# Final Project EDA

```
library(tidyverse)
## -- Attaching packages ------ tidyverse 1.3.0 --
## v ggplot2 3.3.3
                   v purrr
                              0.3.4
## v tibble 3.0.6
                     v dplyr
                              1.0.4
## v tidyr
           1.1.2
                     v stringr 1.4.0
## v readr
           1.4.0
                   v forcats 0.5.1
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()
                   masks stats::lag()
library(tidyverse)
library(dplyr)
library(ggplot2)
library(mice)
##
## Attaching package: 'mice'
## The following object is masked from 'package:stats':
##
##
      filter
## The following objects are masked from 'package:base':
##
##
      cbind, rbind
member = read_csv('data/member-data-2020-stat149.csv')
##
## -- Column specification ------
## cols(
    .default = col_character(),
##
##
    JSMtot = col_double(),
    Age = col_double(),
##
    AgeJoinedASA = col_double()
## i Use `spec()` for the full column specifications.
head(member)
## # A tibble: 6 x 37
    AnySection JSMtot USA.CAN DontPublish MEMTYPE
                                                 Age AgeJoinedASA Gender
    <chr>
             <dbl> <chr>
                            <chr>
                                               <dbl>
                                                           <dbl> <chr>
                                       <chr>
                   0 Yes
                                                              24 M
## 1 Yes
                            No
                                       ILIFF
                                                 76
## 2 No
                   0 Yes
                                       ILIFF
                                                              53 M
                            No
                                                 83
## 3 No
                   0 No
                            No
                                       ILIFA
                                                 69
                                                              24 M
## 4 Yes
                                                              24 M
                   0 Yes
                            No
                                       ISEN
                                                 71
## 5 Yes
                   5 No
                                       ILIFF
                                                 74
                                                              27 M
                            No
```

```
IREG
                     3 No
                               No
                                                      74
## # ... with 29 more variables: EmploymentCategory <chr>, InChapter <chr>,
      P.SEC.BE <chr>, P.SEC.BIOM <chr>, P.SEC.BIOP <chr>, P.SEC.CNSL <chr>,
      P.SEC.COMP <chr>, P.SEC.EDUC <chr>, P.SEC.ENVR <chr>, P.SEC.EPI <chr>,
      P.SEC.GOVT <chr>, P.SEC.GRPH <chr>, P.SEC.HPSS <chr>, P.SEC.MDD <chr>,
## #
      P.SEC.MHS <chr>, P.SEC.MKTG <chr>, P.SEC.NPAR <chr>, P.SEC.QP <chr>,
      P.SEC.SBSS <chr>, P.SEC.SDNS <chr>, P.SEC.SGG <chr>, P.SEC.SI <chr>,
      P.SEC.SIS <chr>, P.SEC.SLDM <chr>, P.SEC.SOC <chr>, P.SEC.SPES <chr>,
      P.SEC.SRMS <chr>, P.SEC.SSPA <chr>, P.SEC.TSHS <chr>
dim(member)
## [1] 17594
                37
member %>% count(MEMTYPE)
## # A tibble: 14 x 2
     MEMTYPE
## * <chr>
              <int>
   1 I2YC
##
                154
## 2 ICREP
                  8
## 3 IDEV
                226
## 4 IFAM
                111
## 5 IFREP
                31
## 6 IK12
                318
## 7 ILIFA
                373
## 8 ILIFF
                306
## 9 ILIFR
                  2
## 10 IPGRD
               1551
## 11 IREG
               8255
## 12 ISEN
               1518
## 13 ISREP
                 21
## 14 ISTU
               4720
summary(member)
                           JSMtot
                                          USA.CAN
                                                           DontPublish
##
     AnySection
##
  Length: 17594
                              :0.0000
                                        Length: 17594
                                                           Length: 17594
                       Min.
  Class :character
                       1st Qu.:0.0000
                                        Class :character
                                                           Class : character
  Mode :character
                                        Mode :character
##
                       Median :0.0000
                                                           Mode : character
##
                       Mean
                              :0.9689
##
                       3rd Qu.:1.0000
##
                       Max.
                              :5.0000
##
##
     MEMTYPE
                                         AgeJoinedASA
                                                             Gender
                            Age
                       Min. : 11.00
                                        Min. : 6.00
##
   Length: 17594
                                                         Length: 17594
   Class :character
                       1st Qu.: 34.00
                                        1st Qu.: 26.00
                                                         Class : character
   Mode :character
                       Median : 47.00
                                        Median : 30.00
                                                         Mode :character
##
                              : 48.47
                                              : 32.67
##
                       Mean
                                        Mean
##
                       3rd Qu.: 61.00
                                        3rd Qu.: 37.00
##
                       Max.
                              :105.00
                                        Max.
                                               :115.00
##
                       NA's
                              :3399
                                        NA's
                                              :3400
## EmploymentCategory InChapter
                                            P.SEC.BE
                                                              P.SEC.BIOM
## Length:17594
                       Length: 17594
                                          Length: 17594
                                                             Length: 17594
                                          Class :character
## Class:character
                       Class : character
                                                             Class : character
```

Mode :character

## Mode :character

Mode :character

Mode :character

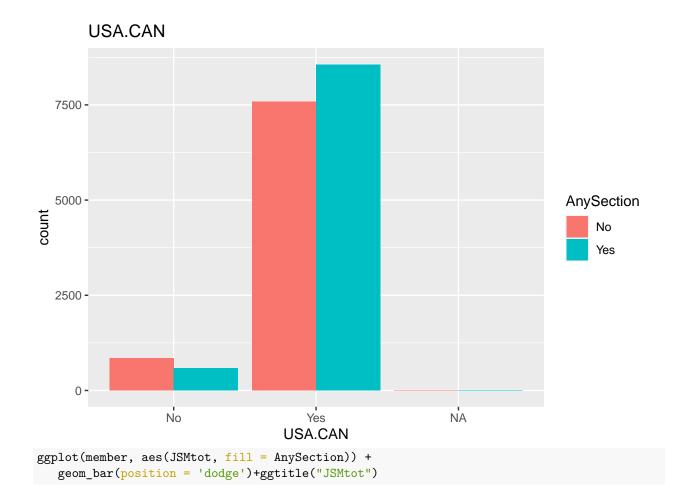
##				
## ##				
##				
##	P.SEC.BIOP	P.SEC.CNSL	P.SEC.COMP	P.SEC.EDUC
## ##	Length:17594 Class :character	Length:17594 Class:character	Length:17594 Class :character	Length:17594 Class:character
##	Mode : character	Mode :character	Mode :character	Mode : character
##				
##				
## ##				
##	P.SEC.ENVR	P.SEC.EPI	P.SEC.GOVT	P.SEC.GRPH
##	Length: 17594	Length: 17594	Length: 17594	Length: 17594
##	Class :character	Class :character	Class :character	Class :character
## ##	Mode :character	Mode :character	Mode :character	Mode :character
##				
##				
##				
## ##	P.SEC.HPSS Length:17594	P.SEC.MDD Length:17594	P.SEC.MHS Length:17594	P.SEC.MKTG Length:17594
##	Class : character	Class :character	Class : character	Class : character
##	Mode :character	Mode :character	Mode :character	Mode :character
##				
## ##				
##				
##	P.SEC.NPAR	P.SEC.QP	P.SEC.SBSS	P.SEC.SDNS
##	Length: 17594	Length: 17594	Length: 17594	Length: 17594
## ##	Class :character Mode :character			
##	node : ondractor	node idial de lei	node .character	node : ondractor
##				
##				
## ##	P.SEC.SGG	P.SEC.SI	P.SEC.SIS	P.SEC.SLDM
##	Length: 17594	Length: 17594	Length: 17594	Length: 17594
##	Class :character	Class :character	Class :character	Class :character
## ##	Mode :character	Mode :character	Mode :character	Mode :character
##				
##				
##	D 000	- c-c cc	- a-a a-ua	
## ##	P.SEC.SOC Length:17594	P.SEC.SPES Length:17594	P.SEC.SRMS Length:17594	P.SEC.SSPA Length:17594
##	Class : character	Class :character	Class :character	Class : character
##	Mode :character	Mode :character	Mode :character	Mode :character
##				
## ##				
##				
##	P.SEC.TSHS			
##	Length: 17594			

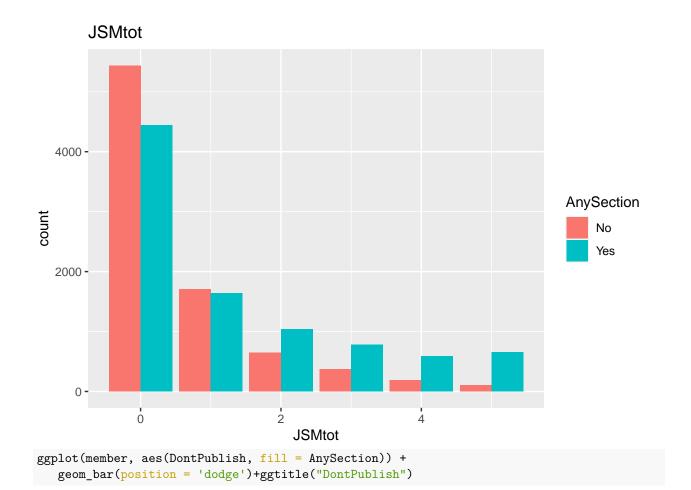
```
Class : character
##
    Mode : character
##
##
##
##
member %>%
  count(AnySection)
## # A tibble: 2 x 2
     AnySection
## * <chr>
                 <int>
## 1 No
                  8447
## 2 Yes
                 9147
member[duplicated(member[,]),]
```

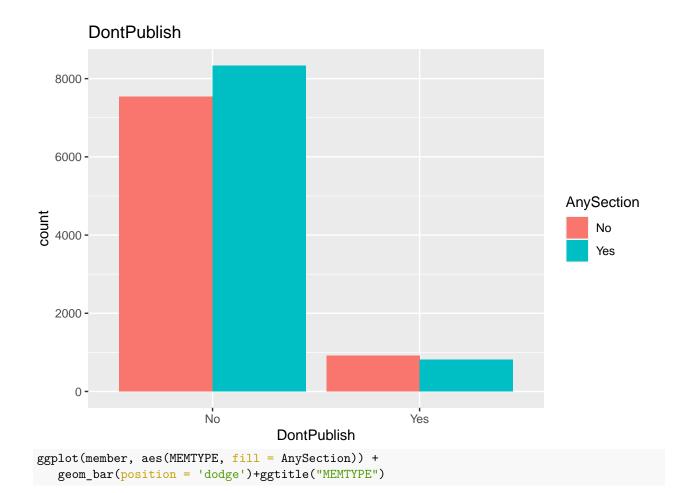
```
## # A tibble: 3,656 x 37
##
      AnySection JSMtot USA.CAN DontPublish MEMTYPE
                                                         Age AgeJoinedASA Gender
##
      <chr>
                   <dbl> <chr>
                                 <chr>>
                                              <chr>
                                                       <dbl>
                                                                     <dbl> <chr>
##
    1 No
                       0 Yes
                                 No
                                              ISEN
                                                          NA
                                                                       NA <NA>
   2 No
##
                       0 Yes
                                 No
                                              ISEN
                                                          76
                                                                        29 M
##
  3 No
                       0 Yes
                                              ISEN
                                                          79
                                                                        29 M
                                 No
##
   4 No
                       0 Yes
                                 No
                                              ILIFA
                                                          NA
                                                                        NA <NA>
                                                                        30 M
##
  5 Yes
                       1 Yes
                                              ISEN
                                                          73
                                 No
##
   6 No
                       0 Yes
                                 No
                                              ISEN
                                                          71
                                                                        23 M
##
  7 No
                       0 Yes
                                 No
                                              ILIFA
                                                                       NA <NA>
                                                          NA
##
    8 No
                       0 Yes
                                 No
                                              ISEN
                                                          79
                                                                        29 M
## 9 No
                                                          72
                                                                        25 M
                       0 Yes
                                 No
                                              ISEN
## 10 No
                       0 Yes
                                 No
                                              ISEN
                                                          78
       InChapter <chr>, P.SEC.BE <chr>, P.SEC.BIOM <chr>, P.SEC.BIOP <chr>,
## #
```

