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

> results.sales.by.grade.median<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$grade,summary)

> print(results.sales.by.grade.median)
results.7$grade: A
    sales08          sales09         sales10         sales.total
 Min.   :  560   Min.   :  980   Min.   : 1100   Min.   :  2640
 1st Qu.: 4430   1st Qu.: 7090   1st Qu.: 7433   1st Qu.: 17683
 Median :11236   Median :16026   Median :20300   Median : 44622
 Mean   :20431   Mean   :26243   Mean   :30930   Mean   : 77604
 3rd Qu.:31000   3rd Qu.:45294   3rd Qu.:51000   3rd Qu.:132000
 Max.   :90600   Max.   :89931   Max.   :79687   Max.   :215319
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
    sales08          sales09         sales10         sales.total
 Min.   :   190   Min.   :   628   Min.   :   457   Min.   :   1702
 1st Qu.:  1900   1st Qu.:  3666   1st Qu.:  4203   1st Qu.:  12316
 Median :  4947   Median : 10520   Median : 12310   Median :  32718
 Mean   : 45175   Mean   : 36572   Mean   : 38068   Mean   : 125510
 3rd Qu.: 14710   3rd Qu.: 15008   3rd Qu.: 21403   3rd Qu.:  44370
 Max.   :391742   Max.   :320583   Max.   :271179   Max.   :921762
 NA's   :     3   NA's   :     2   NA's   :     1   NA's   :      3
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
    sales08          sales09         sales10         sales.total
 Min.   :   495   Min.   :   345   Min.   :    89   Min.   :   1679
 1st Qu.:  1938   1st Qu.:  3392   1st Qu.:  2988   1st Qu.:   9843
 Median :  5000   Median :  9276   Median :  9827   Median :  18874
 Mean   : 17657   Mean   : 21986   Mean   : 38212   Mean   :  82024
 3rd Qu.: 11188   3rd Qu.: 19363   3rd Qu.: 17386   3rd Qu.:  46623
 Max.   :165000   Max.   :196626   Max.   :635562   Max.   :997188
 NA's   :     8   NA's   :     6   NA's   :     5   NA's   :      8

> results.sales.by.grade.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$grade,mean, trim=5, na.rm=T)

> print(results.sales.by.grade.trmean)
results.7$grade: A
   sales08     sales09     sales10 sales.total
     11236       16026       20300       44622
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
   sales08     sales09     sales10 sales.total
    4947.0     10519.5     12310.0     32718.0
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
   sales08     sales09     sales10 sales.total
      5000        9276        9827       18874

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

> print(results.jobs.by.grade.median)
results.7$grade: A
    jobs08           jobs09          jobs10          jobs.total
 Min.   :   2.0   Min.   :  16.0   Min.   :  18.0   Min.   :  45
 1st Qu.:  15.0   1st Qu.:  34.0   1st Qu.:  44.0   1st Qu.:  94
 Median :  38.0   Median : 112.0   Median : 102.0   Median : 321
 Mean   : 236.5   Mean   : 354.8   Mean   : 425.8   Mean   :1017
 3rd Qu.: 265.0   3rd Qu.: 305.0   3rd Qu.: 212.0   3rd Qu.: 725
 Max.   :2187.0   Max.   :2361.0   Max.   :2791.0   Max.   :6911
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
    jobs08           jobs09          jobs10          jobs.total
 Min.   :   8.00   Min.   :  11.0   Min.   :   6.0   Min.   :  37.0
 1st Qu.:  53.75   1st Qu.:  40.0   1st Qu.:  51.5   1st Qu.: 173.8
 Median : 130.00   Median : 139.0   Median : 113.5   Median : 588.0
 Mean   : 615.70   Mean   : 414.3   Mean   : 520.7   Mean   :1619.8
 3rd Qu.: 424.50   3rd Qu.: 332.0   3rd Qu.: 376.0   3rd Qu.:1002.8
 Max.   :4780.00   Max.   :2671.0   Max.   :3638.0   Max.   :9639.0
 NA's   :   2.00   NA's   :   1.0                    NA's   :   2.0
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
    jobs08          jobs09          jobs10          jobs.total
 Min.   :  1.0   Min.   :  2.00   Min.   :  2.00   Min.   : 17.00
 1st Qu.:  5.0   1st Qu.: 18.00   1st Qu.: 11.00   1st Qu.: 57.75
 Median : 23.0   Median : 33.00   Median : 31.00   Median :127.00
 Mean   : 43.5   Mean   : 53.55   Mean   : 65.97   Mean   :167.50
 3rd Qu.: 62.5   3rd Qu.: 74.00   3rd Qu.: 57.00   3rd Qu.:199.50
 Max.   :155.0   Max.   :244.00   Max.   :370.00   Max.   :626.00
 NA's   :  7.0   NA's   :  2.00   NA's   :  2.00   NA's   :  9.00

