6.49
## 92       A     G.p     Ken                   953219.87     5.98
## 93       A     G.p     Ken                  1385815.69     6.14
## 94       A     G.p     Ken                  1019450.62     6.01
## 95       A     G.p     Ken                  3010949.92     6.48
## 96       A     G.p     Ken                  3137601.25     6.50
## 97       A     G.p     Ken                  3015783.94     6.48
## 98       A     G.p     Ken                    29382.30     4.47
## 99       A     G.p     Ken                    32657.98     4.51
## 100      A     G.p     Ken                    27542.41     4.44
## 101      A     G.p     Ken                  1130434.50     6.05
## 102      A     G.p     Ken                  1071464.00     6.03
## 103      A     G.p     Ken                  1115442.00     6.05
## 104      A     G.p     Ken                  1987645.10     6.30
## 105      A     G.p     Ken                  2014324.90     6.30
## 106      A     G.p     Ken                  1922851.30     6.28
## 107      A     G.p     Ken                  1427522.32     6.15
## 108      A     G.p     Ken                  1666099.34     6.22
## 109      A     G.p     Ken                  1353322.67     6.13
## 110      A     G.p     Tan                  1446373.96     6.16
## 111      A     G.p     Tan                  1610826.54     6.21
## 112      A     G.p     Tan                  1561400.90     6.19
## 113      A     G.p     Tan                  1518448.88     6.18
## 114      A     G.p     Tan                  1925225.12     6.28
## 115      A     G.p     Tan                  1662840.76     6.22
## 116      A     G.p     Tan                    81575.76     4.91
## 117      A     G.p     Tan                    96277.70     4.98
## 118      A     G.p     Tan                    98279.91     4.99
## 119      A     G.p     Tan                   952425.25     5.98
## 120      A     G.p     Tan                  1186677.01     6.07
## 121      A     G.p     Tan                  1273054.06     6.10
## 122      A     G.p     Tan                  1088968.62     6.04
## 123      A     G.p     Tan                  1194766.35     6.08
## 124      A     G.p     Tan                  1155760.12     6.06
## 125      A     G.p     Tan                  1828842.13     6.26
## 126      A     G.p     Tan                  1987235.76     6.30
## 127      A     G.p     Tan                  1811666.91     6.26
## 128      A     G.p     Tan                  1053273.92     6.02
## 129      A     G.p     Tan                  3315587.63     6.52
## 130      A     G.p     Tan                  1656557.58     6.22
## 131      A     G.p     Tan                   661127.46     5.82
## 132      A     G.p     Tan                   768632.08     5.89
## 133      A     G.p     Tan                   684498.03     5.84
## 134      A     G.p     Tan                  1811973.66     6.26
## 135      A     G.p     Tan                  1956220.20     6.29
## 136      A     G.p     Tan                  2317824.54     6.37
## 137      A     G.p     Tan                   909065.20     5.96
## 138      A     G.p     Tan                  1013218.39     6.01
## 139      A     G.p     Tan                  1032482.08     6.01
## 140      A     G.p     Tan                  1063799.07     6.03
```

```
## 141      A     G.p     Tan                  565663.17     5.75
## 142      A     G.p     Tan                 1195693.09     6.08
## 143      A     G.p     Tan                 1336170.69     6.13
## 144      A     G.p     Tan                  624448.61     5.80
## 145      A     G.p     Tan                  460994.06     5.66
## 146      A     G.p     Tan                  474771.75     5.68
## 147      A     G.p     Tan                  471792.79     5.67
## 148      A     G.p     Tan                  543356.45     5.74
## 149      A     G.p     Tan                  462562.66     5.67
## 150      A     G.p     Tan                  468385.63     5.67
## 151      A     G.p     Tan                  800831.26     5.90
## 152      A     G.p     Tan                  860329.81     5.93
## 153      A     G.p     Tan                 1046502.69     6.02
## 154      A     G.p     Tan                 1901818.67     6.28
## 155      A     G.p     Tan                 2063108.97     6.31
## 156      A     G.p     Tan                 2297758.73     6.36
## 157      C     G.m     Ken                 1728659.02     6.24
## 158      C     G.m     Ken                 1738898.78     6.24
## 159      C     G.m     Ken                 1251346.19     6.10
## 160      C     G.m     Ken                  285983.07     5.46
## 161      C     G.m     Ken                  235748.21     5.37
## 162      C     G.m     Ken                  240005.40     5.38
## 163      C     G.m     Ken                 2844165.32     6.45
## 164      C     G.m     Ken                 2543434.64     6.41
## 165      C     G.m     Ken                 2202409.98     6.34
## 166      C     G.m     Ken                  573892.40     5.76
## 167      C     G.m     Ken                  492440.89     5.69
## 168      C     G.m     Ken                  497065.13     5.70
## 169      C     G.m     Ken                 1493017.24     6.17
## 170      C     G.m     Ken                 1573266.65     6.20
## 171      C     G.m     Ken                 1428103.45     6.15
## 172      C     G.m     Ken                 1775848.62     6.25
## 173      C     G.m     Ken                 1544673.06     6.19
## 174      C     G.m     Ken                 1607720.94     6.21
## 175      C     G.m     Ken                 1512030.00     6.18
## 176      C     G.m     Ken                 1919580.24     6.28
## 177      C     G.m     Ken                 1430147.76     6.16
## 178      C     G.m     Ken                    9759.00     3.99
## 179      C     G.m     Ken                 5126922.81     6.71
## 180      C     G.m     Ken                 4590132.05     6.66
## 181      C     G.m     Ken                 4123580.93     6.62
## 182      C     G.m     Ken                 3787420.87     6.58
## 183      C     G.m     Ken                 2531907.19     6.40
## 184      C     G.m     Ken                 3496918.79     6.54
## 185      C     G.m     Ken                 1055567.60     6.02
## 186      C     G.m     Ken                 1326785.10     6.12
## 187      C     G.m     Ken                 1226611.80     6.09
## 188      C     G.m     Ken                  207413.72     5.32
## 189      C     G.m     Ken                  410464.12     5.61
## 190      C     G.m     Ken                  374778.37     5.57
```

