

Logistic Regression Modeling (cleaned_1-OCT-modelling.csv)

Ziyan Zhao

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Attributes:

- 1: StageName (factor)
- 2: RecordType.Name 3: RICE_Supported___c
- 4: CreatedDate
- 5: Actual_Close_Date___c (factor)
- 6: Lead_Faculty___c
- 7: Lead_School___c
- 8: Parent_Opportunity___c (factor)
- 9: RecordType.Name.1
- 10: Industry
- 11: Industry_Sub_Type___c
- 12: Business_Type___c
- 13: Is_External___c (factor)
- 14: ParentId (factor)
- 15: CreatedYear
- 16: CreatedMonth

```
# Reading Data In
data <- read.csv("/Users/ChantelleChiu/Documents/GitHub/Project-90106-G28/Chantelle/cleaned_1-OCT-modelling.csv",
                header = TRUE, stringsAsFactors = T)
names(data) <- c("X1", "X2", "X3", "X4", "X5", "X6", "X7", "X8", "X9", "X10",
                "X11", "X12", "X13", "X14", "X15", "X16")

summary(data)
```

##	X1	X2
##	Min. :0.0000	Research Contract :2565
##	1st Qu.:0.0000	Custom Education (MSPACE Included):1105
##	Median :0.0000	Grants : 662
##	Mean :0.3737	Consultancy (Non-research) : 462

```

## 3rd Qu.:1.0000 Technology Transfer : 304
## Max. :1.0000 Competitive Bid : 89
## (Other) : 221
## X3 X4 X5
## Not supported : 413 2017-10-05T03:34:17.000Z: 6 Min. :0.0000
## RIC RE&D and BD&I:2649 2019-03-19T02:03:51.000Z: 6 1st Qu.:1.0000
## RIC-BD&I :2075 2019-05-29T02:49:22.000Z: 6 Median :1.0000
## RIC-RE&D : 271 2016-08-03T02:21:55.000Z: 5 Mean :0.9798
## 2017-07-20T06:46:12.000Z: 5 3rd Qu.:1.0000
## 2017-07-20T06:46:14.000Z: 5 Max. :1.0000
## (Other) :5375
## X6 X7 X8
## 0012e000002ZGfbAAG:1033 NotGiven :2397 Min. :0.00000
## 0012e000002ZLg7AAG: 874 0012e000002Zt0cAAC: 386 1st Qu.:0.00000
## NotGiven : 820 0012e000002Zt0mAAC: 368 Median :0.00000
## 0012e000002Zmo0AAC: 755 0012e000002Z3pPAAS: 190 Mean :0.09874
## 0012e000002ZmnxAAC: 598 0012e000002Zt10AAC: 190 3rd Qu.:0.00000
## 0012e000002ZLgJAAW: 272 0012e000002Zt0bAAC: 158 Max. :1.00000
## (Other) :1056 (Other) :1719
## X9 X10
## Administrative : 1 Services :2048
## Business Organization:5368 Health :1146
## University Department: 39 Public Administration : 693
## Defence : 386
## Agriculture & Horticulture : 212
## Technology: IT & Telephone Services: 205
## (Other) : 718
## X11
## Education :1210
## Public Administration : 693
## Health Care & Healthy Aging: 587
## Defence : 386
## Community : 281
## Pharmaceuticals : 278
## (Other) :1973
## X12 X13 X14
## Government: Australia: Local & State :1126 Min. :0.0000 Min. :0.0000
## Government: Australia: Federal :1007 1st Qu.:1.0000 1st Qu.:0.0000
## SME (small to medium enterprise) : 756 Median :1.0000 Median :0.0000
## Not for profit : 689 Mean :0.9926 Mean :0.1627
## Multinational / Other Large Corporate: 680 3rd Qu.:1.0000 3rd Qu.:0.0000
## University : 446 Max. :1.0000 Max. :1.0000
## (Other) : 704
## X15 X16
## Min. :2015 Min. : 1.000

```

```
## 1st Qu.:2017    1st Qu.: 4.000
## Median :2018    Median  : 6.000
## Mean   :2018    Mean    : 6.323
## 3rd Qu.:2019    3rd Qu.: 9.000
## Max.   :2020    Max.    :12.000
##
```