> results.jobs.by.grade.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],results.7$grade,mean, trim=5, na.rm=T)

> print(results.jobs.by.grade.trmean)
results.7$grade: A
  jobs08    jobs09    jobs10 jobs.total
      38       112       102       321
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
  jobs08    jobs09    jobs10 jobs.total
   130.0     139.0     113.5     588.0
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
  jobs08    jobs09    jobs10 jobs.total
      23        33        31       127

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

> print(results.corp.by.grade.median)
results.7$grade: A
    corp08           corp09          corp10          corp.total
 Min.   : 1.000   Min.   : 1.000   Min.   : 1.000   Min.   : 4.00
 1st Qu.: 2.000   1st Qu.: 2.500   1st Qu.: 1.000   1st Qu.: 7.00
 Median : 5.000   Median : 4.000   Median : 3.000   Median :22.33
 Mean   : 6.231   Mean   : 7.067   Mean   : 6.692   Mean   :16.50
 3rd Qu.:10.000   3rd Qu.:11.000   3rd Qu.:12.000   3rd Qu.:35.25
 Max.   :20.000   Max.   :24.000   Max.   :16.000   Max.   :52.00
 NA's   : 4.000   NA's   : 2.000   NA's   : 4.000   NA's   : 5.00
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
    corp08           corp09          corp10          corp.total
 Min.   : 1.000   Min.   : 1.000   Min.   : 1.000   Min.   : 3.0
 1st Qu.: 2.000   1st Qu.: 2.500   1st Qu.: 1.000   1st Qu.: 8.5
 Median : 3.000   Median : 5.000   Median : 2.000   Median :12.0
 Mean   : 5.462   Mean   : 5.667   Mean   : 3.769   Mean   :17.0
 3rd Qu.: 5.000   3rd Qu.: 9.000   3rd Qu.: 6.000   3rd Qu.:26.0
 Max.   :31.000   Max.   :14.000   Max.   :10.000   Max.   :40.0
 NA's   : 9.000   NA's   : 7.000   NA's   : 9.000   NA's   :11.0
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
    corp08          corp09          corp10          corp.total
 Min.   : 1.00   Min.   : 1.000   Min.   : 1.00   Min.   :  3.00
 1st Qu.: 3.50   1st Qu.: 1.500   1st Qu.: 1.00   1st Qu.:  8.00
 Median : 5.00   Median : 2.000   Median : 2.00   Median : 12.00
 Mean   :15.36   Mean   : 7.947   Mean   : 8.05   Mean   : 42.78
 3rd Qu.:13.00   3rd Qu.: 4.000   3rd Qu.: 4.25   3rd Qu.: 42.00
 Max.   :75.00   Max.   :77.000   Max.   :80.00   Max.   :232.00
 NA's   :20.00   NA's   :12.000   NA's   :11.00   NA's   : 22.00

> results.corp.by.grade.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],results.7$grade,mean, trim=5, na.rm=T)

> print(results.corp.by.grade.trmean)
results.7$grade: A
  corp08    corp09    corp10 corp.total
     5.0       4.0       3.0       16.5
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
  corp08    corp09    corp10 corp.total
       3         5         2         12
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: C
  corp08    corp09    corp10 corp.total
       5         2         2         12

