```
> source("../source/results_by_factors.r",echo=T)

> results.sales.by.grade.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total")

> print(results.sales.by.grade.trmean)
results.7$grade: A
    sales08     sales09     sales10 sales.total
   20430.71    26243.00    30930.24    77603.94
-----------------------------------------------------------------------------------
results.7$grade: B
    sales08     sales09     sales10 sales.total
   45175.42    22790.33    27778.79   125509.68
-----------------------------------------------------------------------------------
results.7$grade: C
    sales08     sales09     sales10 sales.total
   11458.14    15333.96    14911.00    42271.19

> results.jobs.by.grade.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],res

> print(results.jobs.by.grade.trmean)
results.7$grade: A
     jobs08      jobs09      jobs10 jobs.total
   236.5294    354.7647    425.7647  1017.0588
-----------------------------------------------------------------------------------
results.7$grade: B
     jobs08      jobs09      jobs10 jobs.total
   418.1111    316.7368    390.6000  1262.1667
-----------------------------------------------------------------------------------
results.7$grade: C
     jobs08      jobs09      jobs10 jobs.total
   40.36364    48.40741    57.07407  152.10000

> results.corp.by.grade.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],res

> print(results.corp.by.grade.trmean)
results.7$grade: A
     corp08      corp09      corp10 corp.total
   6.230769    7.066667    6.692308  22.333333
-----------------------------------------------------------------------------------
results.7$grade: B
     corp08      corp09      corp10 corp.total
   5.461538    5.666667    3.769231  17.000000
-----------------------------------------------------------------------------------
results.7$grade: C
     corp08      corp09      corp10 corp.total
  15.363636    7.947368    4.444444  42.777778

> results.export.by.grade.trmean<-by(results.7[,c("export08","export09","export10","export.to

> print(results.export.by.grade.trmean)
results.7$grade: A
    export08    export09    export10 export.total
    1575071     2190165     2789879      7586433
-----------------------------------------------------------------------------------
results.7$grade: B
    export08    export09    export10 export.total
    2293939     2107442     3171480      8756372
-----------------------------------------------------------------------------------
results.7$grade: C
    export08    export09    export10 export.total
   997377.3   1345383.5   1687106.3    5007708.1
```

```
> results.income.household.by.grade.trmean<-by(results.7[household, c("income08","income09","

> print(results.income.household.by.grade.trmean)
results.7$grade[household]: A
    income08      income09      income10 income.total
    27.16667      34.66667      36.00000     97.83333
-------------------------------------------------------------------------------
results.7$grade[household]: B
    income08      income09      income10 income.total
    51.44444      58.60000      55.10000    177.11111
-------------------------------------------------------------------------------
results.7$grade[household]: C
    income08      income09      income10 income.total
    67.33333      62.26667      69.13333    198.73333

> results.income.total.by.grade.trmean<-by(results.7[total, c("income08","income09","income10

> print(results.income.total.by.grade.trmean)
results.7$grade[total]: A
    income08      income09      income10 income.total
     22852.4       12504.2       15105.2      50461.8
-------------------------------------------------------------------------------
results.7$grade[total]: B
    income08      income09      income10 income.total
    18781.00      14524.82      18519.64     51825.45
-------------------------------------------------------------------------------
results.7$grade[total]: C
    income08      income09      income10 income.total
    22495.56      18888.40       4589.60     48786.25

> results.leader.by.grade.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.to

> print(results.leader.by.grade.trmean)
results.7$grade: A
    leader08      leader09      leader10 leader.total
    102.7333      205.1176      220.9412     574.9333
-------------------------------------------------------------------------------
results.7$grade: B
    leader08      leader09      leader10 leader.total
    322.9474      226.0526      131.7368     810.6316
-------------------------------------------------------------------------------
results.7$grade: C
    leader08      leader09      leader10 leader.total
    151.0476      191.7200      186.1667     680.4211

> results.sales.by.Region.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total"

> print(results.sales.by.Region.trmean)
results.7$Region: 영남
     sales08       sales09       sales10 sales.total
    12997.72      19748.39      22666.33    56241.67
-------------------------------------------------------------------------------
results.7$Region: 중부
     sales08       sales09       sales10 sales.total
    14199.53      18047.80      19862.10    54764.84
-------------------------------------------------------------------------------
results.7$Region: 호남
     sales08       sales09       sales10 sales.total
    48739.06      22329.72      26589.32   128670.11
```

```
> results.jobs.by.Region.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],re

> print(results.jobs.by.Region.trmean)
results.7$Region: 영남
    jobs08      jobs09      jobs10 jobs.total
  108.1667    121.5263    139.9444   716.1053
-------------------------------------------------------------------------------
results.7$Region: 중부
    jobs08      jobs09      jobs10 jobs.total
 193.30000    87.22727   175.27273  576.73684
-------------------------------------------------------------------------------
results.7$Region: 호남
    jobs08      jobs09      jobs10 jobs.total
  241.8421    257.0000    246.8182  1007.8947

> results.corp.by.Region.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],re

> print(results.corp.by.Region.trmean)
results.7$Region: 영남
    corp08      corp09      corp10 corp.total
  8.636364    6.285714    4.461538  24.777778
-------------------------------------------------------------------------------
results.7$Region: 중부
    corp08      corp09      corp10 corp.total
 12.272727    9.666667    9.214286  40.111111
-------------------------------------------------------------------------------
results.7$Region: 호남
    corp08      corp09      corp10 corp.total
  6.066667    4.666667    5.789474  18.285714

> results.income.household.by.Region.trmean<-by(results.7[household, c("income08","income09",