Build regression model with 1 predictor (“StageName”) and 15 features (X2-X16)

```
# Reading Data In
data <- read.csv("/Users/ChantelleChiu/Documents/GitHub/Project-90106-G28/Chantelle/clean_data.csv",
                 header = TRUE, stringsAsFactors = T)
names(data) <- c("X1", "X2", "X3", "X4", "X5", "X6", "X7", "X8", "X9", "X10",
                 "X11", "X12", "X13", "X14", "X15", "X16", "X17")

summary(data)
```

```
##           X1                      X2
## Min.      :0.0000    Research Contract      :2565
## 1st Qu.:0.0000    Custom Education (MSPACE Included):1105
## Median :0.0000    Grants                      : 662
## Mean     :0.3737    Consultancy (Non-research)    : 462
## 3rd Qu.:1.0000    Technology Transfer                : 304
## Max.     :1.0000    Competitive Bid                    :  89
##                                     (Other)                : 221
##           X3           X4           X5
## Not supported      : 413    Min.      :0.0000    0012e000002ZGfbAAG:1033
## RIC RE&D and BD&I:2649    1st Qu.:1.0000    0012e000002ZLg7AAG: 874
## RIC-BD&I           :2075    Median :1.0000    NotGiven           : 820
## RIC-RE&D           : 271    Mean   :0.9798    0012e000002Zmo0AAC: 755
##                                     3rd Qu.:1.0000    0012e000002ZmnxAAC: 598
##                                     Max.    :1.0000    0012e000002ZLgJAAW: 272
##                                     (Other)                :1056
##           X6           X7
## NotGiven           :2397    Min.      :0.00000
## 0012e000002Zt0cAAC: 386    1st Qu.:0.00000
## 0012e000002Zt0mAAC: 368    Median :0.00000
## 0012e000002Z3pPAAS: 190    Mean     :0.09874
## 0012e000002Zt10AAC: 190    3rd Qu.:0.00000
## 0012e000002Zt0bAAC: 158    Max.     :1.00000
## (Other)            :1719
##           X8           X9
## Services            :2049    Education           :1210
## Health              :1146    Public Administration : 693
## Public Administration : 693    Health Care & Healthy Aging: 587
```

```

## Defence : 386 Defence : 386
## Agriculture & Horticulture : 212 Community : 281
## Technology: IT & Telephone Services: 205 Pharmaceuticals : 278
## (Other) : 717 (Other) :1973
## X10 X11 X12
## Government: Australia: Local & State :1126 Min. :0.0000 Min. :0.0000
## Government: Australia: Federal :1007 1st Qu.:1.0000 1st Qu.:0.0000
## SME (small to medium enterprise) : 756 Median :1.0000 Median :0.0000
## Not for profit : 689 Mean :0.9926 Mean :0.1627
## Multinational / Other Large Corporate: 680 3rd Qu.:1.0000 3rd Qu.:0.0000
## University : 446 Max. :1.0000 Max. :1.0000
## (Other) : 704
## X13 X14 X15 X16
## Min. :2015 Min. : 1.000 Min. :2015 Min. : 1.000
## 1st Qu.:2019 1st Qu.: 6.000 1st Qu.:2017 1st Qu.: 4.000
## Median :2019 Median :11.000 Median :2018 Median : 6.000
## Mean :2019 Mean : 8.523 Mean :2018 Mean : 6.323
## 3rd Qu.:2019 3rd Qu.:11.000 3rd Qu.:2019 3rd Qu.: 9.000
## Max. :2050 Max. :12.000 Max. :2020 Max. :12.000
##
## X17
## Min. : -1.000
## 1st Qu.: 0.000
## Median : 1.000
## Mean : 1.108
## 3rd Qu.: 2.000
## Max. :31.000
##

```

```

mod1 <- glm(factor(X1)~X2+X3+factor(X4)+X5+X6+factor(X7)+X8+X9+X10+factor(X11)+factor(X12),
            family = "binomial", data = data)

```

```

# 10-fold cross_validation

```

```

train_control <- trainControl(method = "cv", number = 10)