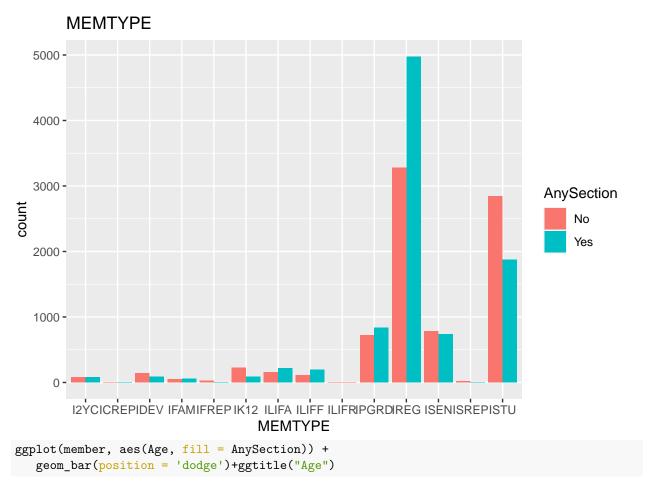
#### Visualization

```
ggplot(member, aes(USA.CAN, fill = AnySection)) +
  geom_bar(position = 'dodge')+ggtitle("USA.CAN")
```

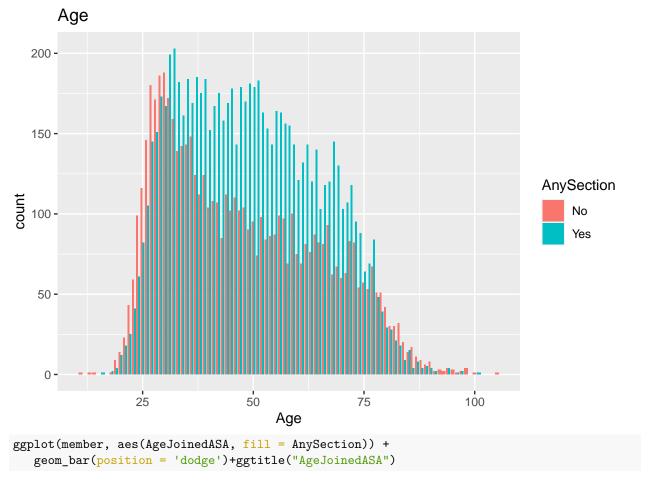




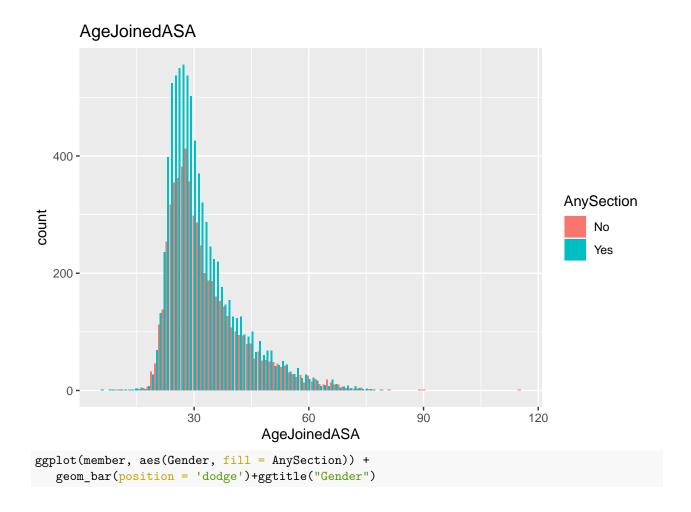


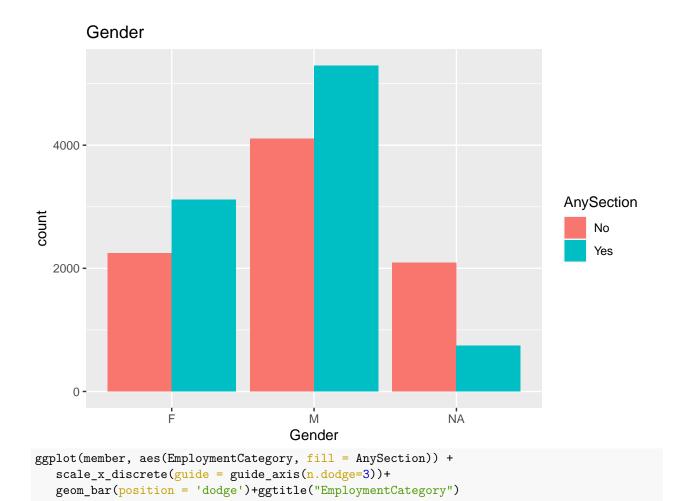


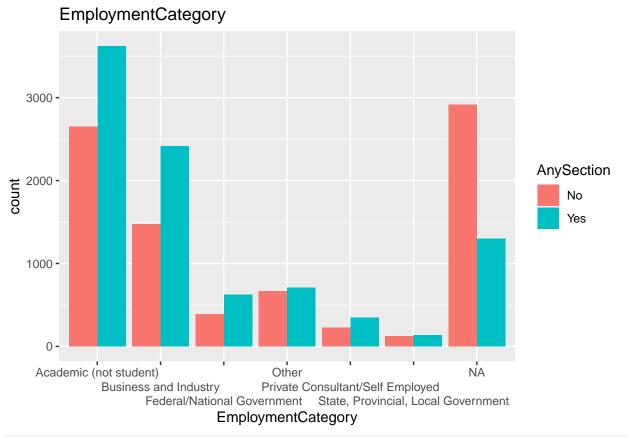
## Warning: Removed 3399 rows containing non-finite values (stat\_count).



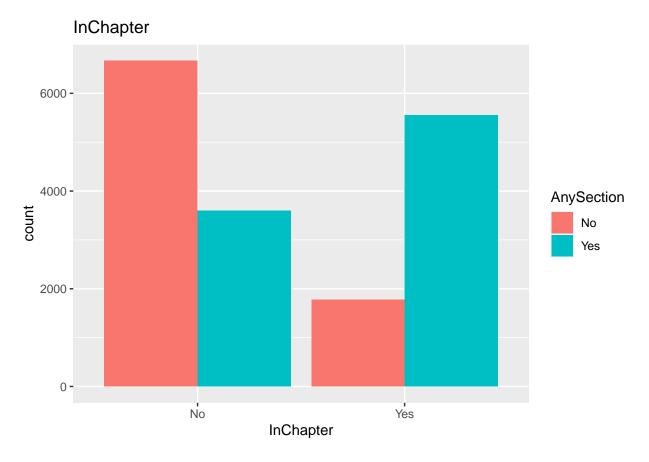
## Warning: Removed 3400 rows containing non-finite values (stat\_count).







ggplot(member, aes(InChapter, fill = AnySection)) +
 geom\_bar(position = 'dodge')+ggtitle("InChapter")



### Data processing

### Turn char columns to numeric factor values

These columns do not have missing value. We turn yes/no to 1/0.

```
member$AnySection = as.numeric(as.factor(member$AnySection))-1
member$DontPublish = as.numeric(as.factor(member$DontPublish))-1
member$MEMTYPE = as.numeric(as.factor(member$MEMTYPE))-1
member$InChapter = as.numeric(as.factor(member$InChapter))-1
member$P.SEC.BE = as.numeric(as.factor(member$P.SEC.BE))-1
member$P.SEC.BIOM = as.numeric(as.factor(member$P.SEC.BIOM))-1
member$P.SEC.BIOP = as.numeric(as.factor(member$P.SEC.BIOP))-1
member$P.SEC.CNSL = as.numeric(as.factor(member$P.SEC.CNSL))-1
member$P.SEC.COMP = as.numeric(as.factor(member$P.SEC.COMP))-1
member$P.SEC.EDUC = as.numeric(as.factor(member$P.SEC.EDUC))-1
member$P.SEC.ENVR = as.numeric(as.factor(member$P.SEC.ENVR))-1
member$P.SEC.EPI = as.numeric(as.factor(member$P.SEC.EPI))-1
member$P.SEC.GOVT = as.numeric(as.factor(member$P.SEC.GOVT))-1
member$P.SEC.GRPH = as.numeric(as.factor(member$P.SEC.GRPH))-1
member$P.SEC.HPSS = as.numeric(as.factor(member$P.SEC.HPSS))-1
member$P.SEC.MDD = as.numeric(as.factor(member$P.SEC.MDD))-1
member$P.SEC.MHS = as.numeric(as.factor(member$P.SEC.MHS))-1
member$P.SEC.MKTG = as.numeric(as.factor(member$P.SEC.MKTG))-1
member$P.SEC.NPAR = as.numeric(as.factor(member$P.SEC.NPAR))-1
member$P.SEC.QP = as.numeric(as.factor(member$P.SEC.QP))-1
```

```
member$P.SEC.SBSS = as.numeric(as.factor(member$P.SEC.SBSS))-1
member$P.SEC.SDNS= as.numeric(as.factor(member$P.SEC.SDNS))-1
member$P.SEC.SGG = as.numeric(as.factor(member$P.SEC.SGG))-1
member$P.SEC.SI = as.numeric(as.factor(member$P.SEC.SI))-1
member$P.SEC.SIS = as.numeric(as.factor(member$P.SEC.SIS))-1
member$P.SEC.SID = as.numeric(as.factor(member$P.SEC.SIDM))-1
member$P.SEC.SLDM = as.numeric(as.factor(member$P.SEC.SLDM))-1
member$P.SEC.SOC = as.numeric(as.factor(member$P.SEC.SPES))-1
member$P.SEC.SPES= as.numeric(as.factor(member$P.SEC.SPES))-1
member$P.SEC.SRMS = as.numeric(as.factor(member$P.SEC.SRMS))-1
member$P.SEC.SSPA = as.numeric(as.factor(member$P.SEC.SSPA))-1
member$P.SEC.TSHS = as.numeric(as.factor(member$P.SEC.TSHS))-1
```

#### Missing value

USA.CAN column has 12 missing values, which are less than 1% of the total data. We will impute the missing value with the mean of this column.

```
sum(is.na(member$USA.CAN))
```

```
## [1] 12
```

```
member$USA.CAN[is.na(member$USA.CAN)] = 'Yes'
# any better way to convert yes/no to 1/0 ??
member$USA.CAN = as.numeric(as.factor(member$USA.CAN))-1
member %>%
   count(USA.CAN)
```

```
## # A tibble: 2 x 2
## USA.CAN n
## * <dbl> <int>
## 1 0 1434
## 2 1 16160
```

Gender column has 2834 missing values. EmploymentCategory column has 4216 missing values.

sum(is.na(member\$Gender))

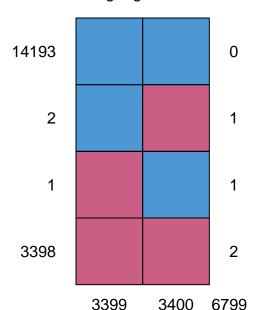
```
## [1] 2834
sum(is.na(member$EmploymentCategory))
```

```
## [1] 4216
```

Impute the missing value of Age and AgeJoinedASA using MICE method. From the pattern matrix, we could see that the missing values in these two columns are systematic.

```
md.pattern(member[,6:7])
```

### AgeAgeJoinedASA



## ## 14193 1 1 0 ## 2 1 0 1 ## 1 0 1 1 ## 3398 0 0 2 ## 3399 3400 6799

```
imp <- mice(member, method = "pmm", m = 5, maxit = 50, printFlag = FALSE)</pre>
```