> print(results.income.household.by.Region.trmean)
results.7$Region[household]: 영남
    income08     income09     income10 income.total
    40.53846     45.69231     48.00000   134.23077
-------------------------------------------------------------------------------
results.7$Region[household]: 중부
    income08     income09     income10 income.total
    69.00000     79.30769     83.00000   231.30769
-------------------------------------------------------------------------------
results.7$Region[household]: 호남
    income08     income09     income10 income.total
    37.50000     28.27273     28.81818    99.70000

> results.income.total.by.Region.trmean<-by(results.7[total, c("income08","income09","income1

> print(results.income.total.by.Region.trmean)
results.7$Region[total]: 영남
    income08     income09     income10 income.total
    6719.333     7179.167    12254.833    26153.333
-------------------------------------------------------------------------------
results.7$Region[total]: 중부
    income08     income09     income10 income.total
  16201.273     8905.300     7585.818    32773.100
-------------------------------------------------------------------------------
results.7$Region[total]: 호남
    income08     income09     income10 income.total
    38097.88     27905.00     18685.00    91003.50

> results.leader.by.Region.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.t
```

```
> print(results.leader.by.grade.trmean)
results.7$grade: A
    leader08      leader09      leader10 leader.total
    102.7333      205.1176      220.9412     574.9333
------------------------------------------------------------------------
results.7$grade: B
    leader08      leader09      leader10 leader.total
    322.9474      226.0526      131.7368     810.6316
------------------------------------------------------------------------
results.7$grade: C
    leader08      leader09      leader10 leader.total
    151.0476      191.7200      186.1667     680.4211


> results.sales.by.class.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total")

> print(results.sales.by.class.trmean)
results.7$class: Better
    sales08      sales09       sales10 sales.total
   20852.92     30094.88      33225.77    95512.79
------------------------------------------------------------------------
results.7$class: Middle
    sales08      sales09       sales10 sales.total
   13286.61     14193.67      18506.89    45987.17
------------------------------------------------------------------------
results.7$class: Under
    sales08      sales09       sales10 sales.total
   32011.80     30693.94      26939.22    97985.93


> results.jobs.by.class.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],res

> print(results.jobs.by.class.trmean)
results.7$class: Better
    jobs08       jobs09        jobs10 jobs.total
   262.9167     256.3793      288.0000    964.8696
------------------------------------------------------------------------
results.7$class: Middle
    jobs08       jobs09        jobs10 jobs.total
   178.7778     255.5000      258.4118    713.6471
------------------------------------------------------------------------
results.7$class: Under
    jobs08       jobs09        jobs10 jobs.total
  180.58824     87.61111     251.63158   552.35294

> results.corp.by.class.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],res

> print(results.corp.by.class.trmean)
results.7$class: Better
   corp08       corp09        corp10 corp.total
 13.687500    10.000000      4.444444   39.769231
------------------------------------------------------------------------
results.7$class: Middle
    corp08       corp09        corp10 corp.total
   5.818182     6.666667      5.357143   20.545455
------------------------------------------------------------------------
results.7$class: Under
    corp08       corp09        corp10 corp.total
   3.800000     3.466667      5.083333   12.125000
```

```
> results.export.by.class.trmean<-by(results.7[,c("export08","export09","export10","export.to

> print(results.export.by.class.trmean)
results.7$class: Better
    export08       export09       export10 export.total
    1732106        1664408        2033172      8320542
--------------------------------------------------------------------------------
results.7$class: Middle
    export08       export09       export10 export.total
    1531527        1550987        1931611      6018646
--------------------------------------------------------------------------------
results.7$class: Under
    export08       export09       export10 export.total
    1505363        1449990        2254464      6462238

> results.income.household.by.class.trmean<-by(results.7[household, c("income08","income09","

> print(results.income.household.by.class.trmean)
results.7$class[household]: Better
    income08       income09       income10 income.total
    62.00000       66.05882       72.23529    200.29412
--------------------------------------------------------------------------------
results.7$class[household]: Middle
    income08       income09       income10 income.total
    33.66667       31.70000       33.00000    104.88889
--------------------------------------------------------------------------------
results.7$class[household]: Under
    income08       income09       income10 income.total
        44.2           49.6           46.2        140.0

> results.income.total.by.class.trmean<-by(results.7[total,c("income08","income09","income10"

> print(results.income.total.by.class.trmean)
results.7$class[total]: Better
    income08       income09     income10 income.total
    28959.55       20367.92     11658.45     64444.30
--------------------------------------------------------------------------------
results.7$class[total]: Middle
    income08       income09     income10 income.total
   19113.333      12471.000     9386.857    42505.667
--------------------------------------------------------------------------------
results.7$class[total]: Under
    income08       income09     income10 income.total
    11259.75       11492.12     16398.38     39150.25

> results.leader.by.class.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.to

> print(results.leader.by.grade.trmean)
results.7$grade: A
    leader08       leader09     leader10 leader.total
    102.7333       205.1176     220.9412    574.9333
--------------------------------------------------------------------------------
results.7$grade: B
    leader08       leader09     leader10 leader.total
    322.9474       226.0526     131.7368    810.6316
--------------------------------------------------------------------------------
results.7$grade: C
    leader08       leader09     leader10 leader.total
    151.0476       191.7200     186.1667    680.4211
```