> results.export.by.grade.median<-by(results.7[,c("export08","export09","export10","export.total")],results.7$grade,summary)

> print(results.export.by.grade.median)
results.7$grade: A
    export08           export09          export10          export.total
 Min.   :  48000   Min.   :   9100   Min.   :   18000   Min.   :  268000
 1st Qu.: 108750   1st Qu.: 122000   1st Qu.:  130500   1st Qu.:  427300
 Median : 350500   Median : 390500   Median :  488000   Median : 1610000
 Mean   :1575071   Mean   :2190165   Mean   : 2789879   Mean   : 7586433
 3rd Qu.:2907250   3rd Qu.:3175282   3rd Qu.: 2790895   3rd Qu.: 9400000
 Max.   :7413000   Max.   :18192000   Max.   :25533000   Max.   :51138000
 NA's   :      3   NA's   :      1   NA's   :       2   NA's   :       4
-------------------------------------------------------------------------------------------------------------------------
results.7$grade: B
    export08           export09          export10          export.total
```

```
 Min.   :  38000   Min.   :     588   Min.   :    3432   Min.   :   94866
 1st Qu.: 110250   1st Qu.:   49858   1st Qu.:  212194   1st Qu.:  690089
 Median : 353000   Median :  189330   Median :  394000   Median : 1219500
 Mean   : 2293939   Mean   : 2107442   Mean   : 3171480   Mean   : 8756372
 3rd Qu.: 2216750  3rd Qu.:  982606   3rd Qu.: 1200750   3rd Qu.: 8625500
 Max.   :11000000  Max.   :12081000   Max.   :15397000   Max.   :36571000
 NA's   :     10   NA's   :       6   NA's   :       8   NA's   :      10
-------------------------------------------------------------------------------------------------------
results.7$grade: C
     export08          export09          export10          export.total
 Min.   :   2000   Min.   :   2458   Min.   :    4382   Min.   :    8840
 1st Qu.: 102696   1st Qu.: 209316   1st Qu.:  431000   1st Qu.:  831250
 Median : 375500   Median : 419000   Median :  630000   Median : 3110000
 Mean   : 997377   Mean   :1345384   Mean   : 1687106   Mean   : 5007708
 3rd Qu.:2005000   3rd Qu.:1346500   3rd Qu.: 3380000   3rd Qu.: 8968250
 Max.   :3022000   Max.   :7830000   Max.   : 5484000   Max.   :15314000
 NA's   :     19   NA's   :      16   NA's   :      18   NA's   :      21

> results.export.by.grade.trmean<-by(results.7[,c("export08","export09","export10","export.total")],results.7$grade,mean, trim=5, na.rm=T)

> print(results.export.by.grade.trmean)
results.7$grade: A
   export08   export09   export10 export.total
     350500     390500     488000      1610000
-------------------------------------------------------------------------------------------------------
results.7$grade: B
   export08   export09   export10 export.total
   353000.0   189330.5   394000.0    1219500.0
-------------------------------------------------------------------------------------------------------
results.7$grade: C
   export08   export09   export10 export.total
     375500     419000     630000      3110000

> results.income.household.by.grade.median<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$grade[household],su .... [TRUNCATED]