```
## 191      C     G.m     Ken                  1388464.70     6.14
## 192      C     G.m     Ken                  1181371.66     6.07
## 193      C     G.m     Ken                  1325866.12     6.12
## 194      C     G.m     Ken                  1810416.87     6.26
## 195      C     G.m     Ken                  1613200.61     6.21
## 196      C     G.m     Ken                  1615328.85     6.21
## 197      C     G.m     Ken                   893671.70     5.95
## 198      C     G.m     Ken                  1143673.53     6.06
## 199      C     G.m     Ken                  1031229.27     6.01
## 200      C     G.m     Ken                  1113839.36     6.05
## 201      C     G.m     Ken                   997034.78     6.00
## 202      C     G.m     Ken                  1027653.46     6.01
## 203      C     G.p     Ken                   718805.85     5.86
## 204      C     G.p     Ken                   725343.15     5.86
## 205      C     G.p     Ken                   599202.98     5.78
## 206      C     G.p     Ken                   677917.76     5.83
## 207      C     G.p     Ken                   637347.20     5.80
## 208      C     G.p     Ken                   643047.98     5.81
## 209      C     G.p     Ken                   880761.89     5.94
## 210      C     G.p     Ken                   988591.31     6.00
## 211      C     G.p     Ken                   767819.86     5.89
## 212      C     G.p     Ken                   916317.90     5.96
## 213      C     G.p     Ken                  1005044.48     6.00
## 214      C     G.p     Ken                  1078852.43     6.03
## 215      C     G.p     Ken                   739683.64     5.87
## 216      C     G.p     Ken                   695705.76     5.84
## 217      C     G.p     Ken                   682878.87     5.83
## 218      C     G.p     Ken                   631131.07     5.80
## 219      C     G.p     Ken                   641502.40     5.81
## 220      C     G.p     Ken                   566131.46     5.75
## 221      C     G.p     Ken                  1015118.40     6.01
## 222      C     G.p     Ken                  1094571.76     6.04
## 223      C     G.p     Ken                   947443.84     5.98
## 224      C     G.p     Ken                   204534.77     5.31
## 225      C     G.p     Ken                   280568.34     5.45
## 226      C     G.p     Ken                   165776.91     5.22
## 227      C     G.p     Ken                  2924446.34     6.47
## 228      C     G.p     Ken                  2826128.98     6.45
## 229      C     G.p     Ken                  2171559.77     6.34
## 230      C     G.p     Ken                   897908.45     5.95
## 231      C     G.p     Ken                   898818.18     5.95
## 232      C     G.p     Ken                   973113.21     5.99
## 233      C     G.p     Ken                  1059270.91     6.03
## 234      C     G.p     Ken                   977397.96     5.99
## 235      C     G.p     Ken                  1060751.81     6.03
## 236      C     G.p     Ken                  2808715.95     6.45
## 237      C     G.p     Ken                  2968453.35     6.47
## 238      C     G.p     Ken                  2803391.37     6.45
## 239      C     G.p     Ken                   332666.77     5.52
## 240      C     G.p     Ken                   321241.25     5.51
```