## Warning: Number of logged events: 2

member.imp <- complete(imp)
summary(member.imp)</pre>

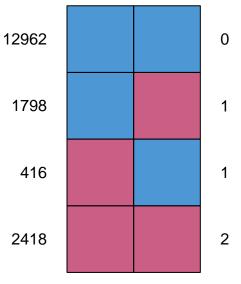
```
##
      AnySection
                          JSMtot
                                          USA.CAN
                                                          DontPublish
                                                                :0.00000
##
           :0.0000
                             :0.0000
   Min.
                     Min.
                                       Min.
                                              :0.0000
                                                         Min.
    1st Qu.:0.0000
                     1st Qu.:0.0000
                                       1st Qu.:1.0000
                                                         1st Qu.:0.00000
    Median :1.0000
                     Median :0.0000
                                       Median :1.0000
                                                         Median :0.00000
    Mean
           :0.5199
                     Mean
                             :0.9689
                                       Mean
                                              :0.9185
                                                         Mean
                                                                :0.09776
    3rd Qu.:1.0000
                     3rd Qu.:1.0000
                                       3rd Qu.:1.0000
                                                         3rd Qu.:0.00000
##
                             :5.0000
                                       Max.
                                              :1.0000
                                                                :1.00000
##
    Max.
           :1.0000
                     Max.
                                                         Max.
       MEMTYPE
##
                                       AgeJoinedASA
                         Age
                                                           Gender
##
    Min.
           : 0.00
                           : 11.00
                                      Min.
                                            : 6.00
                                                        Length: 17594
                    Min.
    1st Qu.:10.00
                    1st Qu.: 33.00
                                      1st Qu.: 26.00
                                                        Class : character
    Median :10.00
                    Median : 45.00
                                      Median : 30.00
                                                        Mode :character
                    Mean : 47.57
    Mean :10.33
                                      Mean
                                            : 32.59
                                      3rd Qu.: 37.00
##
    3rd Qu.:13.00
                    3rd Qu.: 60.00
    Max.
           :13.00
                    Max.
                            :105.00
                                             :115.00
##
    EmploymentCategory
                         InChapter
                                            P.SEC.BE
                                                               P.SEC.BIOM
    Length: 17594
                       Min.
                               :0.0000
                                         Min.
                                                 :0.000000
                                                             Min.
                                                                    :0.00
##
    Class : character
                        1st Qu.:0.0000
                                         1st Qu.:0.000000
                                                             1st Qu.:0.00
    Mode :character
                       Median : 0.0000
                                         Median: 0.000000
                                                             Median:0.00
                                                                   :0.01
##
                       Mean
                               :0.4164
                                         Mean
                                                 :0.005911
                                                             Mean
##
                        3rd Qu.:1.0000
                                         3rd Qu.:0.000000
                                                             3rd Qu.:0.00
```

```
##
                         Max.
                                 :1.0000
                                            Max.
                                                   :1.000000
                                                                Max.
                                                                        :1.00
##
                                                P.SEC.COMP
      P.SEC.BIOP
                           P.SEC.CNSL
                                                                    P.SEC.EDUC
##
    Min.
            :0.000000
                         Min.
                                 :0.00000
                                             Min.
                                                     :0.00000
                                                                 Min.
                                                                         :0.00000
                         1st Qu.:0.000000
##
    1st Qu.:0.000000
                                              1st Qu.:0.00000
                                                                 1st Qu.:0.000000
##
    Median : 0.000000
                         Median :0.000000
                                              Median : 0.00000
                                                                 Median :0.000000
##
    Mean
            :0.007787
                                 :0.009208
                                                     :0.01267
                                                                 Mean
                                                                         :0.006252
                         Mean
                                              Mean
##
    3rd Qu.:0.000000
                         3rd Qu.:0.000000
                                              3rd Qu.:0.00000
                                                                 3rd Qu.:0.000000
##
    Max.
            :1.000000
                         Max.
                                 :1.000000
                                              Max.
                                                     :1.00000
                                                                 Max.
                                                                         :1.000000
##
      P.SEC.ENVR
                           P.SEC.EPI
                                                P.SEC.GOVT
                                                                     P.SEC.GRPH
##
    Min.
            :0.000000
                         Min.
                                 :0.000000
                                              Min.
                                                     :0.000000
                                                                  Min.
                                                                          :0.00000
##
    1st Qu.:0.000000
                         1st Qu.:0.000000
                                              1st Qu.:0.000000
                                                                   1st Qu.:0.00000
##
    Median :0.000000
                         Median :0.000000
                                              Median :0.000000
                                                                   Median :0.00000
            :0.004092
##
                                 :0.009151
                                                     :0.005058
                                                                          :0.01051
    Mean
                         Mean
                                              Mean
                                                                   Mean
##
    3rd Qu.:0.000000
                         3rd Qu.:0.000000
                                              3rd Qu.:0.000000
                                                                   3rd Qu.:0.00000
                                                                          :1.00000
##
    Max.
            :1.000000
                         Max.
                                 :1.000000
                                              Max.
                                                     :1.000000
                                                                   Max.
##
      P.SEC.HPSS
                           P.SEC.MDD
                                                P.SEC.MHS
                                                                     P.SEC.MKTG
            :0.00000
##
                                 :0.000000
                                                     :0.000000
                                                                          :0.000000
    Min.
                         Min.
                                              Min.
                                                                  Min.
    1st Qu.:0.000000
                         1st Qu.:0.000000
                                              1st Qu.:0.000000
                                                                   1st Qu.:0.000000
    Median :0.000000
                         Median :0.000000
                                              Median :0.000000
                                                                  Median :0.000000
##
##
    Mean
            :0.004149
                         Mean
                                 :0.001592
                                              Mean
                                                     :0.001989
                                                                  Mean
                                                                          :0.003751
##
    3rd Qu.:0.000000
                         3rd Qu.:0.000000
                                              3rd Qu.:0.000000
                                                                   3rd Qu.:0.000000
##
    Max.
            :1.000000
                         Max.
                                 :1.000000
                                              Max.
                                                     :1.000000
                                                                  Max.
                                                                          :1.000000
      P.SEC.NPAR
                            P.SEC.QP
                                                P.SEC.SBSS
                                                                     P.SEC.SDNS
##
##
    Min.
            :0.000000
                         Min.
                                 :0.00000
                                             Min.
                                                     :0.000000
                                                                  Min.
                                                                          :0.000000
##
    1st Qu.:0.000000
                         1st Qu.:0.000000
                                              1st Qu.:0.000000
                                                                   1st Qu.:0.000000
##
    Median :0.000000
                         Median : 0.000000
                                              Median :0.000000
                                                                  Median :0.000000
##
    Mean
            :0.003694
                         Mean
                                 :0.004206
                                              Mean
                                                     :0.007844
                                                                   Mean
                                                                          :0.002217
##
    3rd Qu.:0.000000
                         3rd Qu.:0.000000
                                              3rd Qu.:0.000000
                                                                   3rd Qu.:0.000000
##
    Max.
            :1.000000
                         Max.
                                 :1.000000
                                              Max.
                                                     :1.000000
                                                                   Max.
                                                                          :1.000000
##
      P.SEC.SGG
                            P.SEC.SI
                                               P.SEC.SIS
                                                                    P.SEC.SLDM
##
    Min.
            :0.000000
                         Min.
                                 :0.00000
                                             Min.
                                                     :0.000000
                                                                 Min.
                                                                         :0.000000
##
    1st Qu.:0.000000
                         1st Qu.:0.00000
                                             1st Qu.:0.000000
                                                                 1st Qu.:0.000000
##
    Median :0.000000
                         Median :0.00000
                                             Median :0.000000
                                                                 Median :0.000000
            :0.001648
                                 :0.00125
                                                     :0.004036
##
    Mean
                         Mean
                                             Mean
                                                                 Mean
                                                                         :0.007957
    3rd Qu.:0.000000
                         3rd Qu.:0.00000
                                             3rd Qu.:0.000000
                                                                 3rd Qu.:0.000000
##
    Max.
                                                                 Max.
##
            :1.000000
                         Max.
                                 :1.00000
                                             Max.
                                                     :1.000000
                                                                         :1.000000
##
      P.SEC.SOC
                           P.SEC.SPES
                                                P.SEC.SRMS
                                                                     P.SEC.SSPA
##
    Min.
            :0.000000
                                 :0.000000
                                             Min.
                                                     :0.000000
                                                                  Min.
                                                                          :0.000000
                         Min.
                                              1st Qu.:0.000000
##
    1st Qu.:0.000000
                         1st Qu.:0.000000
                                                                   1st Qu.:0.000000
##
    Median :0.000000
                         Median :0.000000
                                              Median :0.000000
                                                                  Median :0.000000
##
    Mean
            :0.004547
                         Mean
                                 :0.004036
                                              Mean
                                                     :0.007332
                                                                  Mean
                                                                          :0.004377
##
    3rd Qu.:0.000000
                         3rd Qu.:0.000000
                                              3rd Qu.:0.000000
                                                                   3rd
                                                                      Qu.:0.000000
##
    Max.
            :1.000000
                         Max.
                                 :1.000000
                                              Max.
                                                     :1.000000
                                                                  Max.
                                                                          :1.000000
##
      P.SEC.TSHS
##
    Min.
            :0.000000
##
    1st Qu.:0.000000
##
    Median :0.000000
##
    Mean
            :0.005172
##
    3rd Qu.:0.000000
            :1.000000
```

**Description of member.imp** So far member.imp has JSMtot imputed by mean imputation, Age and AgeJoinedASA imputed by MICE method. Gender and EmploymentCategory still have missing values. From the pattern matrix, we see an large overlap of missing values in the two columns.

### md.pattern(member[,8:9])

### GeEmoler to yment Category



2834 4216 7050

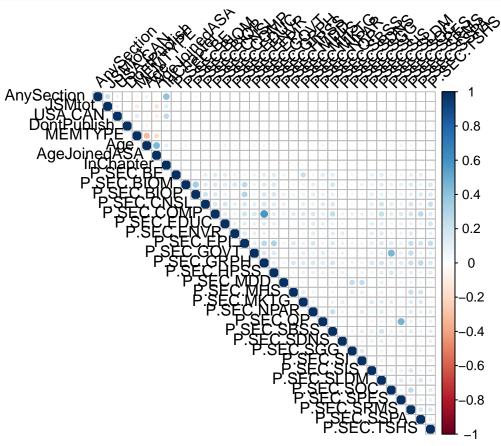
```
##
         Gender EmploymentCategory
## 12962
                                        0
              1
## 1798
## 416
              0
                                  1
                                        1
## 2418
              0
                                  0
                                        2
           2834
                               4216 7050
##
```

#### Correlation Matrix

```
library("Hmisc")
```

```
## Loading required package: lattice
## Loading required package: survival
## Loading required package: Formula
## Attaching package: 'Hmisc'
## The following objects are masked from 'package:dplyr':
##
##
       src, summarize
## The following objects are masked from 'package:base':
##
##
       format.pval, units
library(corrplot)
## corrplot 0.84 loaded
sub.member.imp =cbind(member.imp[,0:7],member.imp[,10:37])
cor <- cor(as.matrix(sub.member.imp))</pre>
```

```
corrplot(cor, type = "upper",
     tl.col = "black", tl.srt = 45)
```



```
# flattenCorrMatrix
# cormat : matrix of the correlation coefficients
\# pmat : matrix of the correlation p-values
flattenCorrMatrix <- function(cormat, pmat) {</pre>
 ut <- upper.tri(cormat)</pre>
 data.frame(
   row = rownames(cormat)[row(cormat)[ut]],
   column = rownames(cormat)[col(cormat)[ut]],
   cor =(cormat)[ut],
   p = pmat[ut]
}
cor2<-rcorr(as.matrix(sub.member.imp))</pre>
cor_table = flattenCorrMatrix(cor2$r, cor2$P)
cor_table[order(abs(cor_table$cor), decreasing = TRUE),]
```