> print(results.income.household.by.grade.median)
results.7$grade[household]: A
    income08          income09          income10          income.total
 Min.   :  2.00   Min.   :  1.00   Min.   :   5.00   Min.   : 14.00
 1st Qu.: 10.50   1st Qu.: 10.00   1st Qu.:  11.00   1st Qu.: 30.75
 Median : 17.00   Median : 20.00   Median :  21.50   Median : 58.50
 Mean   : 27.17   Mean   : 34.67   Mean   :  36.00   Mean   : 97.83
 3rd Qu.: 29.00   3rd Qu.: 31.25   3rd Qu.:  35.75   3rd Qu.: 95.25
 Max.   :115.00   Max.   :173.00   Max.   : 160.00   Max.   :448.00
-------------------------------------------------------------------------------------------------------
results.7$grade[household]: B
    income08          income09          income10          income.total
 Min.   : 11.00   Min.   :  2.00   Min.   :   3.0   Min.   : 25.0
 1st Qu.: 19.00   1st Qu.: 28.75   1st Qu.:  34.0   1st Qu.: 90.0
 Median : 50.00   Median : 47.00   Median :  49.5   Median :163.0
 Mean   : 51.44   Mean   : 58.60   Mean   :  55.1   Mean   :177.1
 3rd Qu.: 67.00   3rd Qu.: 69.75   3rd Qu.:  63.5   3rd Qu.:216.0
 Max.   :116.00   Max.   :212.00   Max.   : 175.0   Max.   :503.0
 NA's   :  1.00                                     NA's   :  1.0
-------------------------------------------------------------------------------------------------------
results.7$grade[household]: C
    income08          income09          income10          income.total
 Min.   :  5.00   Min.   :  5.00   Min.   :   9.00   Min.   : 19.0
 1st Qu.: 24.50   1st Qu.: 18.00   1st Qu.:  21.50   1st Qu.: 68.0
 Median : 40.00   Median : 36.00   Median :  39.00   Median :112.0
 Mean   : 67.33   Mean   : 62.27   Mean   :  69.13   Mean   :198.7
 3rd Qu.: 59.00   3rd Qu.: 40.50   3rd Qu.:  68.00   3rd Qu.:163.0
 Max.   :382.00   Max.   :417.00   Max.   : 429.00   Max.   :1228.0

> results.income.household.by.grade.trmean<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$grade[household], m .... [TRUNCATED]

> print(results.income.household.by.grade.trmean)
results.7$grade[household]: A
  income08   income09 income10 income.total
      17.0       20.0     21.5         58.5
-------------------------------------------------------------------------------------------------------
results.7$grade[household]: B
  income08   income09 income10 income.total
      50.0       47.0     49.5        163.0
-------------------------------------------------------------------------------------------------------
results.7$grade[household]: C
  income08   income09 income10 income.total
        40         36       39          112

> results.income.total.by.grade.median<-by(results.7[total, c("income08","income09","income10","income.total")],results.7$grade[total],summary)

> print(results.income.total.by.grade.median)
results.7$grade[total]: A
    income08          income09          income10          income.total
 Min.   :  1000   Min.   :  1600   Min.   :   1760   Min.   :   4360
 1st Qu.: 1283   1st Qu.: 2885   1st Qu.:  5047   1st Qu.:  9215
 Median : 6429   Median : 6199   Median :  8612   Median : 21240
 Mean   :22852   Mean   :12504   Mean   : 15105   Mean   : 50462
 3rd Qu.:14950   3rd Qu.:20400   3rd Qu.: 28507   3rd Qu.: 63857
 Max.   :90600   Max.   :31437   Max.   : 31600   Max.   :153637
-------------------------------------------------------------------------------------------------------
results.7$grade[total]: B
    income08          income09          income10          income.total
 Min.   :  180   Min.   :  401   Min.   :   419   Min.   :  1000
 1st Qu.: 3810   1st Qu.: 3486   1st Qu.:  5534   1st Qu.: 15068
 Median : 9852   Median :14808   Median : 15906   Median : 36137
 Mean   :18781   Mean   :14525   Mean   : 18520   Mean   : 51825
 3rd Qu.:14384   3rd Qu.:17788   3rd Qu.: 18979   3rd Qu.: 46037
 Max.   :123980  Max.   :58590   Max.   : 84233   Max.   :266803
-------------------------------------------------------------------------------------------------------
results.7$grade[total]: C
    income08          income09          income10          income.total
 Min.   :   104   Min.   :   154   Min.   :  180.0   Min.   :   563
 1st Qu.:  800   1st Qu.:  945   1st Qu.:  531.5   1st Qu.:  2822
 Median :10000   Median : 6007   Median : 1214.5   Median : 23246
 Mean   :22496   Mean   :18888   Mean   : 4589.6   Mean   : 48786
 3rd Qu.:22800   3rd Qu.:13500   3rd Qu.: 9423.5   3rd Qu.: 36421
 Max.   :128160  Max.   :123940  Max.   :14500.0   Max.   :263302
 NA's   :    3   NA's   :    2   NA's   :   2.0   NA's   :    4