```
## 241      C     G.p     Ken                  320209.27     5.51
## 242      C     G.p     Ken                 1200292.42     6.08
## 243      C     G.p     Ken                  971056.86     5.99
## 244      C     G.p     Ken                  908298.93     5.96
## 245      C     G.p     Ken                 2279974.49     6.36
## 246      C     G.p     Ken                 1883112.09     6.27
## 247      C     G.p     Ken                 1932719.89     6.29
## 248      C     G.p     Ken                  194752.82     5.29
## 249      C     G.p     Ken                  184438.27     5.27
## 250      C     G.p     Ken                  179193.58     5.25
## 251      C     G.p     Tan                 1210058.85     6.08
## 252      C     G.p     Tan                 1282992.80     6.11
## 253      C     G.p     Tan                 1551156.03     6.19
## 254      C     G.p     Tan                 1241956.64     6.09
## 255      C     G.p     Tan                 1661873.21     6.22
## 256      C     G.p     Tan                 1736841.36     6.24
## 257      C     G.p     Tan                  983613.85     5.99
## 258      C     G.p     Tan                 1210460.94     6.08
## 259      C     G.p     Tan                 1431819.79     6.16
## 260      C     G.p     Tan                 1293304.16     6.11
## 261      C     G.p     Tan                 1746187.17     6.24
## 262      C     G.p     Tan                 1950091.85     6.29
## 263      C     G.p     Tan                 1641382.66     6.22
## 264      C     G.p     Tan                 1549406.98     6.19
## 265      C     G.p     Tan                 1484065.92     6.17
## 266      C     G.p     Tan                  537760.05     5.73
## 267      C     G.p     Tan                  605603.38     5.78
## 268      C     G.p     Tan                  657568.48     5.82
## 269      C     G.p     Tan                  599201.28     5.78
## 270      C     G.p     Tan                  699494.40     5.84
## 271      C     G.p     Tan                  517363.20     5.71
## 272      C     G.p     Tan                  708694.56     5.85
## 273      C     G.p     Tan                  858284.28     5.93
## 274      C     G.p     Tan                  854924.70     5.93
## 275      C     G.p     Tan                  333963.04     5.52
## 276      C     G.p     Tan                  359125.40     5.56
## 277      C     G.p     Tan                  270383.12     5.43
## 278      C     G.p     Tan                  528792.52     5.72
## 279      C     G.p     Tan                  590464.75     5.77
## 280      C     G.p     Tan                  648716.88     5.81
## 281      C     G.p     Tan                  269764.32     5.43
## 282      C     G.p     Tan                  281597.65     5.45
## 283      C     G.p     Tan                  298947.26     5.48
## 284      C     G.p     Tan                    3249.22     3.51
## 285      C     G.p     Tan                    5522.06     3.74
## 286      C     G.p     Tan                    7960.32     3.90
## 287      C     G.p     Tan                 8036502.48     6.91
## 288      C     G.p     Tan                 7169820.84     6.86
## 289      C     G.p     Tan                 7373359.71     6.87
## 290      C     G.p     Tan                 1951057.33     6.29
```

```
## 291      C     G.p     Tan                    1641346.31     6.22
## 292      C     G.p     Tan                    1720707.21     6.24
## 293      C     G.p     Tan                    5444975.94     6.74
## 294      C     G.p     Tan                    4577024.47     6.66
## 295      C     G.p     Tan                    3491578.15     6.54
## 296      C     G.p     Tan                       2068.34     3.32
## 297      C     G.p     Tan                       3294.06     3.52
## 298      C     G.p     Tan                       1215.40     3.08
```

```
str(data_sodqpcr)
```

```
## 'data.frame':    298 obs. of  5 variables:
##  $ Sample                      : chr  "A" "A" "A" "A" ...
##  $ Species                     : chr  "G.m" "G.m" "G.m" "G.m" ...
##  $ Country                     : chr  "Ken" "Ken" "Ken" "Ken" ...
##  $ copy_number_corrected.per.fly: num  1052227 1027001 1023120 5603115 496
6500 ...
##  $ log_copy                    : num  6.02 6.01 6.01 6.75 6.7 6.73 5.44 5
.41 5.55 7.09 ...
```

```
attach(data_sodqpcr)
```

```
## The following objects are masked from data (pos = 3):
##
##     Country, Sample, Species
```

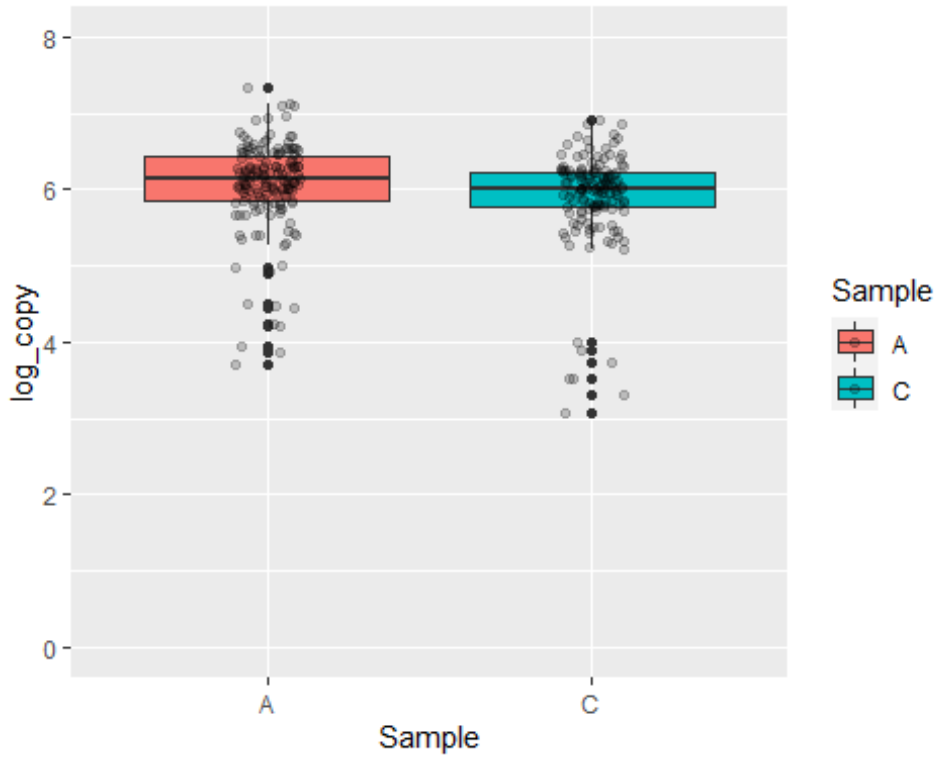
```
## The following objects are masked from data (pos = 4):
##
##     Country, Sample, Species
```