cor

P.SEC.GRPH 0.5810733359 0.000000e+00

P.SEC.SPES 0.4668699250 0.000000e+00

P.SEC.SOC 0.4596057657 0.000000e+00

Age AgeJoinedASA 0.4433223914 0.000000e+00

column

row

P.SEC.COMP

P.SEC.GOVT

P.SEC.QP

##

## 149

## 489

## 452 ## 21

```
## 22
                                   0.4020788989 0.000000e+00
         AnySection
                        InChapter
## 55
         P.SEC.BIOM
                      P.SEC.BIOP
                                   0.3484721177 0.000000e+00
##
   15
            MEMTYPE
                              Age
                                  -0.3241382517 0.000000e+00
                      P.SEC.HPSS
##
  169
          P.SEC.EPI
                                   0.3188039282 0.000000e+00
##
   116
         P.SEC.BIOP
                       P.SEC.EPI
                                   0.2970723004 0.000000e+00
##
  152
          P.SEC.EPI
                       P.SEC.GRPH
                                   0.2709819284 0.000000e+00
## 546
         P.SEC.GRPH
                       P.SEC.SSPA
                                   0.2632914870 0.000000e+00
## 541
         P.SEC.COMP
                       P.SEC.SSPA
                                   0.2618848817 0.000000e+00
##
  115
         P.SEC.BIOM
                        P.SEC.EPI
                                   0.2602521117 0.000000e+00
##
  527
          P.SEC.SOC
                       P.SEC.SRMS
                                   0.2516582461 0.000000e+00
##
   24
            USA.CAN
                        InChapter
                                   0.2516195751 0.000000e+00
   345
          P.SEC.MDD
##
                        P.SEC.SGG
                                   0.2444281632 0.000000e+00
##
   289
         P.SEC.COMP
                       P.SEC.SBSS
                                   0.2433456600 0.000000e+00
                                   0.2427082102 0.000000e+00
##
  577
          P.SEC.EPI
                       P.SEC.TSHS
  371
##
          P.SEC.MDD
                         P.SEC.SI
                                   0.2406782107 0.000000e+00
##
  299
         P.SEC.NPAR
                       P.SEC.SBSS
                                   0.2388416767 0.000000e+00
## 513
         P.SEC.GOVT
                       P.SEC.SRMS
                                   0.2380365336 0.000000e+00
## 512
          P.SEC.EPI
                       P.SEC.SRMS
                                   0.2366214658 0.000000e+00
## 419
         P.SEC.COMP
                      P.SEC.SLDM
                                   0.2357515219 0.000000e+00
## 573
         P.SEC.CNSL
                       P.SEC.TSHS
                                   0.2336262169 0.000000e+00
## 1
         AnySection
                                   0.2271985696 0.000000e+00
                           JSMtot
## 514
         P.SEC.GRPH
                      P.SEC.SRMS
                                   0.2262743474 0.000000e+00
## 219
           P.SEC.BE
                      P.SEC.MKTG
                                   0.2257138105 0.000000e+00
##
  517
          P.SEC.MHS
                      P.SEC.SRMS
                                   0.2204441300 0.000000e+00
## 66
         P.SEC.BIOP
                       P.SEC.CNSL
                                   0.2080998275 0.000000e+00
##
  118
         P.SEC.COMP
                        P.SEC.EPI
                                   0.2078799337 0.000000e+00
   431
##
         P.SEC.SBSS
                       P.SEC.SLDM
                                   0.2023368231 0.000000e+00
##
   544
          P.SEC.EPI
                       P.SEC.SSPA
                                   0.2016068709 0.000000e+00
   509
##
         P.SEC.COMP
                       P.SEC.SRMS
                                   0.1927505338 0.000000e+00
## 418
         P.SEC.CNSL
                       P.SEC.SLDM
                                   0.1922955085 0.000000e+00
## 424
         P.SEC.GRPH
                       P.SEC.SLDM
                                   0.1914596852 0.000000e+00
##
  549
          P.SEC.MHS
                       P.SEC.SSPA
                                   0.1902836924 0.000000e+00
##
   20
            MEMTYPE AgeJoinedASA
                                  -0.1901493160 0.000000e+00
##
  90
         P.SEC.CNSL
                      P.SEC.EDUC
                                   0.1886398907 0.000000e+00
   286
         P.SEC.BIOM
                      P.SEC.SBSS
                                   0.1852932884 0.000000e+00
##
## 575
         P.SEC.EDUC
                      P.SEC.TSHS
                                   0.1852768350 0.000000e+00
##
  247
          P.SEC.EPI
                      P.SEC.NPAR
                                   0.1810801133 0.000000e+00
## 294
                      P.SEC.SBSS
         P.SEC.GRPH
                                   0.1803307734 0.000000e+00
   508
##
         P.SEC.CNSL
                      P.SEC.SRMS
                                   0.1800443468 0.000000e+00
##
  558
         P.SEC.SLDM
                      P.SEC.SSPA
                                   0.1781950389 0.000000e+00
  249
##
         P.SEC.GRPH
                       P.SEC.NPAR
                                   0.1774130810 0.000000e+00
   148
                       P.SEC.GRPH
##
         P.SEC.CNSL
                                   0.1767479063 0.000000e+00
##
   561
         P.SEC.SRMS
                      P.SEC.SSPA
                                   0.1759717430 0.000000e+00
##
   164
         P.SEC.BIOP
                       P.SEC.HPSS
                                   0.1753537538 0.000000e+00
##
  208
         P.SEC.GRPH
                        P.SEC.MHS
                                   0.1704773704 0.000000e+00
## 396
         P.SEC.GRPH
                        P.SEC.SIS
                                   0.1692258530 0.000000e+00
##
  244
         P.SEC.COMP
                       P.SEC.NPAR
                                   0.1689672637 0.000000e+00
##
  147
         P.SEC.BIOP
                       P.SEC.GRPH
                                   0.1683704345 0.000000e+00
## 571
         P.SEC.BIOM
                       P.SEC.TSHS
                                   0.1679199736 0.000000e+00
##
   292
          P.SEC.EPI
                       P.SEC.SBSS
                                   0.1673801370 0.000000e+00
   288
##
         P.SEC.CNSL
                      P.SEC.SBSS
                                   0.1668146081 0.000000e+00
## 454
         P.SEC.HPSS
                        P.SEC.SOC
                                   0.1664931826 0.000000e+00
## 117
         P.SEC.CNSL
                        P.SEC.EPI
                                   0.1657173862 0.000000e+00
## 153
         P.SEC.GOVT
                      P.SEC.GRPH
                                   0.1654474557 0.000000e+00
```

```
## 133
         P.SEC.COMP
                      P.SEC.GOVT
                                   0.1638048599 0.000000e+00
## 101
         P.SEC.BIOM
                      P.SEC.ENVR
                                   0.1635390167 0.000000e+00
## 579
         P.SEC.GRPH
                       P.SEC.TSHS
                                   0.1634652363 0.000000e+00
## 525
                      P.SEC.SRMS
          P.SEC.SIS
                                   0.1626697696 0.000000e+00
##
   76
         P.SEC.BIOM
                      P.SEC.COMP
                                   0.1622000889 0.000000e+00
  422
##
          P.SEC.EPI
                      P.SEC.SLDM
                                   0.1593486121 0.000000e+00
##
  78
         P.SEC.CNSL
                      P.SEC.COMP
                                   0.1593005974 0.000000e+00
## 228
         P.SEC.GRPH
                      P.SEC.MKTG
                                   0.1577432182 0.000000e+00
##
   146
         P.SEC.BIOM
                      P.SEC.GRPH
                                   0.1576177049 0.000000e+00
## 170
         P.SEC.GOVT
                       P.SEC.HPSS
                                   0.1574258254 0.000000e+00
  378
          P.SEC.SGG
                         P.SEC.SI
                                   0.1571536508 0.000000e+00
  206
##
          P.SEC.EPI
                        P.SEC.MHS
                                   0.1564638880 0.000000e+00
                      P.SEC.TSHS
## 572
         P.SEC.BIOP
                                   0.1558737083 0.000000e+00
## 17
             JSMtot AgeJoinedASA
                                  -0.1541423277 0.000000e+00
## 163
                      P.SEC.HPSS
         P.SEC.BIOM
                                   0.1534455552 0.000000e+00
##
  478
         P.SEC.COMP
                       P.SEC.SPES
                                   0.1530741217 0.000000e+00
##
  120
         P.SEC.ENVR
                       P.SEC.EPI
                                   0.1527882030 0.000000e+00
   506
         P.SEC.BIOM
                       P.SEC.SRMS
                                   0.1520332858 0.000000e+00
##
  77
         P.SEC.BIOP
                      P.SEC.COMP
                                   0.1518127265 0.000000e+00
##
   594
         P.SEC.SRMS
                      P.SEC.TSHS
                                   0.1516941075 0.000000e+00
##
  223
         P.SEC.COMP
                      P.SEC.MKTG
                                   0.1509594459 0.000000e+00
## 550
         P.SEC.MKTG
                       P.SEC.SSPA
                                   0.1508646096 0.000000e+00
## 539
         P.SEC.BIOP
                      P.SEC.SSPA
                                   0.1508609549 0.000000e+00
## 519
         P.SEC.NPAR
                      P.SEC.SRMS
                                   0.1485034800 0.000000e+00
## 150
         P.SEC.EDUC
                      P.SEC.GRPH
                                   0.1473474788 0.000000e+00
##
  518
         P.SEC.MKTG
                       P.SEC.SRMS
                                   0.1472984588 0.000000e+00
  65
                       P.SEC.CNSL
##
         P.SEC.BIOM
                                   0.1457813120 0.000000e+00
##
   495
         P.SEC.SLDM
                      P.SEC.SPES
                                   0.1456590625 0.000000e+00
##
   421
         P.SEC.ENVR
                       P.SEC.SLDM
                                   0.1445683951 0.000000e+00
                                   0.1443312169 0.000000e+00
## 451
          P.SEC.EPI
                       P.SEC.SOC
## 75
           P.SEC.BE
                       P.SEC.COMP
                                   0.1437090020 0.000000e+00
##
  483
         P.SEC.GRPH
                       P.SEC.SPES
                                   0.1428577030 0.000000e+00
##
   400
         P.SEC.MKTG
                        P.SEC.SIS
                                   0.1427477164 0.000000e+00
  429
         P.SEC.NPAR
                       P.SEC.SLDM
                                   0.1421664850 0.000000e+00
##
   165
                       P.SEC.HPSS
                                   0.1418971027 0.000000e+00
##
         P.SEC.CNSL
##
  265
         P.SEC.CNSL
                         P.SEC.QP
                                   0.1408544350 0.000000e+00
## 511
         P.SEC.ENVR
                      P.SEC.SRMS
                                   0.1405925849 0.000000e+00
## 574
         P.SEC.COMP
                      P.SEC.TSHS
                                   0.1405752356 0.000000e+00
  271
                         P.SEC.QP
##
         P.SEC.GRPH
                                   0.1396723546 0.000000e+00
## 9
                          MEMTYPE
                                   0.1395511927 0.000000e+00
            USA.CAN
##
  245
         P.SEC.EDUC
                      P.SEC.NPAR
                                   0.1377943273 0.000000e+00
  88
                      P.SEC.EDUC
                                   0.1369448023 0.000000e+00
##
         P.SEC.BIOM
##
   521
         P.SEC.SBSS
                      P.SEC.SRMS
                                   0.1358503304 0.000000e+00
##
  447
         P.SEC.CNSL
                        P.SEC.SOC
                                   0.1350040109 0.000000e+00
## 415
           P.SEC.BE
                      P.SEC.SLDM
                                   0.1349637686 0.000000e+00
## 453
         P.SEC.GRPH
                        P.SEC.SOC
                                   0.1338330457 0.000000e+00
## 162
           P.SEC.BE
                      P.SEC.HPSS
                                   0.1334408458 0.000000e+00
## 23
             JSMtot
                        InChapter
                                   0.1326333790 0.000000e+00
## 262
           P.SEC.BE
                         P.SEC.QP
                                   0.1324722106 0.000000e+00
##
  416
         P.SEC.BIOM
                      P.SEC.SLDM
                                   0.1324203593 0.000000e+00
##
  203
         P.SEC.COMP
                       P.SEC.MHS
                                   0.1317764355 0.000000e+00
## 270
         P.SEC.GOVT
                         P.SEC.QP
                                   0.1315412158 0.000000e+00
## 392
         P.SEC.EDUC
                       P.SEC.SIS
                                   0.1314394347 0.000000e+00
## 580
         P.SEC.HPSS
                      P.SEC.TSHS
                                   0.1309394675 0.000000e+00
```

```
## 428
         P.SEC.MKTG
                      P.SEC.SLDM
                                   0.1305416974 0.000000e+00
         P.SEC.NPAR
## 374
                         P.SEC.SI
                                   0.1303946294 0.000000e+00