> results.income.total.by.grade.trmean<-by(results.7[total, c("income08","income09","income10","income.total")],results.7$grade[total], mean, trim=5, .... [TRUNCATED]

> print(results.income.total.by.grade.trmean)
results.7$grade[total]: A
  income08   income09 income10 income.total
      6429       6199     8612        21240
-------------------------------------------------------------------------------------------------------
results.7$grade[total]: B
  income08   income09 income10 income.total
      9852      14808    15906        36137
-------------------------------------------------------------------------------------------------------
results.7$grade[total]: C
  income08   income09 income10 income.total
   10000.0     6907.0   1214.5      23245.5

> results.leader.by.grade.median<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$grade,summary)

> print(results.leader.by.grade.median)
results.7$grade: A
    leader08          leader09          leader10          leader.total
 Min.   : 30.0   Min.   : 15.0   Min.   :  20.0   Min.   : 120.0
 1st Qu.: 45.0   1st Qu.: 83.0   1st Qu.:  80.0   1st Qu.: 256.5
 Median : 80.0   Median :103.0   Median : 126.0   Median : 405.0
 Mean   :102.7   Mean   :205.1   Mean   : 220.9   Mean   : 574.9
 3rd Qu.:119.5   3rd Qu.:181.0   3rd Qu.: 285.0   3rd Qu.: 621.0
 Max.   :343.0   Max.   :802.0   Max.   : 791.0   Max.   :1600.0
 NA's   :  2.0                                     NA's   :  2.0
-------------------------------------------------------------------------------------------------------
results.7$grade: B
    leader08          leader09          leader10          leader.total
 Min.   : 16.0   Min.   : 25.0   Min.   :  23.0   Min.   :  73.0
 1st Qu.: 37.0   1st Qu.: 53.0   1st Qu.:  50.0   1st Qu.: 205.0
 Median : 79.0   Median :116.0   Median :  94.0   Median : 412.0
 Mean   :322.9   Mean   :289.7   Mean   : 162.4   Mean   : 810.6
 3rd Qu.:224.5   3rd Qu.:301.0   3rd Qu.: 178.0   3rd Qu.: 641.0
 Max.   :2430.0  Max.   :1764.0  Max.   : 884.0   Max.   :4439.0
 NA's   :  3.0   NA's   :  1.0   NA's   :   1.0   NA's   :  3.0
-------------------------------------------------------------------------------------------------------
results.7$grade: C
    leader08          leader09          leader10          leader.total
 Min.   :  25.0   Min.   : 24.0   Min.   :  30.00   Min.   :  105
 1st Qu.:  47.0   1st Qu.: 76.0   1st Qu.:  78.75   1st Qu.:  203
 Median :  79.0   Median :128.0   Median : 114.50   Median :  383
 Mean   : 599.7   Mean   :245.1   Mean   : 230.69   Mean   : 1157
 3rd Qu.: 160.0   3rd Qu.:278.0   3rd Qu.: 305.00   3rd Qu.:  983
 Max.   :10596.0  Max.   :1800.0  Max.   :1500.00   Max.   :11266
 NA's   :   8.0   NA's   :  4.0   NA's   :   5.00   NA's   :   10

> results.leader.by.grade.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$grade,mean, trim=5, na.rm=T)
```

```
> print(results.leader.by.grade.trmean)
results.7$grade: A
   leader08      leader09     leader10 leader.total
        80           103          126          405
----------------------------------------------------------------------------------------------------
results.7$grade: B
   leader08      leader09     leader10 leader.total
        79           116           94          412
----------------------------------------------------------------------------------------------------
results.7$grade: C
   leader08      leader09     leader10 leader.total
      79.0         128.0        114.5        383.0