```
head(data_sodqpcr)
```

```
##   Sample Species Country copy_number_corrected.per.fly log_copy
## 1      A     G.m     Ken                       1052227     6.02
## 2      A     G.m     Ken                       1027001     6.01
## 3      A     G.m     Ken                       1023120     6.01
## 4      A     G.m     Ken                       5603115     6.75
## 5      A     G.m     Ken                       4966500     6.70
## 6      A     G.m     Ken                       5341245     6.73
```

```
data_sodqpcr=na.omit(data_sodqpcr)
```

```
fig4.tiff<-ggplot(data_sodqpcr,aes(x=Sample ,y=log_copy, fill=Sample)) +
  geom_boxplot() + geom_jitter(width=0.1,alpha=0.2)+ ylim(0, 8)
fig4.tiff
```




```
tiff("fig4.tiff", width = 4, height = 4, units = 'in', res = 300)
plot(fig4.tiff+theme_tufte() + theme(axis.line = element_line(size = 1, colou
r = "black"))+ theme(legend.position = c(.95, .35),legend.justification = c("
right", "top"))) + xlab(expression(bolditalic("Infection type"))) + ylab( exp
ression (paste (bold("log10  "), bolditalic("Sodalis"), bold(" copy number"))
))
dev.off()

## png
##   2

model1<-glm(log_copy ~ Sample, data = data_sodqpcr)
summary(model1)

##
## Call:
## glm(formula = log_copy ~ Sample, data = data_sodqpcr)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.8151  -0.1568   0.1028   0.3449   1.2907
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.04929    0.04969 121.738   <2e-16 ***
## SampleC     -0.15415    0.07199  -2.141   0.0331 *
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.3851965)
##
##     Null deviance: 115.78  on 297  degrees of freedom
## Residual deviance: 114.02  on 296  degrees of freedom
## AIC: 565.39
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: log_copy
##        LR Chisq Df Pr(>Chisq)
## Sample   4.5859  1    0.03224 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Supplementary figure 2