  315
         P.SEC.ENVR
                      P.SEC.SDNS
                                   0.1294956822 0.000000e+00
  515
                      P.SEC.SRMS
##
         P.SEC.HPSS
                                   0.1291898840 0.000000e+00
##
   507
         P.SEC.BIOP
                      P.SEC.SRMS
                                   0.1288174047 0.000000e+00
##
   448
         P.SEC.COMP
                        P.SEC.SOC
                                   0.1282784367 0.000000e+00
##
  246
         P.SEC.ENVR
                      P.SEC.NPAR
                                   0.1281694296 0.000000e+00
## 285
           P.SEC.BE
                      P.SEC.SBSS
                                   0.1276247621 0.000000e+00
##
   166
         P.SEC.COMP
                      P.SEC.HPSS
                                   0.1270582489 0.000000e+00
##
  91
         P.SEC.COMP
                       P.SEC.EDUC
                                   0.1263767004 0.000000e+00
##
   87
           P.SEC.BE
                       P.SEC.EDUC
                                   0.1255770644 0.000000e+00
##
   291
         P.SEC.ENVR
                       P.SEC.SBSS
                                   0.1255016779 0.000000e+00
                       P.SEC.TSHS
##
   592
                                   0.1246783367 0.000000e+00
          P.SEC.SOC
                         P.SEC.SI
##
   376
         P.SEC.SBSS
                                   0.1244768836 0.000000e+00
  346
##
          P.SEC.MHS
                        P.SEC.SGG
                                   0.1239676471 0.000000e+00
##
  425
         P.SEC.HPSS
                       P.SEC.SLDM
                                   0.1235956079 0.000000e+00
##
  145
           P.SEC.BE
                      P.SEC.GRPH
                                   0.1228945269 0.000000e+00
   242
         P.SEC.BIOP
                       P.SEC.NPAR
                                   0.1225039834 0.000000e+00
##
  231
##
          P.SEC.MHS
                       P.SEC.MKTG
                                   0.1224573405 0.000000e+00
##
   393
         P.SEC.ENVR
                        P.SEC.SIS
                                   0.1223104735 0.000000e+00
##
  119
         P.SEC.EDUC
                        P.SEC.EPI
                                   0.1211127396 0.000000e+00
  222
##
         P.SEC.CNSL
                      P.SEC.MKTG
                                   0.1206276838 0.000000e+00
## 457
         P.SEC.MKTG
                        P.SEC.SOC
                                   0.1202272510 0.000000e+00
##
   8
             JSMtot
                          MEMTYPE
                                  -0.1200742515 0.000000e+00
##
  136
          P.SEC.EPI
                      P.SEC.GOVT
                                   0.1193538566 0.000000e+00
##
   586
         P.SEC.SBSS
                       P.SEC.TSHS
                                   0.1193376909 0.000000e+00
   132
                       P.SEC.GOVT
##
         P.SEC.CNSL
                                   0.1189458920 0.000000e+00
##
   537
           P.SEC.BE
                      P.SEC.SSPA
                                   0.1184453401 0.000000e+00
##
  432
         P.SEC.SDNS
                       P.SEC.SLDM
                                   0.1182016378 0.000000e+00
## 27
                Age
                        InChapter
                                   0.1181015129 0.000000e+00
##
   267
         P.SEC.EDUC
                         P.SEC.QP
                                   0.1174075492 0.000000e+00
##
   64
           P.SEC.BE
                      P.SEC.CNSL
                                   0.1167720902 0.000000e+00
##
   389
         P.SEC.BIOP
                        P.SEC.SIS
                                   0.1167570540 0.000000e+00
##
   403
         P.SEC.SBSS
                        P.SEC.SIS
                                   0.1162955719 0.000000e+00
   394
                                   0.1162811533 0.000000e+00
##
          P.SEC.EPI
                        P.SEC.SIS
  241
##
         P.SEC.BIOM
                      P.SEC.NPAR
                                   0.1162607243 0.000000e+00
##
  390
         P.SEC.CNSL
                        P.SEC.SIS
                                   0.1158871517 0.000000e+00
  322
                                   0.1157242001 0.000000e+00
##
         P.SEC.MKTG
                      P.SEC.SDNS
  435
                                   0.1153870751 0.000000e+00
##
          P.SEC.SIS
                      P.SEC.SLDM
## 595
         P.SEC.SSPA
                      P.SEC.TSHS
                                   0.1152556766 0.000000e+00
##
  505
           P.SEC.BE
                       P.SEC.SRMS
                                   0.1150479181 0.000000e+00
  171
                       P.SEC.HPSS
##
         P.SEC.GRPH
                                   0.1147069797 0.000000e+00
##
   420
         P.SEC.EDUC
                      P.SEC.SLDM
                                   0.1146345747 0.000000e+00
##
   295
                                   0.1145407264 0.000000e+00
         P.SEC.HPSS
                       P.SEC.SBSS
##
  227
         P.SEC.GOVT
                       P.SEC.MKTG
                                   0.1135732062 0.000000e+00
## 584
         P.SEC.NPAR
                       P.SEC.TSHS
                                   0.1131517063 0.000000e+00
##
  475
         P.SEC.BIOM
                       P.SEC.SPES
                                   0.1107182040 0.000000e+00
##
  266
         P.SEC.COMP
                         P.SEC.QP
                                   0.1103992152 0.000000e+00
                       P.SEC.SSPA
##
  551
         P.SEC.NPAR
                                   0.1095014233 0.000000e+00
##
   287
         P.SEC.BIOP
                       P.SEC.SBSS
                                   0.1094043058 0.000000e+00
##
  426
          P.SEC.MDD
                      P.SEC.SLDM
                                   0.1087646394 0.000000e+00
## 417
         P.SEC.BIOP
                      P.SEC.SLDM
                                   0.1085129157 0.000000e+00
## 135
         P.SEC.ENVR
                      P.SEC.GOVT
                                   0.1083757855 0.000000e+00
## 590
          P.SEC.SIS
                      P.SEC.TSHS
                                   0.1078957997 0.000000e+00
```

```
## 105
         P.SEC.EDUC
                      P.SEC.ENVR
                                   0.1078663921 0.000000e+00
## 576
                      P.SEC.TSHS
                                   0.1070827650 0.000000e+00
         P.SEC.ENVR
  167
         P.SEC.EDUC
                      P.SEC.HPSS
                                   0.1070579555 0.000000e+00
##
  151
         P.SEC.ENVR
                       P.SEC.GRPH
                                   0.1068609100 0.000000e+00
##
   372
          P.SEC.MHS
                         P.SEC.SI
                                   0.1067081780 0.000000e+00
##
                      P.SEC.TSHS
  578
         P.SEC.GOVT
                                   0.1065479394 0.000000e+00
## 490
         P.SEC.SBSS
                       P.SEC.SPES
                                   0.1061326340 0.000000e+00
## 103
         P.SEC.CNSL
                       P.SEC.ENVR
                                   0.1056757459 0.000000e+00
##
   445
         P.SEC.BIOM
                        P.SEC.SOC
                                   0.1035670398 0.000000e+00
##
  464
          P.SEC.SIS
                        P.SEC.SOC
                                   0.1023043875 0.000000e+00
## 540
         P.SEC.CNSL
                       P.SEC.SSPA
                                   0.1017866851 0.000000e+00
##
   18
            USA.CAN
                     AgeJoinedASA
                                  -0.1014472001 0.000000e+00
   183
##
                        P.SEC.MDD
                                   0.1006511338 0.000000e+00
         P.SEC.CNSL
           P.SEC.BE
##
   387
                        P.SEC.SIS
                                   0.1003512211 0.000000e+00
  298
##
         P.SEC.MKTG
                      P.SEC.SBSS
                                   0.0999376876 0.000000e+00
##
   528
         P.SEC.SPES
                       P.SEC.SRMS
                                   0.0996171284 0.000000e+00
##
   460
         P.SEC.SBSS
                                   0.0993342494 0.000000e+00
                        P.SEC.SOC
   290
         P.SEC.EDUC
                       P.SEC.SBSS
                                   0.0992098184 0.000000e+00
##
  250
##
         P.SEC.HPSS
                      P.SEC.NPAR
                                   0.0980896671 0.000000e+00
##
   587
         P.SEC.SDNS
                      P.SEC.TSHS
                                   0.0976909585 0.000000e+00
  481
##
          P.SEC.EPI
                      P.SEC.SPES
                                   0.0974506393 0.000000e+00
## 520
           P.SEC.QP
                      P.SEC.SRMS
                                   0.0973588872 0.000000e+00
  479
         P.SEC.EDUC
                      P.SEC.SPES
                                   0.0973173391 0.000000e+00
##
##
  229
         P.SEC.HPSS
                      P.SEC.MKTG
                                   0.0972864912 0.000000e+00
##
  526
         P.SEC.SLDM
                       P.SEC.SRMS
                                   0.0972817890 0.000000e+00
##
   538
         P.SEC.BIOM
                       P.SEC.SSPA
                                   0.0971635747 0.000000e+00
   516
##
          P.SEC.MDD
                       P.SEC.SRMS
                                   0.0968503389 0.000000e+00
##
   364
         P.SEC.COMP
                         P.SEC.SI
                                   0.0966321662 0.000000e+00
##
   482
         P.SEC.GOVT
                       P.SEC.SPES
                                   0.0965598149 0.000000e+00
                                   0.0965017335 0.000000e+00
## 427
          P.SEC.MHS
                       P.SEC.SLDM
## 476
         P.SEC.BIOP
                       P.SEC.SPES
                                   0.0963577152 0.000000e+00
##
   134
         P.SEC.EDUC
                       P.SEC.GOVT
                                   0.0959859225 0.000000e+00
##
   338
         P.SEC.COMP
                        P.SEC.SGG
                                   0.0955959703 0.000000e+00
  593
         P.SEC.SPES
                       P.SEC.TSHS
                                   0.0953974048 0.000000e+00
##
   494
##
          P.SEC.SIS
                       P.SEC.SPES
                                   0.0949392067 0.000000e+00
## 510
         P.SEC.EDUC
                      P.SEC.SRMS
                                   0.0946092569 0.000000e+00
##
  264
         P.SEC.BIOP
                         P.SEC.QP
                                   0.0941589842 0.000000e+00
  182
##
         P.SEC.BIOP
                        P.SEC.MDD
                                   0.0937950592 0.000000e+00
   293
##
         P.SEC.GOVT
                      P.SEC.SBSS
                                   0.0935609961 0.000000e+00
##
   484
         P.SEC.HPSS
                       P.SEC.SPES
                                   0.0935224136 0.000000e+00
##
   361
         P.SEC.BIOM
                         P.SEC.SI
                                   0.0934134418 0.000000e+00
   585
##
           P.SEC.QP
                      P.SEC.TSHS
                                   0.0932616896 0.000000e+00
##
  3
             JSMtot
                          USA.CAN
                                   0.0930103482 0.000000e+00
## 423
         P.SEC.GOVT
                      P.SEC.SLDM
                                   0.0928043922 0.000000e+00
## 404
         P.SEC.SDNS
                        P.SEC.SIS
                                   0.0923163376 0.000000e+00
  272
##
         P.SEC.HPSS
                         P.SEC.QP
                                   0.0914448516 0.000000e+00
##
   89
         P.SEC.BIOP
                       P.SEC.EDUC
                                   0.0914161100 0.000000e+00
##
   319
         P.SEC.HPSS
                       P.SEC.SDNS
                                   0.0909647910 0.000000e+00
##
  560
         P.SEC.SPES
                       P.SEC.SSPA
                                   0.0908520268 0.000000e+00
##
   318
         P.SEC.GRPH
                       P.SEC.SDNS
                                   0.0899282450 0.000000e+00
##
  224
         P.SEC.EDUC
                      P.SEC.MKTG
                                   0.0894953247 0.000000e+00
## 547
         P.SEC.HPSS
                      P.SEC.SSPA
                                   0.0894867013 0.000000e+00
## 391
         P.SEC.COMP
                       P.SEC.SIS
                                   0.0889596116 0.000000e+00
## 129
           P.SEC.BE
                      P.SEC.GOVT
                                   0.0885647456 0.000000e+00
```

```
## 477
         P.SEC.CNSL
                       P.SEC.SPES
                                   0.0877278862 0.000000e+00
## 434
           P.SEC.SI
                       P.SEC.SLDM
                                   0.0873419919 0.000000e+00
##
  589
           P.SEC.SI
                       P.SEC.TSHS
                                   0.0871348940 0.000000e+00
##
  11
         AnySection
                              Age
                                   0.0849088275 0.000000e+00
##
   184
         P.SEC.COMP
                        P.SEC.MDD