> results.sales.by.Region.median<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$Region,summary)

> print(results.sales.by.Region.median)
results.7$Region: 영남
    sales08          sales09          sales10         sales.total
 Min.   :  495   Min.   :  745   Min.   :  457   Min.   :  1702
 1st Qu.:  4080  1st Qu.:  6847  1st Qu.:  5694  1st Qu.: 17204
 Median :  7136  Median : 11868  Median : 14288  Median : 33657
 Mean   : 14973  Mean   : 22307  Mean   : 24473  Mean   : 61753
 3rd Qu.: 13732  3rd Qu.: 21221  3rd Qu.: 27206  3rd Qu.: 56926
 Max.   : 65000  Max.   : 89931  Max.   : 81000  Max.   :221000
 NA's   :  1     NA's   :  1     NA's   :  1     NA's   :  1
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
    sales08          sales09          sales10         sales.total
 Min.   :   223  Min.   :   628  Min.   :   180  Min.   :  1679
 1st Qu.:  1950  1st Qu.:  2986  1st Qu.:  3578  1st Qu.:  9530
 Median :  4430  Median :  7494  Median : 11540  Median : 23461
 Mean   : 20715  Mean   : 25373  Mean   : 45776  Mean   : 97114
 3rd Qu.: 21597  3rd Qu.: 29259  3rd Qu.: 28202  3rd Qu.: 99670
 Max.   :165000  Max.   :196626  Max.   :635562  Max.   :997188
 NA's   :  4     NA's   :  3     NA's   :  2     NA's   :  4
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
    sales08          sales09          sales10         sales.total
 Min.   :   190  Min.   :   345  Min.   :    89  Min.   :  2640
 1st Qu.:  3744  1st Qu.:  4628  1st Qu.:  4203  1st Qu.: 15456
 Median :  5202  Median : 11277  Median :  9865  Median : 30870
 Mean   : 48739  Mean   : 36143  Mean   : 36975  Mean   :128870
 3rd Qu.: 19386  3rd Qu.: 20516  3rd Qu.: 25723  3rd Qu.: 61952
 Max.   :391742  Max.   :320583  Max.   :271179  Max.   :921762
 NA's   :  6     NA's   :  4     NA's   :  3     NA's   :  6

> results.sales.by.Region.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$Region,mean, trim=5, na.rm=T)

> print(results.sales.by.Region.trmean)
results.7$Region: 영남
    sales08      sales09    sales10 sales.total
    7135.5       11868.5     14288.0     33657.0
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
    sales08      sales09    sales10 sales.total
    4430.0        7494.5     11540.0     23461.0
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
    sales08      sales09    sales10 sales.total
    5202.0       11277.0      9865.0     30870.5

> results.jobs.by.Region.median<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],results.7$Region,summary)