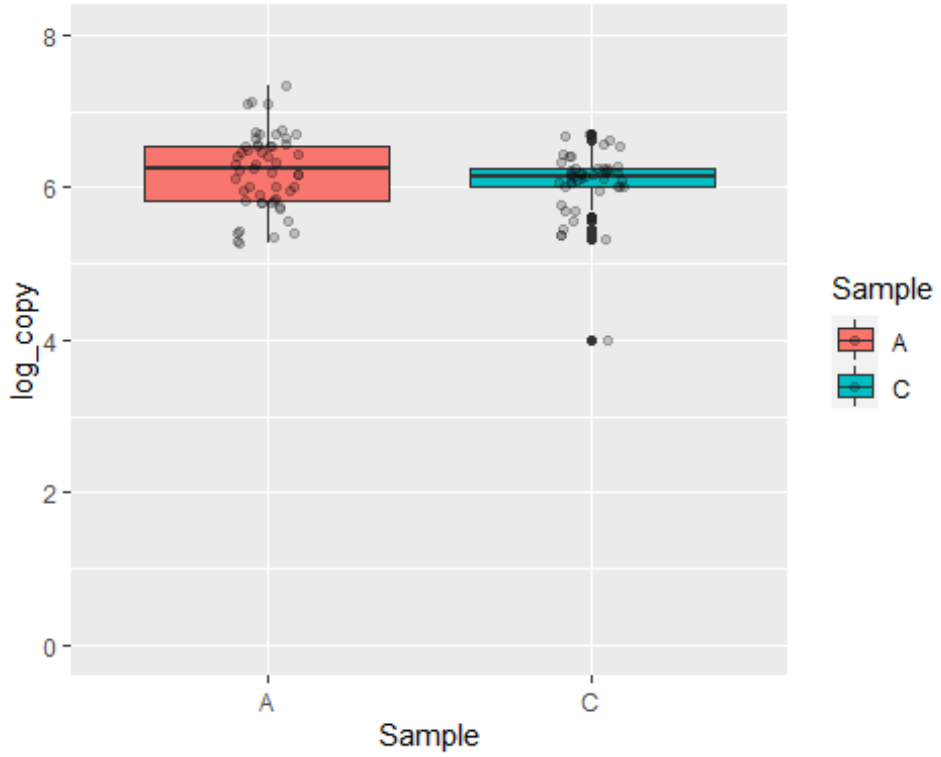
```
# supplementary figure 2A
Gmm <- subset(data_sodqpcr, Species=="G.m")
Gmm
```

```
##     Sample Species Country copy_number_corrected.per.fly log_copy
## 1        A     G.m     Ken                      1052227.4     6.02
## 2        A     G.m     Ken                      1027001.2     6.01
## 3        A     G.m     Ken                      1023120.2     6.01
## 4        A     G.m     Ken                      5603115.0     6.75
## 5        A     G.m     Ken                      4966500.0     6.70
## 6        A     G.m     Ken                      5341245.0     6.73
## 7        A     G.m     Ken                       272400.4     5.44
## 8        A     G.m     Ken                       256747.0     5.41
## 9        A     G.m     Ken                       356806.1     5.55
## 10       A     G.m     Ken                     12208549.3     7.09
## 11       A     G.m     Ken                     13125132.2     7.12
## 12       A     G.m     Ken                     12216919.9     7.09
## 13       A     G.m     Ken                       645518.8     5.81
## 14       A     G.m     Ken                       676953.1     5.83
## 15       A     G.m     Ken                       669246.6     5.83
## 16       A     G.m     Ken                      2907826.0     6.46
## 17       A     G.m     Ken                      3374021.4     6.53
## 18       A     G.m     Ken                      3457464.9     6.54
## 19       A     G.m     Ken                      3423114.7     6.53
## 20       A     G.m     Ken                       614100.8     5.79
## 21       A     G.m     Ken                       516256.6     5.71
## 22       A     G.m     Ken                      1808072.6     6.26
## 23       A     G.m     Ken                      2973891.2     6.47
## 24       A     G.m     Ken                      1961518.4     6.29
```

```
## 25       A     G.m     Ken                    905739.2     5.96
## 26       A     G.m     Ken                    886696.0     5.95
## 27       A     G.m     Ken                    804572.5     5.91
## 28       A     G.m     Ken                    250735.2     5.40
## 29       A     G.m     Ken                   1344821.0     6.13
## 30       A     G.m     Ken                   1505614.9     6.18
## 31       A     G.m     Ken                    684950.5     5.84
## 32       A     G.m     Ken                    630574.2     5.80
## 33       A     G.m     Ken                    564273.3     5.75
## 34       A     G.m     Ken                    223782.5     5.35
## 35       A     G.m     Ken                    201414.8     5.30
## 36       A     G.m     Ken                    181895.8     5.26
## 37       A     G.m     Ken                   1542650.8     6.19
## 38       A     G.m     Ken                   1714853.7     6.23
## 39       A     G.m     Ken                   1468208.9     6.17
## 40       A     G.m     Zim                   2600739.6     6.42
## 41       A     G.m     Zim                   2550570.4     6.41
## 42       A     G.m     Zim                   2560425.0     6.41
## 43       A     G.m     Zim                   3582643.4     6.55
## 44       A     G.m     Zim                   3540592.3     6.55
## 45       A     G.m     Zim                   3719862.8     6.57
## 46       A     G.m     Zim                  21886249.2     7.34
## 47       A     G.m     Zim                   5152192.1     6.71
## 48       A     G.m     Zim                   2196170.5     6.34
## 49       A     G.m     Zim                   1959602.5     6.29
## 50       A     G.m     Zim                   3006462.4     6.48
## 51       A     G.m     Zim                   4871250.2     6.69
## 52       A     G.m     Zim                   4461318.8     6.65
## 53       A     G.m     Zim                   4451121.5     6.65
## 157      C     G.m     Ken                   1728659.0     6.24
## 158      C     G.m     Ken                   1738898.8     6.24
## 159      C     G.m     Ken                   1251346.2     6.10
## 160      C     G.m     Ken                    285983.1     5.46
## 161      C     G.m     Ken                    235748.2     5.37
## 162      C     G.m     Ken                    240005.4     5.38
## 163      C     G.m     Ken                   2844165.3     6.45
## 164      C     G.m     Ken                   2543434.6     6.41
## 165      C     G.m     Ken                   2202410.0     6.34
## 166      C     G.m     Ken                    573892.4     5.76
## 167      C     G.m     Ken                    492440.9     5.69
## 168      C     G.m     Ken                    497065.1     5.70
## 169      C     G.m     Ken                   1493017.2     6.17
## 170      C     G.m     Ken                   1573266.6     6.20
## 171      C     G.m     Ken                   1428103.4     6.15
## 172      C     G.m     Ken                   1775848.6     6.25
## 173      C     G.m     Ken                   1544673.1     6.19
## 174      C     G.m     Ken                   1607720.9     6.21
## 175      C     G.m     Ken                   1512030.0     6.18
## 176      C     G.m     Ken                   1919580.2     6.28
## 177      C     G.m     Ken                   1430147.8     6.16
```

```