```

```

# train the model on data set

```

```

model <- train(factor(X1)~X2+X3+factor(X4)+X5+X6+factor(X7)+X8+X9+X10+factor(X11)+factor(X12),
               data = data,
               trControl = train_control,
               method = "glm",
               family="binomial")

```

```

summary(model)

```

```

##

```

```

## Call:

```

```

## NULL
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -4.1100   -0.8080   -0.2350    0.8334    3.2318
##
## Coefficients: (18 not defined because of singularities)
##                                     Estimate Std. Error
## (Intercept)                       -4.173e+02  1.143e+02
## `X2Competitive Bid`                 -4.071e+00  8.796e-01
## `X2Consultancy (Non-research)`       -2.292e+00  7.443e-01
## `X2Custom Education (MSPACE Included)` -2.862e+00  7.400e-01
## X2Grants                           -2.849e+00  7.521e-01
## X2Internship                       -2.172e+00  8.454e-01
## X2Panel                            -2.174e+00  8.015e-01
## `X2Parent Grant`                    1.039e+01  2.124e+00
## X2Philanthropic                     -2.218e+00  9.230e-01
## `X2Research Contract`               -2.450e+00  7.401e-01
## X2Sponsorship                      -1.723e+00  8.916e-01
## `X2Technology Transfer`             -1.913e+00  7.503e-01
## `X3RIC RE&D and BD&I`                2.346e+00  2.365e-01
## `X3RIC-BD&I`                        1.177e+00  2.207e-01
## `X3RIC-RE&D`                        9.451e-01  2.963e-01
## `factor(X4)1`                       1.970e+00  1.136e+00
## X50012e000002ZGfbAAG                -9.641e-01  8.307e-01
## X50012e000002ZLg7AAG                 -8.888e-01  8.307e-01
## X50012e000002ZLgIAAW                 -1.392e+00  8.307e-01
## X50012e000002ZLgJAAW                 -2.246e+00  9.765e-01
## X50012e000002ZmnxAAC                 -2.327e+00  8.832e-01
## X50012e000002ZmnzAAC                 -2.002e+00  9.734e-01
## X50012e000002Zmo0AAC                  1.754e-01  8.143e-01
## X50012e000002ZmOUAA0                 -8.863e+12  3.624e+14
## X50012e000002ZmOZAA0                 -7.629e-01  8.792e-01
## X50012e000002ZNYOAA4                 -2.031e+00  9.547e-01
## X50012e000002Zt0MAAS                 -4.504e+15  3.875e+07
## X50012e000002Zt1iAAC                 -4.504e+15  6.715e+07
## X50012e000002Zt1RAAS                 -1.161e-01  8.361e-01
## X50012e000002Zt1zAAC                 -4.504e+15  6.714e+07
## X5NotGiven                          -4.021e+00  8.576e-01
## X60012e000002YlvyAAC                 -7.667e-01  1.194e+00
## X60012e000002Ym9QAAS                 -1.673e+00  1.095e+00
## X60012e000002YmBqAAK                 -1.890e+00  1.511e+00
## X60012e000002YmMXAA0                 -2.230e-01  1.086e+00
## X60012e000002YmNRAA0                 -5.419e-01  1.126e+00
## X60012e000002YmVtAAK                 -1.019e+00  1.071e+00