> print(results.jobs.by.Region.median)
results.7$Region: 영남
    jobs08           jobs09           jobs10          jobs.total
 Min.   :    2.0  Min.   :    5.0  Min.   :    6.0  Min.   :   37.0
 1st Qu.:   19.5  1st Qu.:   31.0  1st Qu.:   45.0  1st Qu.:  125.0
 Median :   63.0  Median :   58.0  Median :   58.5  Median :  162.0
 Mean   :  206.8  Mean   :  222.6  Mean   :  244.4  Mean   :  716.1
 3rd Qu.:  178.0  3rd Qu.:  244.0  3rd Qu.:  270.5  3rd Qu.:  707.5
 Max.   : 2187.0  Max.   : 2361.0  Max.   : 2363.0  Max.   : 6911.0
 NA's   :    1.0                   NA's   :    1.0  NA's   :    2.0
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
    jobs08           jobs09           jobs10          jobs.total
 Min.   :    2.0  Min.   :    2.0  Min.   :    2.0  Min.   :   17.0
 1st Qu.:   11.0  1st Qu.:   17.5  1st Qu.:   17.0  1st Qu.:   74.0
 Median :   31.5  Median :   35.0  Median :   46.5  Median :  191.0
 Mean   :  393.1  Mean   :  191.3  Mean   :  312.3  Mean   :  981.6
 3rd Qu.:  149.2  3rd Qu.:  120.8  3rd Qu.:  124.8  3rd Qu.:  594.0
 Max.   : 4780.0  Max.   : 2671.0  Max.   : 3638.0  Max.   : 9639.0
 NA's   :    3.0  NA's   :    1.0  NA's   :    1.0  NA's   :    4.0
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
    jobs08           jobs09           jobs10          jobs.total
 Min.   :    1.0  Min.   :    9.0  Min.   :    2.0  Min.   :   17
 1st Qu.:   27.5  1st Qu.:   36.5  1st Qu.:   28.0  1st Qu.:  127
 Median :   50.0  Median :  109.5  Median :   58.5  Median :  212
 Mean   :  241.8  Mean   :  319.0  Mean   :  342.6  Mean   : 1008
 3rd Qu.:  152.5  3rd Qu.:  193.2  3rd Qu.:  223.8  3rd Qu.:  860
 Max.   : 1654.0  Max.   : 1868.0  Max.   : 2791.0  Max.   : 5334
 NA's   :    5.0  NA's   :    2.0                   NA's   :    5

> results.jobs.by.Region.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],results.7$Region,mean, trim=5, na.rm=T)

> print(results.jobs.by.Region.trmean)
results.7$Region: 영남
   jobs08      jobs09    jobs10 jobs.total
     63.0        58.0      58.5      162.0
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
   jobs08      jobs09    jobs10 jobs.total
     31.5        35.0      46.5      100.0
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
   jobs08      jobs09    jobs10 jobs.total
     50.0       109.5      58.5      212.0

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

> print(results.corp.by.Region.median)
results.7$Region: 영남
    corp08          corp09          corp10          corp.total
 Min.   : 1.000  Min.   : 1.000  Min.   : 1.000  Min.   : 4.00
 1st Qu.: 3.000  1st Qu.: 2.000  1st Qu.: 1.000  1st Qu.:14.00
 Median : 5.000  Median : 5.000  Median : 2.000  Median :24.00
 Mean   : 8.636  Mean   : 6.286  Mean   : 4.462  Mean   :24.78
 3rd Qu.: 9.000  3rd Qu.:11.250  3rd Qu.: 8.000  3rd Qu.:32.00
 Max.   :43.000  Max.   :13.000  Max.   :16.000  Max.   :52.00
 NA's   :10.000  NA's   : 7.000  NA's   : 8.000  NA's   :12.00
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
    corp08          corp09          corp10          corp.total
 Min.   : 1.00   Min.   : 1.000  Min.   : 1.000  Min.   :  3.00
 1st Qu.: 1.50   1st Qu.: 1.500  1st Qu.: 1.000  1st Qu.:  6.00
 Median : 2.00   Median : 3.000  Median : 2.000  Median : 10.00
 Mean   :12.27   Mean   : 9.667  Mean   : 9.214  Mean   : 40.11
 3rd Qu.: 8.50   3rd Qu.: 7.500  3rd Qu.: 5.500  3rd Qu.: 34.00
 Max.   :75.00   Max.   :77.000  Max.   :80.000  Max.   :232.00
 NA's   :14.00   NA's   :10.000  NA's   :11.000  NA's   : 16.00
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
    corp08          corp09          corp10          corp.total
 Min.   : 1.000  Min.   : 1.00   Min.   : 1.000  Min.   : 3.00
 1st Qu.: 2.000  1st Qu.: 2.00   1st Qu.: 2.000  1st Qu.: 7.25
 Median : 4.000  Median : 3.00   Median : 2.000  Median :10.50
 Mean   : 6.067  Mean   : 5.45   Mean   : 5.789  Mean   :18.29
 3rd Qu.: 8.500  3rd Qu.: 6.25   3rd Qu.: 7.500  3rd Qu.:28.00
 Max.   :20.000  Max.   :24.00   Max.   :28.000  Max.   :52.00
 NA's   : 9.000  NA's   : 4.00   NA's   : 5.000  NA's   :10.00