## 178      C     G.m     Ken                       9759.0     3.99
## 179      C     G.m     Ken                    5126922.8     6.71
## 180      C     G.m     Ken                    4590132.0     6.66
## 181      C     G.m     Ken                    4123580.9     6.62
## 182      C     G.m     Ken                    3787420.9     6.58
## 183      C     G.m     Ken                    2531907.2     6.40
## 184      C     G.m     Ken                    3496918.8     6.54
## 185      C     G.m     Ken                    1055567.6     6.02
## 186      C     G.m     Ken                    1326785.1     6.12
## 187      C     G.m     Ken                    1226611.8     6.09
## 188      C     G.m     Ken                     207413.7     5.32
## 189      C     G.m     Ken                     410464.1     5.61
## 190      C     G.m     Ken                     374778.4     5.57
## 191      C     G.m     Ken                    1388464.7     6.14
## 192      C     G.m     Ken                    1181371.7     6.07
## 193      C     G.m     Ken                    1325866.1     6.12
## 194      C     G.m     Ken                    1810416.9     6.26
## 195      C     G.m     Ken                    1613200.6     6.21
## 196      C     G.m     Ken                    1615328.9     6.21
## 197      C     G.m     Ken                     893671.7     5.95
## 198      C     G.m     Ken                    1143673.5     6.06
## 199      C     G.m     Ken                    1031229.3     6.01
## 200      C     G.m     Ken                    1113839.4     6.05
## 201      C     G.m     Ken                     997034.8     6.00
## 202      C     G.m     Ken                    1027653.5     6.01
```

```
sup_fig2a<-ggplot(Gmm,aes(x=Sample ,y=log_copy, fill=Sample)) +
  geom_boxplot() + geom_jitter(width=0.1,alpha=0.2)+ ylim(0, 8)
sup_fig2a
```




```
tiff("sup_fig2a", width = 4, height = 4, units = 'in', res = 300)
plot(sup_fig2a+theme_tufte() + theme(axis.line = element_line(size = 1, colou
r = "black"))+ theme(legend.position = c(.95, .35),legend.justification = c("
right", "top"))) + xlab(expression(bolditalic("Infection type"))) + ylab( exp
ression (paste (bold("log10  "), bolditalic("Sodalis"), bold(" copy number"))
))
dev.off()

## png
##   2

model1<-glm(log_copy ~ Sample, data = Gmm)
summary(model1)

##
## Call:
## glm(formula = log_copy ~ Sample, data = Gmm)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q       Max
## -2.05891  -0.29748   0.07396   0.30252   1.12396
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  6.21604    0.06579  94.478   <2e-16 ***
## SampleC     -0.16712    0.09652  -1.731   0.0865 .
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2294259)
##
##     Null deviance: 22.942  on 98  degrees of freedom
## Residual deviance: 22.254  on 97  degrees of freedom
## AIC: 139.18
##
## Number of Fisher Scoring iterations: 2
```

```
Anova(model1)
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: log_copy
##        LR Chisq Df Pr(>Chisq)
## Sample    2.998  1    0.08337 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
#-----------------------------------------------------------------------
# supplementary figure 2A
Gp <- subset(data_sodqpcr, Species=="G.p")
Gp
```

```
##     Sample Species Country copy_number_corrected.per.fly log_copy
## 54       A     G.p     Eth                     4105792.26     6.61
## 55       A     G.p     Eth                     3964434.78     6.60
## 56       A     G.p     Eth                     3185897.75     6.50
## 57       A     G.p     Eth                     2926772.25     6.47
## 58       A     G.p     Eth                     2956410.45     6.47
## 59       A     G.p     Eth                     3536825.20     6.55
## 60       A     G.p     Ken                      253637.59     5.40
## 61       A     G.p     Ken                      262660.71     5.42
## 62       A     G.p     Ken                      256278.50     5.41
## 63       A     G.p     Ken                       15725.73     4.20
## 64       A     G.p     Ken                       16857.07     4.23
## 65       A     G.p     Ken                        4972.94     3.70
## 66       A     G.p     Ken                        7221.39     3.86
## 67       A     G.p     Ken                        8997.20     3.95
## 68       A     G.p     Ken                     9233957.60     6.97
## 69       A     G.p     Ken                     8894524.80     6.95
## 70       A     G.p     Ken                     8139460.00     6.91
## 71       A     G.p     Ken                      752835.83     5.88
## 72       A     G.p     Ken                      833772.53     5.92
## 73       A     G.p     Ken                      728305.78     5.86
## 74       A     G.p     Ken                     1765650.25     6.25
## 75       A     G.p     Ken                     1968265.85     6.29
## 76       A     G.p     Ken                     1961504.95     6.29
## 77       A     G.p     Ken                     3549700.00     6.55
## 78       A     G.p     Ken                     3329111.50     6.52
```

```
## 79       A     G.p     Ken                  3151626.50     6.50
## 80       A     G.p     Ken                   962698.10     5.98
## 81       A     G.p     Ken                  1143055.77     6.06
## 82       A     G.p     Ken                  1191733.62     6.08
## 83       A     G.p     Ken                  1015960.30     6.01
## 84       A     G.p     Ken                  1205362.82     6.08
## 85       A     G.p     Ken                  1133481.14     6.05
## 86       A     G.p     Ken                  1472527.87     6.17
## 87       A     G.p     Ken                  1308940.95     6.12
## 88       A     G.p     Ken                  1281185.22     6.11
## 89       A     G.p     Ken                  4105627.56     6.61
## 90       A     G.p     Ken                  3459869.64     6.54
## 91       A     G.p     Ken                  3122746.02     6.49
## 92       A     G.p     Ken                   953219.87     5.98
## 93       A     G.p     Ken                  1385815.69     6.14
## 94       A     G.p     Ken                  1019450.62     6.01
## 95       A     G.p     Ken                  3010949.92     6.48
## 96       A     G.p     Ken                  3137601.25     6.50
## 97       A     G.p     Ken                  3015783.94     6.48
## 98       A     G.p     Ken                    29382.30     4.47
## 99       A     G.p     Ken                    32657.98     4.51
## 100      A     G.p     Ken                    27542.41     4.44
## 101      A     G.p     Ken                  1130434.50     6.05
## 102      A     G.p     Ken                  1071464.00     6.03
## 103      A     