```

## X60012e000002YneJAAS	4.373e-01	9.936e-01
## X60012e000002YnERAAO	-5.829e-01	1.145e+00
## X60012e000002YnrYAAS	-3.007e+00	1.132e+00
## X60012e000002YoY7AAK	-2.098e+00	1.086e+00
## X60012e000002YoYUAAO	-8.378e-01	8.502e-01
## X60012e000002Z30uAAK	-2.385e+00	1.265e+00
## X60012e000002Z3p1AAC	-3.694e-01	1.144e+00
## X60012e000002Z3pPAAS	-1.454e+00	1.016e+00
## X60012e000002Z4IxAAK	-1.127e+00	1.234e+00
## X60012e000002Z4JyAAK	-7.218e-01	1.071e+00
## X60012e000002Z4oNAAS	1.108e+00	1.326e+00
## X60012e000002Z51dAAC	2.005e-01	1.013e+00
## X60012e000002Z51eAAC	-1.686e+00	1.085e+00
## X60012e000002Z67WAAS	-3.540e-01	1.146e+00
## X60012e000002Z6AWAAO	-1.279e+00	1.039e+00
## X60012e000002ZLgBAAW	-1.899e+00	1.066e+00
## X60012e000002ZLgOAAW	4.512e+15	3.624e+14
## X60012e000002ZlmBAAS	-2.568e-01	1.467e+00
## X60012e000002Zt0bAAC	-1.488e+00	1.019e+00
## X60012e000002Zt0cAAC	-1.291e+00	1.010e+00
## X60012e000002Zt0gAAC	4.504e+15	4.745e+07
## X60012e000002Zt0hAAC	2.026e-01	1.143e+00
## X60012e000002Zt0jAAC	-2.492e+00	1.163e+00
## X60012e000002Zt0mAAC	-1.334e+00	1.008e+00
## X60012e000002Zt0nAAC	-3.129e-01	1.139e+00
## X60012e000002Zt0rAAC	-1.534e+00	1.302e+00
## X60012e000002Zt0XAAS	-1.270e+00	1.150e+00
## X60012e000002Zt0YAAS	7.933e-01	8.588e-01
## X60012e000002Zt0ZAAS	-1.087e+01	1.686e+02
## X60012e000002Zt10AAC	-7.493e-01	1.015e+00
## X60012e000002Zt1FAAS	-3.283e-01	1.026e+00
## X60012e000002Zt1MAAS	-1.553e+01	4.418e+02
## X60012e000002Zt1PAAS	-1.029e+00	1.089e+00
## X60012e000002Zt1VAAS	4.265e-01	1.471e+00
## X60012e000002Zt20AAC	-1.012e+00	1.097e+00
## X60012e000002Zt21AAC	-1.202e+00	1.151e+00
## X60012e000002Zt25AAC	8.863e+12	3.624e+14
## X60012e000002Zt28AAC	8.862e+12	3.624e+14
## X60012e000003jZXsAAM	1.161e+01	1.354e+03
## X6NotGiven	-2.096e+00	9.820e-01
## `factor(X7)1`	-4.575e-01	1.659e-01
## `X8Agriculture & Horticulture`	-2.449e+00	1.764e+00
## `X8Aquaculture & Fisheries`	-1.545e+00	2.153e+00
## `X8Construction & Construction Materials`	-1.999e+00	1.766e+00
## X8Defence	-1.097e+00	1.759e+00

## X8Education	7.494e+12	1.852e+13
## `X8Energy & Utilities`	-1.793e+00	1.762e+00
## `X8Forestry & Paper`	-1.284e+00	2.141e+00
## X8Health	-1.473e+00	1.875e+00
## `X8Manufacturing & R&D`	-2.507e+00	1.825e+00
## `X8Materials: Chemicals & Industrial Metals`	-2.953e+00	1.805e+00
## `X8Mining & Refining`	-2.538e+00	1.783e+00
## `X8Mining Equipment and Technology Services`	-3.308e+00	1.953e+00
## `X8Public Administration`	-2.238e+00	1.757e+00
## X8Services	7.494e+12	1.852e+13
## `X8Technology: IT & Telephone Services`	-2.343e+00	1.763e+00
## X8Transportation	-4.504e+15	6.711e+07
## `X8Transportation & Logistics`	-2.473e+00	1.778e+00
## X8Veterinary	-1.832e+00	1.802e+00
## X9Aerospace	6.616e-01	1.040e+00
## `X9Agriculture & Horticulture`	NA	NA
## `X9Aquaculture & Fisheries`	NA	NA
## `X9Automobiles, Heavy Vehicles & Industrial Machinery`	-1.406e-01	7.122e-01
## `X9Biotechnology (non-Pharma)`	-1.654e-01	6.976e-01
## `X9Business & Professional`	-7.494e+12	1.852e+13
## X9Community	-7.494e+12	1.852e+13
## `X9Construction & Construction Materials`	NA	NA
## `X9Consumer Goods`	7.360e-02	8.507e-01
## X9Defence	NA	NA
## X9Diagnostics	-9.049e-01	7.491e-01
## X9Education	-7.494e+12	1.852e+13
## `X9Energy & Utilities`	NA	NA
## `X9Engineering and Scientific`	-7.494e+12	1.852e+13
## `X9Entertainment & Creative Industries`	-7.494e+12	1.852e+13
## X9Environmental	-7.494e+12	1.852e+13
## `X9Financial & Insurance`	-7.494e+12	1.852e+13
## `X9Food & Beverage`	-2.350e-01	6.334e-01
## `X9Forestry & Paper`	NA	NA
## `X9Hardware, Electronics and Electrical Equipment`	NA	NA
## `X9Health Care & Healthy Aging`	-6.134e-01	6.889e-01
## `X9Materials: Chemicals & Industrial Metals`	NA	NA
## `X9Medical Devices`	-5.190e-01	7.698e-01
## `X9Mining & Refining`	NA	NA
## `X9Mining Equipment and Technology Services`	NA	NA
## X9Pharmaceuticals	-1.255e+00	6.876e-01
## `X9Public Administration`	NA	NA
## `X9Research Tools/Consumables`	NA	NA
## `X9Retail, Travel, Hospitality & Leisure`	-7.494e+12	1.852e+13
## X9Services	-7.494e+12	1.852e+13
## `X9Technology: IT & Telephone Services`	NA	NA