                                   0.0847005485 0.000000e+00
  316
##
          P.SEC.EPI
                       P.SEC.SDNS
                                   0.0843149843 0.000000e+00
##
   395
         P.SEC.GOVT
                        P.SEC.SIS
                                   0.0839224909 0.000000e+00
##
  388
         P.SEC.BIOM
                        P.SEC.SIS
                                   0.0836912589 0.000000e+00
##
   591
         P.SEC.SLDM
                       P.SEC.TSHS
                                   0.0827240347 0.000000e+00
##
   243
         P.SEC.CNSL
                       P.SEC.NPAR
                                   0.0824052879 0.000000e+00
##
   555
          P.SEC.SGG
                       P.SEC.SSPA
                                   0.0822096778 0.000000e+00
   542
##
         P.SEC.EDUC
                       P.SEC.SSPA
                                   0.0821313163 0.000000e+00
##
   226
          P.SEC.EPI
                       P.SEC.MKTG
                                   0.0819789112 0.000000e+00
##
  317
         P.SEC.GOVT
                       P.SEC.SDNS
                                   0.0818168563 0.000000e+00
  130
##
         P.SEC.BIOM
                       P.SEC.GOVT
                                   0.0813900222 0.000000e+00
##
   313
         P.SEC.COMP
                       P.SEC.SDNS
                                   0.0810881304 0.000000e+00
##
  545
         P.SEC.GOVT
                       P.SEC.SSPA
                                   0.0802319037 0.000000e+00
   480
         P.SEC.ENVR
                       P.SEC.SPES
                                   0.0801801929 0.000000e+00
##
  397
##
         P.SEC.HPSS
                        P.SEC.SIS
                                   0.0795751083 0.000000e+00
##
   221
         P.SEC.BIOP
                       P.SEC.MKTG
                                   0.0791836488 0.000000e+00
##
  523
          P.SEC.SGG
                       P.SEC.SRMS
                                   0.0786247755 0.000000e+00
   343
##
         P.SEC.GRPH
                        P.SEC.SGG
                                   0.0782289560 0.000000e+00
  557
          P.SEC.SIS
                       P.SEC.SSPA
                                   0.0772702699 0.000000e+00
##
##
   296
          P.SEC.MDD
                       P.SEC.SBSS
                                   0.0772679899 0.000000e+00
##
   323
         P.SEC.NPAR
                       P.SEC.SDNS
                                   0.0768111508 0.000000e+00
##
  269
          P.SEC.EPI
                         P.SEC.QP
                                   0.0767633784 0.000000e+00
   100
                       P.SEC.ENVR
##
           P.SEC.BE
                                   0.0763573900 0.000000e+00
##
   350
         P.SEC.SBSS
                        P.SEC.SGG
                                   0.0758016786 0.000000e+00
##
   496
          P.SEC.SOC
                       P.SEC.SPES
                                   0.0756527736 0.000000e+00
                                   0.0755195714 0.000000e+00
##
  552
           P.SEC.QP
                       P.SEC.SSPA
##
   433
          P.SEC.SGG
                       P.SEC.SLDM
                                   0.0752106153 0.000000e+00
##
   369
         P.SEC.GRPH
                         P.SEC.SI
                                   0.0751912399 0.000000e+00
##
   450
         P.SEC.ENVR
                        P.SEC.SOC
                                   0.0750675419 0.000000e+00
  248
##
         P.SEC.GOVT
                       P.SEC.NPAR
                                   0.0748906909 0.000000e+00
                                  -0.0739608806 0.000000e+00
##
   14
        DontPublish
                              Age
   300
##
           P.SEC.QP
                       P.SEC.SBSS
                                   0.0738667154 0.000000e+00
##
  430
           P.SEC.QP
                       P.SEC.SLDM
                                   0.0732582487 0.000000e+00
  491
                                   0.0732530210 0.000000e+00
##
         P.SEC.SDNS
                       P.SEC.SPES
   253
##
         P.SEC.MKTG
                       P.SEC.NPAR
                                   0.0728866975 0.000000e+00
          P.SEC.MHS
                        P.SEC.SOC
##
   456
                                   0.0728233919 0.000000e+00
##
   370
         P.SEC.HPSS
                         P.SEC.SI
                                   0.0727785712 0.000000e+00
##
   104
         P.SEC.COMP
                       P.SEC.ENVR
                                   0.0723239400 0.000000e+00
##
   553
         P.SEC.SBSS
                       P.SEC.SSPA
                                   0.0721899835 0.000000e+00
##
   180
           P.SEC.BE
                        P.SEC.MDD
                                   0.0713255383 0.000000e+00
## 187
          P.SEC.EPI
                        P.SEC.MDD
                                   0.0710353181 0.000000e+00
## 114
           P.SEC.BE
                        P.SEC.EPI
                                   0.0704565825 0.000000e+00
## 465
         P.SEC.SLDM
                        P.SEC.SOC
                                   0.0700156221 0.000000e+00
##
   401
         P.SEC.NPAR
                        P.SEC.SIS
                                   0.0700104714 0.000000e+00
                       P.SEC.SPES
##
  488
         P.SEC.NPAR
                                   0.0700104714 0.000000e+00
##
   341
          P.SEC.EPI
                        P.SEC.SGG
                                   0.0696671647 0.000000e+00
##
  449
         P.SEC.EDUC
                        P.SEC.SOC
                                   0.0696645993 0.000000e+00
## 207
         P.SEC.GOVT
                        P.SEC.MHS
                                   0.0687390218 0.000000e+00
## 471
                       P.SEC.SPES
                                   0.0687208735 0.000000e+00
                Age
## 461
         P.SEC.SDNS
                        P.SEC.SOC
                                   0.0686689881 0.000000e+00
```

```
## 201
         P.SEC.BIOP
                       P.SEC.MHS
                                   0.0686062700 0.000000e+00
## 276
                                   0.0684220877 0.000000e+00
         P.SEC.NPAR
                        P.SEC.QP
## 297
          P.SEC.MHS
                                   0.0683304371 0.000000e+00
                      P.SEC.SBSS
## 2
                                   0.0671619438 0.000000e+00
         AnySection
                          USA.CAN
## 84
                      P.SEC.EDUC
                                   0.0670094549 0.000000e+00
                Age
## 377
         P.SEC.SDNS
                        P.SEC.SI
                                   0.0667296958 0.000000e+00
## 189
         P.SEC.GRPH
                       P.SEC.MDD
                                   0.0657793611 0.000000e+00
## 458
         P.SEC.NPAR
                       P.SEC.SOC
                                   0.0655088598 0.000000e+00
## 474
           P.SEC.BE
                      P.SEC.SPES
                                   0.0652646553 0.000000e+00
## 402
           P.SEC.QP
                       P.SEC.SIS
                                   0.0651288199 0.000000e+00
## 168
         P.SEC.ENVR
                       P.SEC.HPSS
                                   0.0651148527 0.000000e+00
## 485
          P.SEC.MDD
                      P.SEC.SPES
                                   0.0649327139 0.000000e+00
##
  367
          P.SEC.EPI
                        P.SEC.SI
                                   0.0641617962 0.000000e+00
                                   0.0622197579 0.000000e+00
## 210
          P.SEC.MDD
                        P.SEC.MHS
## 548
          P.SEC.MDD
                      P.SEC.SSPA
                                   0.0621559820 0.000000e+00
## 7
         AnySection
                          MEMTYPE
                                  -0.0616726395 2.220446e-16
## 259
                        P.SEC.QP
                                   0.0614295580 4.440892e-16
                Age
## 446
         P.SEC.BIOP
                        P.SEC.SOC
                                   0.0612917977 4.440892e-16
## 444
           P.SEC.BE
                       P.SEC.SOC
                                   0.0609135028 6.661338e-16
## 459
           P.SEC.QP
                       P.SEC.SOC
                                   0.0608776681 6.661338e-16
##
  252
          P.SEC.MHS
                      P.SEC.NPAR
                                   0.0603576626 1.110223e-15
  336
         P.SEC.BIOP
                       P.SEC.SGG
                                   0.0601616218 1.332268e-15
## 200
         P.SEC.BIOM
                       P.SEC.MHS
                                   0.0596028469 2.664535e-15
## 42
                      P.SEC.BIOM
                                   0.0592446534 3.552714e-15
                Age
## 220
         P.SEC.BIOM
                      P.SEC.MKTG
                                   0.0592304184 3.774758e-15
  314
         P.SEC.EDUC
                      P.SEC.SDNS
                                   0.0575917140 2.087219e-14
  131
         P.SEC.BIOP
                       P.SEC.GOVT
##
                                   0.0574863675 2.331468e-14
##
   581
          P.SEC.MDD
                      P.SEC.TSHS
                                   0.0567551615 4.929390e-14
  209
##
         P.SEC.HPSS
                        P.SEC.MHS
                                   0.0566516355 5.484502e-14
## 263
         P.SEC.BIOM
                        P.SEC.QP
                                   0.0552437339 2.255973e-13
## 337
         P.SEC.CNSL
                        P.SEC.SGG
                                   0.0547602885 3.637091e-13
##
  487
         P.SEC.MKTG
                      P.SEC.SPES
                                   0.0547554947 3.652634e-13
##
  225
         P.SEC.ENVR
                       P.SEC.MKTG
                                   0.0543208381 5.593304e-13
## 126
                      P.SEC.GOVT
                                   0.0538269616 9.037215e-13
                Age
   324
           P.SEC.QP
                      P.SEC.SDNS
                                   0.0529602589 2.077005e-12
##
## 554
         P.SEC.SDNS
                      P.SEC.SSPA
                                   0.0518010091 6.193046e-12
## 362
         P.SEC.BIOP
                        P.SEC.SI
                                   0.0517586763 6.442402e-12
## 334
           P.SEC.BE
                                   0.0517008978 6.798340e-12
                       P.SEC.SGG
  325
         P.SEC.SBSS
                      P.SEC.SDNS
##
                                   0.0506091025 1.858380e-11
          P.SEC.MHS
## 582
                      P.SEC.TSHS
                                   0.0501296363 2.871303e-11
## 567
                Age
                       P.SEC.TSHS
                                   0.0484768626 1.247711e-10
## 366
         P.SEC.ENVR
                        P.SEC.SI
                                   0.0481183750 1.705249e-10
## 583
         P.SEC.MKTG
                      P.SEC.TSHS
                                   0.0474207498 3.111993e-10
## 61
                Age
                      P.SEC.CNSL
                                   0.0470562924 4.246847e-10
## 502
                      P.SEC.SRMS
                                   0.0467444602 5.531009e-10
                Age
## 559
          P.SEC.SOC
                                   0.0467122037 5.683702e-10
                      P.SEC.SSPA
## 72
                      P.SEC.COMP
                                   0.0461840061 8.854921e-10
                Age
## 312
         P.SEC.CNSL
                       P.SEC.SDNS
                                   0.0460690799 9.745478e-10
## 142
                       P.SEC.GRPH
                                   0.0457800390 1.238898e-09
                Age
## 51
                      P.SEC.BIOP
                                   0.0449555818 2.437256e-09
                Age
## 230
          P.SEC.MDD
                      P.SEC.MKTG
                                   0.0441989539 4.488518e-09
## 240
           P.SEC.BE
                      P.SEC.NPAR
                                   0.0441895455 4.522448e-09
## 310
         P.SEC.BIOM
                      P.SEC.SDNS
                                   0.0438397018 5.977507e-09
## 54
           P.SEC.BE
                      P.SEC.BIOP
                                  0.0437814575 6.260375e-09
```

```
## 348
         P.SEC.NPAR
                       P.SEC.SGG 0.0437144514 6.601915e-09
## 441
                                  0.0431035114 1.067726e-08
                       P.SEC.SOC
                Age
## 97
                Age
                      P.SEC.ENVR 0.0420578832 2.395107e-08
##
                      P.SEC.BIOP -0.0417087046 3.123726e-08
  46
         AnySection
##
  25
        DontPublish
                       InChapter -0.0416151920 3.352813e-08
## 492
          P.SEC.SGG
                      P.SEC.SPES 0.0416151866 3.352827e-08
                              Age -0.0408455060 5.969190e-08
## 13
            USA.CAN
## 282
                Age
                      P.SEC.SBSS
                                  0.0400101271 1.103573e-07
## 275
         P.SEC.MKTG
                        P.SEC.QP
                                   0.0391107657 2.110162e-07
## 181
         P.SEC.BIOM
                       P.SEC.MDD
                                  0.0389715172 2.330046e-07