G.p     Ken                  1115442.00     6.05
## 104      A     G.p     Ken                  1987645.10     6.30
## 105      A     G.p     Ken                  2014324.90     6.30
## 106      A     G.p     Ken                  1922851.30     6.28
## 107      A     G.p     Ken                  1427522.32     6.15
## 108      A     G.p     Ken                  1666099.34     6.22
## 109      A     G.p     Ken                  1353322.67     6.13
## 110      A     G.p     Tan                  1446373.96     6.16
## 111      A     G.p     Tan                  1610826.54     6.21
## 112      A     G.p     Tan                  1561400.90     6.19
## 113      A     G.p     Tan                  1518448.88     6.18
## 114      A     G.p     Tan                  1925225.12     6.28
## 115      A     G.p     Tan                  1662840.76     6.22
## 116      A     G.p     Tan                    81575.76     4.91
## 117      A     G.p     Tan                    96277.70     4.98
## 118      A     G.p     Tan                    98279.91     4.99
## 119      A     G.p     Tan                   952425.25     5.98
## 120      A     G.p     Tan                  1186677.01     6.07
## 121      A     G.p     Tan                  1273054.06     6.10
## 122      A     G.p     Tan                  1088968.62     6.04
## 123      A     G.p     Tan                  1194766.35     6.08
## 124      A     G.p     Tan                  1155760.12     6.06
## 125      A     G.p     Tan                  1828842.13     6.26
## 126      A     G.p     Tan                  1987235.76     6.30
## 127      A     G.p     Tan                  1811666.91     6.26
## 128      A     G.p     Tan                  1053273.92     6.02
```

```
## 129      A     G.p     Tan                  3315587.63     6.52
## 130      A     G.p     Tan                  1656557.58     6.22
## 131      A     G.p     Tan                   661127.46     5.82
## 132      A     G.p     Tan                   768632.08     5.89
## 133      A     G.p     Tan                   684498.03     5.84
## 134      A     G.p     Tan                  1811973.66     6.26
## 135      A     G.p     Tan                  1956220.20     6.29
## 136      A     G.p     Tan                  2317824.54     6.37
## 137      A     G.p     Tan                   909065.20     5.96
## 138      A     G.p     Tan                  1013218.39     6.01
## 139      A     G.p     Tan                  1032482.08     6.01
## 140      A     G.p     Tan                  1063799.07     6.03
## 141      A     G.p     Tan                   565663.17     5.75
## 142      A     G.p     Tan                  1195693.09     6.08
## 143      A     G.p     Tan                  1336170.69     6.13
## 144      A     G.p     Tan                   624448.61     5.80
## 145      A     G.p     Tan                   460994.06     5.66
## 146      A     G.p     Tan                   474771.75     5.68
## 147      A     G.p     Tan                   471792.79     5.67
## 148      A     G.p     Tan                   543356.45     5.74
## 149      A     G.p     Tan                   462562.66     5.67
## 150      A     G.p     Tan                   468385.63     5.67
## 151      A     G.p     Tan                   800831.26     5.90
## 152      A     G.p     Tan                   860329.81     5.93
## 153      A     G.p     Tan                  1046502.69     6.02
## 154      A     G.p     Tan                  1901818.67     6.28
## 155      A     G.p     Tan                  2063108.97     6.31
## 156      A     G.p     Tan                  2297758.73     6.36
## 203      C     G.p     Ken                   718805.85     5.86
## 204      C     G.p     Ken                   725343.15     5.86
## 205      C     G.p     Ken                   599202.98     5.78
## 206      C     G.p     Ken                   677917.76     5.83
## 207      C     G.p     Ken                   637347.20     5.80
## 208      C     G.p     Ken                   643047.98     5.81
## 209      C     G.p     Ken                   880761.89     5.94
## 210      C     G.p     Ken                   988591.31     6.00
## 211      C     G.p     Ken                   767819.86     5.89
## 212      C     G.p     Ken                   916317.90     5.96
## 213      C     G.p     Ken                  1005044.48     6.00
## 214      C     G.p     Ken                  1078852.43     6.03
## 215      C     G.p     Ken                   739683.64     5.87
## 216      C     G.p     Ken                   695705.76     5.84
## 217      C     G.p     Ken                   682878.87     5.83
## 218      C     G.p     Ken                   631131.07     5.80
## 219      C     G.p     Ken                   641502.40     5.81
## 220      C     G.p     Ken                   566131.46     5.75
## 221      C     G.p     Ken                  1015118.40     6.01
## 222      C     G.p     Ken                  1094571.76     6.04
## 223      C     G.p     Ken                   947443.84     5.98
## 224      C     G.p     Ken                   204534.77     5.31
```

```