## X9Transportation	NA	NA
## `X9Transportation & Logistics`	NA	NA
## X9Veterinary	NA	NA
## `X10Government: Australia: Federal`	-2.901e-01	4.452e-01
## `X10Government: Australia: Local & State`	-2.166e-01	4.431e-01
## `X10Government: International`	-6.149e-01	4.746e-01
## `X10Large Australian Corporate`	-3.640e-01	4.550e-01
## `X10Multinational / Other Large Corporate`	-8.287e-01	4.462e-01
## `X10Not for profit`	-1.831e-01	4.457e-01
## `X10PFRO (Publicly-Funded Research Organisation)`	-2.130e+00	5.877e-01
## `X10RDC (Rural Research and Development Corporations)`	-4.359e-01	6.276e-01
## `X10SME (small to medium enterprise)`	-5.141e-01	4.428e-01
## X10University	4.023e-01	4.711e-01
## `factor(X11)1`	NA	NA
## `factor(X12)1`	-3.478e-01	1.103e-01
## X13	-1.809e-01	4.603e-02
## X14	-1.593e-01	1.234e-02
## X15	3.902e-01	4.846e-02
## X16	1.651e-02	1.163e-02
## X17	NA	NA
##	z value	Pr(> z)
## (Intercept)	-3.650e+00	0.000262 ***
## `X2Competitive Bid`	-4.628e+00	3.69e-06 ***
## `X2Consultancy (Non-research)`	-3.079e+00	0.002074 **
## `X2Custom Education (MSPACE Included)`	-3.867e+00	0.000110 ***
## X2Grants	-3.788e+00	0.000152 ***
## X2Internship	-2.570e+00	0.010177 *
## X2Panel	-2.712e+00	0.006684 **
## `X2Parent Grant`	4.894e+00	9.89e-07 ***
## X2Philanthropic	-2.403e+00	0.016274 *
## `X2Research Contract`	-3.311e+00	0.000930 ***
## X2Sponsorship	-1.932e+00	0.053348 .
## `X2Technology Transfer`	-2.550e+00	0.010773 *
## `X3RIC RE&D and BD&I`	9.922e+00	< 2e-16 ***
## `X3RIC-BD&I`	5.335e+00	9.56e-08 ***
## `X3RIC-RE&D`	3.190e+00	0.001424 **
## `factor(X4)1`	1.733e+00	0.083038 .
## X50012e000002ZGfbAAG	-1.161e+00	0.245823
## X50012e000002ZLg7AAG	-1.070e+00	0.284649
## X50012e000002ZLgIAAW	-1.675e+00	0.093918 .
## X50012e000002ZLgJAAW	-2.300e+00	0.021471 *
## X50012e000002ZmnxAAC	-2.635e+00	0.008407 **
## X50012e000002ZmnzAAC	-2.057e+00	0.039722 *
## X50012e000002ZmoOAAAC	2.150e-01	0.829399
## X50012e000002ZmOUAAO	-2.400e-02	0.980487