## 16
         AnySection AgeJoinedASA -0.0387333000 2.758514e-07
## 71
            MEMTYPE
                      P.SEC.COMP -0.0384836461 3.288915e-07
## 522
         P.SEC.SDNS
                      P.SEC.SRMS
                                  0.0384477209 3.372913e-07
## 335
         P.SEC.BIOM
                                   0.0381539474 4.141985e-07
                       P.SEC.SGG
## 365
         P.SEC.EDUC
                                   0.0380024202 4.602233e-07
                        P.SEC.SI
## 159
                      P.SEC.HPSS
                                   0.0378296060 5.187392e-07
                Age
## 268
         P.SEC.ENVR
                        P.SEC.QP
                                   0.0371049481 8.521265e-07
## 311
         P.SEC.BIOP
                      P.SEC.SDNS
                                   0.0370729987 8.707992e-07
## 45
                                  0.0369528686 9.445974e-07
           P.SEC.BE
                      P.SEC.BIOM
## 215
            MEMTYPE
                      P.SEC.MKTG -0.0366116364 1.188544e-06
## 111
                       P.SEC.EPI
                                  0.0365917363 1.204501e-06
                Age
## 274
                                  0.0365194420 1.264221e-06
          P.SEC.MHS
                        P.SEC.QP
## 141
            MEMTYPE
                      P.SEC.GRPH -0.0361716383 1.593631e-06
## 570
           P.SEC.BE
                      P.SEC.TSHS
                                   0.0357860976 2.055026e-06
## 501
            MEMTYPE
                      P.SEC.SRMS -0.0357743552 2.070920e-06
## 202
         P.SEC.CNSL
                       P.SEC.MHS
                                  0.0357615648 2.088368e-06
## 34
                        P.SEC.BE
                                  0.0355978465 2.324546e-06
                Age
##
  41
            MEMTYPE
                      P.SEC.BIOM -0.0336886145 7.840671e-06
## 339
         P.SEC.EDUC
                       P.SEC.SGG
                                  0.0323283111 1.795438e-05
## 4
         AnySection
                     DontPublish -0.0318767857 2.347461e-05
## 35
       AgeJoinedASA
                        P.SEC.BE
                                   0.0308843599 4.180672e-05
##
   363
         P.SEC.CNSL
                        P.SEC.SI
                                   0.0302666077 5.937794e-05
## 384
                       P.SEC.SIS
                                   0.0292409641 1.048243e-04
                Age
## 204
                                  0.0288250868 1.313301e-04
         P.SEC.EDUC
                       P.SEC.MHS
## 50
            MEMTYPE
                      P.SEC.BIOP -0.0285764997 1.500663e-04
## 320
                      P.SEC.SDNS 0.0284373031 1.616288e-04
          P.SEC.MDD
## 83
            MEMTYPE
                      P.SEC.EDUC -0.0282294666 1.804629e-04
## 281
            MEMTYPE
                      P.SEC.SBSS -0.0280160961 2.019321e-04
## 309
           P.SEC.BE
                      P.SEC.SDNS
                                  0.0278973356 2.148986e-04
                       P.SEC.SOC -0.0277405414 2.332175e-04
## 440
            MEMTYPE
                       P.SEC.EPI -0.0271109683 3.225663e-04
## 110
            MEMTYPE
## 33
            MEMTYPE
                        P.SEC.BE -0.0258862402 5.948674e-04
## 37
         AnySection
                      P.SEC.BIOM -0.0257231458 6.441686e-04
## 60
                      P.SEC.CNSL -0.0253413521 7.748159e-04
            MEMTYPE
## 383
            MEMTYPE
                       P.SEC.SIS -0.0252651327 8.036805e-04
## 321
          P.SEC.MHS
                      P.SEC.SDNS
                                   0.0250192985 9.037185e-04
## 102
         P.SEC.BIOP
                      P.SEC.ENVR
                                   0.0247079264 1.046990e-03
## 198
          InChapter
                       P.SEC.MHS
                                   0.0243918479 1.213686e-03
            USA.CAN
## 48
                      P.SEC.BIOP
                                   0.0240260621 1.437033e-03
## 39
            USA.CAN
                      P.SEC.BIOM
                                  0.0236817699 1.681287e-03
## 216
                      P.SEC.MKTG
                                  0.0235015616 1.823845e-03
                Age
## 236
            MEMTYPE
                      P.SEC.NPAR -0.0232281334 2.061462e-03
## 406
           P.SEC.SI
                       P.SEC.SIS
                                  0.0231170473 2.165866e-03
## 493
           P.SEC.SI
                      P.SEC.SPES 0.0231170473 2.165866e-03
```

```
## 543
         P.SEC.ENVR
                      P.SEC.SSPA
                                   0.0227249790 2.574284e-03
## 569
          InChapter
                      P.SEC.TSHS
                                   0.0226770700 2.628749e-03
## 161
          InChapter
                      P.SEC.HPSS
                                   0.0226065670 2.710817e-03
## 536
          InChapter
                      P.SEC.SSPA
                                   0.0225982114 2.720697e-03
##
  237
                Age
                      P.SEC.NPAR
                                   0.0225784502 2.744194e-03
## 556
           P.SEC.SI
                      P.SEC.SSPA
                                   0.0220191200 3.491171e-03
## 470
            MEMTYPE
                      P.SEC.SPES
                                  -0.0218371864 3.771392e-03
## 218
          InChapter
                      P.SEC.MKTG
                                   0.0217236137 3.956528e-03
## 463
           P.SEC.SI
                       P.SEC.SOC
                                   0.0215144891 4.319149e-03
## 353
             JSMtot
                        P.SEC.SI
                                   0.0212456231 4.829556e-03
## 68
             JSMtot
                      P.SEC.COMP
                                   0.0211729189 4.976646e-03
## 251
          P.SEC.MDD
                      P.SEC.NPAR
                                   0.0210712904 5.189045e-03
  347
##
         P.SEC.MKTG
                       P.SEC.SGG
                                   0.0204260708 6.739431e-03
## 368
         P.SEC.GOVT
                        P.SEC.SI
                                   0.0201478015 7.528083e-03
## 12
             JSMtot
                                   0.0200576410 7.800810e-03
                              Age
## 398
          P.SEC.MDD
                       P.SEC.SIS
                                   0.0199499928 8.138007e-03
## 191
         AnySection
                       P.SEC.MHS
                                   0.0199247498 8.218942e-03
## 108
            USA.CAN
                       P.SEC.EPI
                                   0.0199010215 8.295677e-03
## 186
         P.SEC.ENVR
                       P.SEC.MDD
                                   0.0197759866 8.710710e-03
## 190
         P.SEC.HPSS
                       P.SEC.MDD
                                   0.0196053258 9.307116e-03
##
  405
          P.SEC.SGG
                       P.SEC.SIS
                                   0.0195143809 9.639595e-03
## 273
          P.SEC.MDD
                        P.SEC.QP
                                   0.0194378987 9.927355e-03
## 340
         P.SEC.ENVR
                       P.SEC.SGG
                                   0.0193427678 1.029594e-02
## 344
         P.SEC.HPSS
                       P.SEC.SGG
                                   0.0191744463 1.097803e-02
## 258
            MEMTYPE
                        P.SEC.QP -0.0191478468 1.108942e-02
  349
           P.SEC.QP
                       P.SEC.SGG
                                  0.0190093065 1.168596e-02
## 305
            MEMTYPE
                      P.SEC.SDNS -0.0189033032 1.216144e-02
  74
##
          InChapter
                      P.SEC.COMP
                                  0.0187012498 1.311545e-02
## 5
             JSMtot
                      DontPublish -0.0185933711 1.365143e-02
## 455
          P.SEC.MDD
                       P.SEC.SOC
                                  0.0184955996 1.415381e-02
## 96
            MEMTYPE
                      P.SEC.ENVR -0.0184057755 1.462966e-02
## 81
            USA.CAN
                      P.SEC.EDUC
                                  0.0183572832 1.489237e-02
##
  196
                       P.SEC.MHS -0.0183111280 1.514627e-02
                Age
## 213
            USA.CAN
                      P.SEC.MKTG
                                   0.0182793052 1.532354e-02
##
  360
           P.SEC.BE
                        P.SEC.SI
                                   0.0182527454 1.547289e-02
##
  566
            MEMTYPE
                      P.SEC.TSHS -0.0181460942 1.608557e-02
## 99
          InChapter
                      P.SEC.ENVR
                                   0.0180962371 1.637923e-02
## 144
          InChapter
                      P.SEC.GRPH
                                   0.0180489544 1.666206e-02
## 67
         AnySection
                      P.SEC.COMP
                                   0.0173534424 2.134580e-02
## 399
          P.SEC.MHS
                       P.SEC.SIS
                                   0.0172789920 2.190940e-02
## 205
         P.SEC.ENVR
                       P.SEC.MHS
                                   0.0171193201 2.316197e-02
## 56
         AnySection
                      P.SEC.CNSL -0.0169404372 2.463866e-02
##
  407
         AnySection
                      P.SEC.SLDM
                                   0.0169210901 2.480315e-02
## 333
          InChapter
                                   0.0168393998 2.550824e-02
                       P.SEC.SGG
## 531
            USA.CAN
                      P.SEC.SSPA
                                   0.0166031235 2.764603e-02
## 139
            USA.CAN
                      P.SEC.GRPH
                                   0.0164521946 2.909103e-02
## 260 AgeJoinedASA
                        P.SEC.QP
                                   0.0161997403 3.165340e-02
  156
##
            USA.CAN
                      P.SEC.HPSS
                                   0.0159963975 3.385578e-02
  356
##
            MEMTYPE
                        P.SEC.SI -0.0158727259 3.525832e-02
## 524
           P.SEC.SI
                      P.SEC.SRMS
                                   0.0158112993 3.597319e-02
## 125
                      P.SEC.GOVT -0.0157415117 3.680031e-02
            MEMTYPE
## 381
            USA.CAN
                       P.SEC.SIS
                                  0.0156850742 3.748101e-02
## 306
                      P.SEC.SDNS
                                   0.0154996936 3.979277e-02
                Age
## 179
          InChapter
                       P.SEC.MDD
                                  0.0154488937 4.044699e-02
```

```
## 123
            USA.CAN
                      P.SEC.GOVT
                                  0.0153843526 4.129131e-02
## 85
       AgeJoinedASA
                                   0.0152939808 4.249859e-02
                      P.SEC.EDUC
          InChapter
## 504
                      P.SEC.SRMS
                                   0.0152520239 4.306917e-02
## 233
             JSMtot
                      P.SEC.NPAR
                                   0.0152492629 4.310694e-02
## 414
          InChapter
                      P.SEC.SLDM
                                   0.0151898266 4.392689e-02
## 278
             JSMtot
                      P.SEC.SBSS
                                   0.0151671093 4.424375e-02
## 411
            MEMTYPE
                      P.SEC.SLDM -0.0149501688 4.736789e-02
## 185
         P.SEC.EDUC
                       P.SEC.MDD
                                   0.0149229582 4.777254e-02
## 443
          InChapter
                       P.SEC.SOC
                                   0.0148902685 4.826250e-02
## 140
        DontPublish
                      P.SEC.GRPH
                                   0.0148489691 4.888754e-02
## 497
         AnySection
                      P.SEC.SRMS
                                  -0.0147568609 5.030603e-02
## 128
          InChapter
                      P.SEC.GOVT
                                   0.0145312804 5.392627e-02
## 158
            MEMTYPE
                      P.SEC.HPSS
                                 -0.0142710912 5.836939e-02
## 303
                                   0.0140406038 6.255539e-02
            USA.CAN
                      P.SEC.SDNS
## 438
            USA.CAN
                                   0.0139575433 6.412348e-02
                       P.SEC.SOC
## 301
         AnySection
                      P.SEC.SDNS
                                   0.0138469333 6.626192e-02
## 284
          InChapter
                      P.SEC.SBSS
                                   0.0137730715 6.772236e-02
## 473
          InChapter
                      P.SEC.SPES
                                   0.0135239697 7.284413e-02
## 499
            USA.CAN
                      P.SEC.SRMS
                                   0.0134266900 7.492850e-02
## 199
           P.SEC.BE
                       P.SEC.MHS
                                   0.0131978514 8.002411e-02
##
  197 AgeJoinedASA
                       P.SEC.MHS -0.0130287473 8.396769e-02
## 304
        DontPublish
                                   0.0129703706 8.536504e-02
                      P.SEC.SDNS
## 409
            USA.CAN
                      P.SEC.SLDM
                                  0.0126506239 9.335555e-02
## 563
             JSMtot
                      P.SEC.TSHS -0.0124164062 9.958105e-02
## 157
        DontPublish