## 225      C     G.p     Ken                  280568.34     5.45
## 226      C     G.p     Ken                  165776.91     5.22
## 227      C     G.p     Ken                 2924446.34     6.47
## 228      C     G.p     Ken                 2826128.98     6.45
## 229      C     G.p     Ken                 2171559.77     6.34
## 230      C     G.p     Ken                  897908.45     5.95
## 231      C     G.p     Ken                  898818.18     5.95
## 232      C     G.p     Ken                  973113.21     5.99
## 233      C     G.p     Ken                 1059270.91     6.03
## 234      C     G.p     Ken                  977397.96     5.99
## 235      C     G.p     Ken                 1060751.81     6.03
## 236      C     G.p     Ken                 2808715.95     6.45
## 237      C     G.p     Ken                 2968453.35     6.47
## 238      C     G.p     Ken                 2803391.37     6.45
## 239      C     G.p     Ken                  332666.77     5.52
## 240      C     G.p     Ken                  321241.25     5.51
## 241      C     G.p     Ken                  320209.27     5.51
## 242      C     G.p     Ken                 1200292.42     6.08
## 243      C     G.p     Ken                  971056.86     5.99
## 244      C     G.p     Ken                  908298.93     5.96
## 245      C     G.p     Ken                 2279974.49     6.36
## 246      C     G.p     Ken                 1883112.09     6.27
## 247      C     G.p     Ken                 1932719.89     6.29
## 248      C     G.p     Ken                  194752.82     5.29
## 249      C     G.p     Ken                  184438.27     5.27
## 250      C     G.p     Ken                  179193.58     5.25
## 251      C     G.p     Tan                 1210058.85     6.08
## 252      C     G.p     Tan                 1282992.80     6.11
## 253      C     G.p     Tan                 1551156.03     6.19
## 254      C     G.p     Tan                 1241956.64     6.09
## 255      C     G.p     Tan                 1661873.21     6.22
## 256      C     G.p     Tan                 1736841.36     6.24
## 257      C     G.p     Tan                  983613.85     5.99
## 258      C     G.p     Tan                 1210460.94     6.08
## 259      C     G.p     Tan                 1431819.79     6.16
## 260      C     G.p     Tan                 1293304.16     6.11
## 261      C     G.p     Tan                 1746187.17     6.24
## 262      C     G.p     Tan                 1950091.85     6.29
## 263      C     G.p     Tan                 1641382.66     6.22
## 264      C     G.p     Tan                 1549406.98     6.19
## 265      C     G.p     Tan                 1484065.92     6.17
## 266      C     G.p     Tan                  537760.05     5.73
## 267      C     G.p     Tan                  605603.38     5.78
## 268      C     G.p     Tan                  657568.48     5.82
## 269      C     G.p     Tan                  599201.28     5.78
## 270      C     G.p     Tan                  699494.40     5.84
## 271      C     G.p     Tan                  517363.20     5.71
## 272      C     G.p     Tan                  708694.56     5.85
## 273      C     G.p     Tan                  858284.28     5.93
## 274      C     G.p     Tan                  854924.70     5.93
```

```
## 275      C     G.p     Tan                    333963.04     5.52
## 276      C     G.p     Tan                    359125.40     5.56
## 277      C     G.p     Tan                    270383.12     5.43
## 278      C     G.p     Tan                    528792.52     5.72
## 279      C     G.p     Tan                    590464.75     5.77
## 280      C     G.p     Tan                    648716.88     5.81
## 281      C     G.p     Tan                    269764.32     5.43
## 282      C     G.p     Tan                    281597.65     5.45
## 283      C     G.p     Tan                    298947.26     5.48
## 284      C     G.p     Tan                      3249.22     3.51
## 285      C     G.p     Tan                      5522.06     3.74
## 286      C     G.p     Tan                      7960.32     3.90
## 287      C     G.p     Tan                   8036502.48     6.91
## 288      C     G.p     Tan                   7169820.84     6.86
## 289      C     G.p     Tan                   7373359.71     6.87
## 290      C     G.p     Tan                   1951057.33     6.29
## 291      C     G.p     Tan                   1641346.31     6.22
## 292      C     G.p     Tan                   1720707.21     6.24
## 293      C     G.p     Tan                   5444975.94     6.74
## 294      C     G.p     Tan                   4577024.47     6.66
## 295      C     G.p     Tan                   3491578.15     6.54
## 296      C     G.p     Tan                      2068.34     3.32
## 297      C     G.p     Tan                      3294.06     3.52
## 298      C     G.p     Tan                      1215.40     3.08
```

```
sup_fig2a<-ggplot(Gp,aes(x=Sample ,y=log_copy, fill=Sample)) +
  geom_boxplot() + geom_jitter(width=0.1,alpha=0.2)+ ylim(0, 8)
```

```
model1<-glm(log_copy ~ Sample, data = Gp)
summary(model1)
```

```
##
## Call:
## glm(formula = log_copy ~ Sample, data = Gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7415  -0.0785   0.1185   0.3365   1.0885
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.96350    0.06583  90.594   <2e-16 ***
## SampleC     -0.14204    0.09477  -1.499    0.136
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.4463103)
##
##     Null deviance: 88.926  on 198  degrees of freedom
## Residual deviance: 87.923  on 197  degrees of freedom
```

```
## AIC: 408.19
##
## Number of Fisher Scoring iterations: 2

tiff("sup_fig2a", width = 4, height = 4, units = 'in', res = 300)
plot(sup_fig2a+theme_tufte() + theme(axis.line = element_line(size = 1, colou
r = "black"))+ theme(legend.position = c(.95, .35),legend.justification = c("
right", "top"))) + xlab(expression(bolditalic("Infection type"))) + ylab( exp
ression (paste (bold("log10  "), bolditalic("Sodalis"), bold(" copy number"))
))
dev.off()

## png
##   2

model1<-glm(log_copy ~ Sample, data = Gp)
summary(model1)

##
## Call:
## glm(formula = log_copy ~ Sample, data = Gp)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7415  -0.0785   0.1185   0.3365   1.0885
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.96350    0.06583  90.594   <2e-16 ***
## SampleC     -0.14204    0.09477  -1.499    0.136
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.4463103)
##
##     Null deviance: 88.926  on 198  degrees of freedom
## Residual deviance: 87.923  on 197  degrees of freedom
## AIC: 408.19
##
## Number of Fisher Scoring iterations: 2

Anova(model1)

## Analysis of Deviance Table (Type II tests)
##
## Response: log_copy
##        LR Chisq Df Pr(>Chisq)
## Sample    2.246  1      0.134
```