## X50012e000002Zm0ZAAO	-8.680e-01 0.385561
## X50012e000002ZNYOAAA4	-2.127e+00 0.033429 *
## X50012e000002Zt0MAAS	-1.162e+08 < 2e-16 ***
## X50012e000002Zt1iAAC	-6.707e+07 < 2e-16 ***
## X50012e000002Zt1RAAS	-1.390e-01 0.889610
## X50012e000002Zt1zAAC	-6.708e+07 < 2e-16 ***
## X5NotGiven	-4.689e+00 2.75e-06 ***
## X60012e000002YlvyAAC	-6.420e-01 0.520737
## X60012e000002Ym9QAAS	-1.528e+00 0.126576
## X60012e000002YmBqAAK	-1.251e+00 0.211102
## X60012e000002YmMXAAO	-2.050e-01 0.837291
## X60012e000002YmNRAAO	-4.810e-01 0.630308
## X60012e000002YmVtAAK	-9.520e-01 0.341136
## X60012e000002YneJAAS	4.400e-01 0.659809
## X60012e000002YnERAAO	-5.090e-01 0.610751
## X60012e000002YnrYAAS	-2.656e+00 0.007915 **
## X60012e000002YoY7AAK	-1.932e+00 0.053320 .
## X60012e000002YoYUAAO	-9.850e-01 0.324391
## X60012e000002Z30uAAK	-1.886e+00 0.059323 .
## X60012e000002Z3p1AAC	-3.230e-01 0.746796
## X60012e000002Z3pPAAS	-1.431e+00 0.152305
## X60012e000002Z4IxAAK	-9.130e-01 0.361175
## X60012e000002Z4JyAAK	-6.740e-01 0.500535
## X60012e000002Z4oNAAS	8.360e-01 0.403347
## X60012e000002Z51dAAC	1.980e-01 0.843100
## X60012e000002Z51eAAC	-1.554e+00 0.120189
## X60012e000002Z67WAAS	-3.090e-01 0.757435
## X60012e000002Z6AWAAO	-1.231e+00 0.218200
## X60012e000002ZLgBAAW	-1.782e+00 0.074717 .
## X60012e000002ZLgOAAW	1.245e+01 < 2e-16 ***
## X60012e000002ZlmBAAS	-1.750e-01 0.861030
## X60012e000002Zt0bAAC	-1.460e+00 0.144215
## X60012e000002Zt0cAAC	-1.277e+00 0.201460
## X60012e000002Zt0gAAC	9.490e+07 < 2e-16 ***
## X60012e000002Zt0hAAC	1.770e-01 0.859328
## X60012e000002Zt0jAAC	-2.142e+00 0.032195 *
## X60012e000002Zt0mAAC	-1.324e+00 0.185523
## X60012e000002Zt0nAAC	-2.750e-01 0.783617
## X60012e000002Zt0rAAC	-1.178e+00 0.238875
## X60012e000002Zt0XAAS	-1.104e+00 0.269653
## X60012e000002Zt0YAAS	9.240e-01 0.355614
## X60012e000002Zt0ZAAS	-6.400e-02 0.948592
## X60012e000002Zt10AAC	-7.380e-01 0.460338
## X60012e000002Zt1FAAS	-3.200e-01 0.748977
## X60012e000002Zt1MAAS	-3.500e-02 0.971952