                      P.SEC.HPSS -0.0123154938 1.023634e-01
## 43
       AgeJoinedASA
                      P.SEC.BIOM -0.0122984054 1.028406e-01
## 255
             JSMtot
                        P.SEC.QP -0.0122283729 1.048149e-01
## 412
                      P.SEC.SLDM 0.0122080935 1.053922e-01
                Age
## 328
            USA.CAN
                       P.SEC.SGG
                                  0.0121039973 1.083953e-01
## 86
                      P.SEC.EDUC
                                   0.0119900313 1.117603e-01
          InChapter
## 173
             JSMtot
                       P.SEC.MDD
                                   0.0119675579 1.124335e-01
## 53
          InChapter
                      P.SEC.BIOP -0.0118654760 1.155317e-01
## 308
          InChapter
                      P.SEC.SDNS
                                   0.0116715238 1.216027e-01
## 232
         AnySection
                      P.SEC.NPAR
                                   0.0116390273 1.226439e-01
##
  36
          InChapter
                        P.SEC.BE
                                  0.0115744037 1.247350e-01
##
  82
        DontPublish
                      P.SEC.EDUC -0.0115416819 1.258044e-01
##
  63
          InChapter
                      P.SEC.CNSL
                                  0.0115215376 1.264663e-01
## 58
                      P.SEC.CNSL
                                   0.0113177590 1.333153e-01
            USA.CAN
                                  0.0109129939 1.477665e-01
  238 AgeJoinedASA
                      P.SEC.NPAR
## 30
             JSMtot
                        P.SEC.BE -0.0108823725 1.489067e-01
## 121
         AnySection
                      P.SEC.GOVT
                                  0.0107914894 1.523303e-01
## 154
                      P.SEC.HPSS
                                   0.0107036173 1.556971e-01
         AnySection
##
  38
             JSMtot
                      P.SEC.BIOM 0.0106926667 1.561206e-01
## 26
            MEMTYPE
                       InChapter -0.0106577131 1.574782e-01
## 466
                      P.SEC.SPES -0.0106097557 1.593554e-01
         AnySection
## 176
            MEMTYPE
                       P.SEC.MDD -0.0104203587 1.669347e-01
## 533
            MEMTYPE
                      P.SEC.SSPA -0.0103540663 1.696507e-01
## 19
        DontPublish AgeJoinedASA -0.0103204375 1.710410e-01
## 380
             JSMtot
                       P.SEC.SIS -0.0100069588 1.844142e-01
## 192
             JSMtot
                       P.SEC.MHS
                                  0.0100010631 1.846729e-01
## 530
             JSMtot
                      P.SEC.SSPA
                                  0.0099819857 1.855119e-01
## 564
            USA.CAN
                      P.SEC.TSHS
                                  0.0098953766 1.893565e-01
## 172
         AnySection
                       P.SEC.MDD
                                  0.0098264025 1.924600e-01
## 442 AgeJoinedASA
                       P.SEC.SOC -0.0097312432 1.968028e-01
```

```
## 127 AgeJoinedASA
                      P.SEC.GOVT 0.0096483220 2.006453e-01
                         MEMTYPE -0.0096144671 2.022297e-01
## 10
        DontPublish
## 69
            USA.CAN
                      P.SEC.COMP
                                  0.0096109773 2.023936e-01
## 195
            MEMTYPE
                       P.SEC.MHS -0.0094849282 2.083764e-01
##
  359
          InChapter
                        P.SEC.SI
                                   0.0092638035 2.191798e-01
##
  261
          InChapter
                        P.SEC.QP
                                   0.0092410467 2.203140e-01
## 283 AgeJoinedASA
                      P.SEC.SBSS
                                   0.0092276901 2.209817e-01
## 408
             JSMtot
                      P.SEC.SLDM
                                   0.0092081305 2.219621e-01
## 106
         AnySection
                       P.SEC.EPI -0.0092028728 2.222261e-01
## 329
        DontPublish
                       P.SEC.SGG -0.0086573257 2.508579e-01
  193
            USA.CAN
                       P.SEC.MHS
                                   0.0086374420 2.519479e-01
## 565
        DontPublish
                      P.SEC.TSHS
                                   0.0082807928 2.720627e-01
##
  352
         AnySection
                        P.SEC.SI
                                   0.0082487977 2.739195e-01
## 92
                                   0.0081397838 2.803108e-01
         AnySection
                      P.SEC.ENVR
## 302
                                   0.0078730477 2.963736e-01
             JSMtot
                      P.SEC.SDNS
## 254
         AnySection
                        P.SEC.QP
                                 -0.0078614362 2.970865e-01
## 49
        DontPublish
                      P.SEC.BIOP
                                   0.0078529689 2.976071e-01
## 279
            USA.CAN
                      P.SEC.SBSS
                                   0.0076477393 3.104124e-01
## 137
                                   0.0076062541 3.130444e-01
         AnySection
                      P.SEC.GRPH
## 500
        DontPublish
                      P.SEC.SRMS
                                   0.0076021170 3.133077e-01
##
  436
         AnySection
                       P.SEC.SOC
                                   0.0074547305 3.227822e-01
## 472 AgeJoinedASA
                      P.SEC.SPES
                                   0.0074237170 3.247994e-01
## 503 AgeJoinedASA
                      P.SEC.SRMS
                                   0.0072887107 3.336760e-01
## 534
                      P.SEC.SSPA -0.0072480786 3.363779e-01
                Age
## 357
                Age
                        P.SEC.SI
                                   0.0069594707 3.559726e-01
  327
             JSMtot
                       P.SEC.SGG
                                   0.0068379227 3.644362e-01
                                   0.0065608127 3.841969e-01
##
  28
       AgeJoinedASA
                       InChapter
##
  217
       AgeJoinedASA
                      P.SEC.MKTG
                                   0.0063475023 3.998459e-01
                                   0.0062492747 4.071792e-01
   386
          InChapter
                       P.SEC.SIS
  307 AgeJoinedASA
                      P.SEC.SDNS -0.0060111023 4.252899e-01
## 469
        DontPublish
                      P.SEC.SPES -0.0058593561 4.370701e-01
## 468
            USA.CAN
                      P.SEC.SPES
                                   0.0058549913 4.374117e-01
## 122
             JSMtot
                      P.SEC.GOVT
                                   0.0055348250 4.628843e-01
## 6
            USA.CAN
                     DontPublish -0.0054636793 4.686549e-01
             JSMtot
## 138
                      P.SEC.GRPH
                                  0.0054213532 4.721068e-01
                        P.SEC.BE -0.0054103460 4.730068e-01
## 32
        DontPublish
  326
         AnySection
                       P.SEC.SGG
                                  0.0053932744 4.744045e-01
                      P.SEC.BIOP -0.0052204379 4.886819e-01
## 52
       AgeJoinedASA
                                  0.0050525305 5.027709e-01
  112 AgeJoinedASA
                       P.SEC.EPI
## 57
             JSMtot
                      P.SEC.CNSL -0.0050290028 5.047621e-01
  98
       AgeJoinedASA
                      P.SEC.ENVR
                                  0.0049221969 5.138533e-01
             JSMtot
                      P.SEC.EDUC -0.0048804733 5.174278e-01
##
  80
##
  385 AgeJoinedASA
                       P.SEC.SIS -0.0048231190 5.223623e-01
## 79
         AnySection
                      P.SEC.EDUC -0.0046016023 5.416450e-01
## 124
        DontPublish
                      P.SEC.GOVT -0.0045878282 5.428556e-01
## 214
        DontPublish
                      P.SEC.MKTG -0.0045461666 5.465256e-01
## 109
        DontPublish
                       P.SEC.EPI
                                   0.0045432958 5.467789e-01
## 234
            USA.CAN
                      P.SEC.NPAR
                                   0.0044437692 5.555976e-01
  143
      AgeJoinedASA
                      P.SEC.GRPH
                                   0.0043595999 5.631093e-01
## 211
         AnySection
                      P.SEC.MKTG -0.0043042912 5.680718e-01
## 44
                                  0.0043042102 5.680791e-01
          InChapter
                      P.SEC.BIOM
## 160 AgeJoinedASA
                      P.SEC.HPSS
                                   0.0042853693 5.697744e-01
## 277
         AnySection
                      P.SEC.SBSS
                                   0.0041973887 5.777225e-01
## 31
            USA.CAN
                        P.SEC.BE 0.0040012795 5.956242e-01
```

```
## 177
                       P.SEC.MDD -0.0038856982 6.062920e-01
                Age
                      P.SEC.HPSS -0.0035795122 6.349561e-01
## 155
             JSMtot
         AnySection
## 529
                      P.SEC.SSPA -0.0035016585 6.423349e-01
## 379
         AnySection
                       P.SEC.SIS -0.0034318031 6.489859e-01
##
  467
             JSMtot
                      P.SEC.SPES
                                  0.0033030630 6.613166e-01
  280
##
       DontPublish
                      P.SEC.SBSS
                                  0.0032737477 6.641374e-01
##
  70
        DontPublish
                      P.SEC.COMP -0.0030804412 6.828560e-01
## 73
       AgeJoinedASA
                      P.SEC.COMP
                                  0.0030039672 6.903162e-01
##
  588
          P.SEC.SGG
                      P.SEC.TSHS -0.0029298094 6.975794e-01
##
  342
         P.SEC.GOVT
                       P.SEC.SGG -0.0028972693 7.007752e-01
  178
      AgeJoinedASA
                       P.SEC.MDD -0.0028858944 7.018937e-01
  188
                       P.SEC.MDD -0.0028467971 7.057427e-01
##
         P.SEC.GOVT
##
  486
          P.SEC.MHS
                      P.SEC.SPES -0.0028419019 7.062252e-01
## 382
       DontPublish
                       P.SEC.SIS -0.0028406296 7.063506e-01
## 94
            USA.CAN
                      P.SEC.ENVR 0.0028256162 7.078311e-01
## 462
          P.SEC.SGG
                       P.SEC.SOC -0.0027461689 7.156839e-01
## 358
                        P.SEC.SI -0.0026646333 7.237745e-01
      AgeJoinedASA
  212
                      P.SEC.MKTG -0.0025925347 7.309545e-01
             JSMtot
  535
      AgeJoinedASA
                      P.SEC.SSPA -0.0025424705 7.359541e-01
                       P.SEC.EPI
  113
          InChapter
                                  0.0023743444 7.528249e-01
##
  59
        DontPublish
                      P.SEC.CNSL
                                  0.0023298322 7.573117e-01
  375
                        P.SEC.SI -0.0022995854 7.603652e-01
           P.SEC.QP
## 373
                        P.SEC.SI -0.0021712335 7.733640e-01
         P.SEC.MKTG
                       P.SEC.EPI -0.0021037218 7.802271e-01
## 107
             JSMtot
## 437
             JSMtot
                       P.SEC.SOC
                                  0.0020854483 7.820877e-01
## 568
      AgeJoinedASA
                      P.SEC.TSHS
                                  0.0019834023 7.925007e-01
         P.SEC.SDNS
                       P.SEC.SGG -0.0019151677 7.994843e-01
##
  351
##
  194
       DontPublish
                       P.SEC.MHS -0.0018109043 8.101862e-01
## 40
        DontPublish
                      P.SEC.BIOM 0.0015271992 8.394813e-01
## 410
        DontPublish
                      P.SEC.SLDM -0.0014786865 8.445142e-01
## 174
            USA.CAN
                       P.SEC.MDD
                                  0.0014703511 8.453795e-01
## 532
       DontPublish
                      P.SEC.SSPA
                                  0.0013696919 8.558446e-01
## 175
        DontPublish
                       P.SEC.MDD
                                  0.0012612671 8.671453e-01
## 354
            USA.CAN
                        P.SEC.SI -0.0012161417 8.718567e-01
  331
                       P.SEC.SGG -0.0011508622 8.786804e-01
                Age
                      P.SEC.NPAR -0.0011180557 8.821131e-01
##
  235
       DontPublish
## 332
       AgeJoinedASA
                       P.SEC.SGG 0.0009934063 8.951754e-01
## 330
            MEMTYPE
                       P.SEC.SGG -0.0009109805 9.038288e-01
  355
                        P.SEC.SI -0.0008162894 9.137840e-01
##
       DontPublish
## 93
                      P.SEC.ENVR 0.0007820961 9.173822e-01
             JSMtot
  257
       DontPublish
                        P.SEC.QP -0.0006928156 9.267853e-01
  62
                      P.SEC.CNSL -0.0006033013 9.362232e-01
##
       AgeJoinedASA
##
  439
       DontPublish
                       P.SEC.SOC
                                  0.0005096137 9.461108e-01
## 562
         AnySection
                      P.SEC.TSHS -0.0004920912 9.479610e-01
## 498
             JSMtot
                      P.SEC.SRMS
                                 0.0004794515 9.492958e-01
## 47
                      P.SEC.BIOP -0.0003350201 9.645579e-01
             JSMtot
## 413 AgeJoinedASA
                      P.SEC.SLDM -0.0003169303 9.664705e-01
## 239
          InChapter
                      P.SEC.NPAR -0.0001244345 9.868322e-01
                      P.SEC.ENVR -0.0001162034 9.877032e-01
## 95
        DontPublish
## 29
         AnySection
                        P.SEC.BE -0.0001022352 9.891812e-01
                        P.SEC.QP 0.0001007073 9.893429e-01
## 256
            USA.CAN
```