## X60012e000002Zt1PAAS	-9.450e-01	0.344607	
## X60012e000002Zt1VAAS	2.900e-01	0.771861	
## X60012e000002Zt20AAC	-9.220e-01	0.356369	
## X60012e000002Zt21AAC	-1.045e+00	0.295986	
## X60012e000002Zt25AAC	2.400e-02	0.980487	
## X60012e000002Zt28AAC	2.400e-02	0.980490	
## X60012e000003jZXsAAM	9.000e-03	0.993159	
## X6NotGiven	-2.135e+00	0.032785	*
## `factor(X7)1`	-2.758e+00	0.005824	**
## `X8Agriculture & Horticulture`	-1.388e+00	0.165005	
## `X8Aquaculture & Fisheries`	-7.180e-01	0.472788	
## `X8Construction & Construction Materials`	-1.132e+00	0.257580	
## X8Defence	-6.240e-01	0.532865	
## X8Education	4.050e-01	0.685667	
## `X8Energy & Utilities`	-1.018e+00	0.308881	
## `X8Forestry & Paper`	-5.990e-01	0.548872	
## X8Health	-7.860e-01	0.432089	
## `X8Manufacturing & R&D`	-1.374e+00	0.169441	
## `X8Materials: Chemicals & Industrial Metals`	-1.636e+00	0.101742	
## `X8Mining & Refining`	-1.423e+00	0.154773	
## `X8Mining Equipment and Technology Services`	-1.694e+00	0.090348	.
## `X8Public Administration`	-1.273e+00	0.202875	
## X8Services	4.050e-01	0.685667	
## `X8Technology: IT & Telephone Services`	-1.329e+00	0.183767	
## X8Transportation	-6.711e+07	< 2e-16	***
## `X8Transportation & Logistics`	-1.391e+00	0.164375	
## X8Veterinary	-1.017e+00	0.309250	
## X9Aerospace	6.360e-01	0.524610	
## `X9Agriculture & Horticulture`	NA	NA	
## `X9Aquaculture & Fisheries`	NA	NA	
## `X9Automobiles, Heavy Vehicles & Industrial Machinery`	-1.970e-01	0.843551	
## `X9Biotechnology (non-Pharma)`	-2.370e-01	0.812547	
## `X9Business & Professional`	-4.050e-01	0.685667	
## X9Community	-4.050e-01	0.685667	
## `X9Construction & Construction Materials`	NA	NA	
## `X9Consumer Goods`	8.700e-02	0.931053	
## X9Defence	NA	NA	
## X9Diagnostics	-1.208e+00	0.227081	
## X9Education	-4.050e-01	0.685667	
## `X9Energy & Utilities`	NA	NA	
## `X9Engineering and Scientific`	-4.050e-01	0.685667	
## `X9Entertainment & Creative Industries`	-4.050e-01	0.685667	
## X9Environmental	-4.050e-01	0.685667	
## `X9Financial & Insurance`	-4.050e-01	0.685667	
## `X9Food & Beverage`	-3.710e-01	0.710615	

```

## `X9Forestry & Paper` NA NA
## `X9Hardware, Electronics and Electrical Equipment` NA NA
## `X9Health Care & Healthy Aging` -8.900e-01 0.373289
## `X9Materials: Chemicals & Industrial Metals` NA NA
## `X9Medical Devices` -6.740e-01 0.500166
## `X9Mining & Refining` NA NA
## `X9Mining Equipment and Technology Services` NA NA
## X9Pharmaceuticals -1.826e+00 0.067867 .
## `X9Public Administration` NA NA
## `X9Research Tools/Consumables` NA NA
## `X9Retail, Travel, Hospitality & Leisure` -4.050e-01 0.685667
## X9Services -4.050e-01 0.685667
## `X9Technology: IT & Telephone Services` NA NA
## X9Transportation NA NA
## `X9Transportation & Logistics` NA NA
## X9Veterinary NA NA
## `X10Government: Australia: Federal` -6.520e-01 0.514560
## `X10Government: Australia: Local & State` -4.890e-01 0.624909
## `X10Government: International` -1.296e+00 0.195081
## `X10Large Australian Corporate` -8.000e-01 0.423721
## `X10Multinational / Other Large Corporate` -1.857e+00 0.063286 .
## `X10Not for profit` -4.110e-01 0.681198
## `X10PFRO (Publicly-Funded Research Organisation)` -3.624e+00 0.000290 ***
## `X10RDC (Rural Research and Development Corporations)` -6.950e-01 0.487296
## `X10SME (small to medium enterprise)` -1.161e+00 0.245638
## X10University 8.540e-01 0.393143
## `factor(X11)1` NA NA
## `factor(X12)1` -3.153e+00 0.001616 **
## X13 -3.930e+00 8.49e-05 ***
## X14 -1.291e+01 < 2e-16 ***
## X15 8.052e+00 8.13e-16 ***
## X16 1.420e+00 0.155531
## X17 NA NA
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 7148.3 on 5407 degrees of freedom
## Residual deviance: 5146.3 on 5279 degrees of freedom
## AIC: 5404.3
##
## Number of Fisher Scoring iterations: 25

```