> results.corp.by.Region.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],results.7$Region,mean, trim=5, na.rm=T)

> print(results.corp.by.Region.trmean)
results.7$Region: 영남
   corp08      corp09    corp10 corp.total
        5           5         2         24
----------------------------------------------------------------------------------------------------
results.7$Region: 중부
   corp08      corp09    corp10 corp.total
        2           3         2         16
----------------------------------------------------------------------------------------------------
results.7$Region: 호남
   corp08      corp09    corp10 corp.total
      4.0         3.0       2.0       10.5

> results.income.household.by.Region.median<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$Region[household], .... [TRUNCATED]
```

```
> print(results.income.household.by.Region.median)
results.7$Region[household]: 영남
   income08         income09         income10       income.total
 Min.   :  4.00   Min.   :  5.00   Min.   :  5    Min.   : 14.0
 1st Qu.: 16.00   1st Qu.: 18.00   1st Qu.: 20    1st Qu.: 54.0
 Median : 26.00   Median : 35.00   Median : 34    Median : 98.0
 Mean   : 40.54   Mean   : 45.69   Mean   : 48    Mean   :134.2
 3rd Qu.: 43.00   3rd Qu.: 41.00   3rd Qu.: 64    3rd Qu.:150.0
 Max.   :121.00   Max.   :173.00   Max.   :160    Max.   :448.0
-------------------------------------------------------------------------------
results.7$Region[household]: 중부
   income08        income09         income10       income.total
 Min.   :  2     Min.   :  1.00   Min.   : 11    Min.   :  14.0
 1st Qu.: 12     1st Qu.: 27.00   1st Qu.: 26    1st Qu.:  79.0
 Median : 39     Median : 36.00   Median : 45    Median : 123.0
 Mean   : 69     Mean   : 79.31   Mean   : 83    Mean   : 231.3
 3rd Qu.: 67     3rd Qu.: 72.00   3rd Qu.: 74    3rd Qu.: 216.0
 Max.   :382     Max.   :417.00   Max.   :429    Max.   :1228.0
-------------------------------------------------------------------------------
results.7$Region[household]: 호남
   income08        income09        income10       income.total
 Min.   : 11.0   Min.   :  2.00  Min.   :  3.00  Min.   : 25.00
 1st Qu.: 17.0   1st Qu.:13.50   1st Qu.:10.50   1st Qu.: 55.75
 Median : 23.5   Median :22.00   Median :25.00   Median : 76.50
 Mean   : 37.5   Mean   :28.27   Mean   :28.82   Mean   : 99.70
 3rd Qu.: 49.0   3rd Qu.:36.50   3rd Qu.:36.50   3rd Qu.:147.75
 Max.   :104.0   Max.   :76.00   Max.   :86.00   Max.   :230.00
 NA's   :  1.0                                   NA's   :  1.00

> results.income.household.by.Region.trmean<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$Region[household], .... [TRUNCATED]

> print(results.income.household.by.Region.trmean)
results.7$Region[household]: 영남
  income08      income09      income10 income.total
      26            35            34           98
-------------------------------------------------------------------------------
results.7$Region[household]: 중부
  income08      income09      income10 income.total
      39            36            45          123
-------------------------------------------------------------------------------
results.7$Region[household]: 호남
  income08      income09      income10 income.total
     23.5          22.0          25.0         76.5

> results.income.total.by.Region.median<-by(results.7[total, c("income08","income09","income10","income.total")], results.7$Region[total],summary)

> print(results.income.total.by.Region.median)
results.7$Region[total]: 영남
   income08        income09        income10       income.total
 Min.   :  800   Min.   :  415   Min.   : 1010   Min.   : 2890
 1st Qu.: 2255   1st Qu.: 1626   1st Qu.: 4910   1st Qu.:11427
 Median : 7636   Median : 5261   Median :12330   Median :28381
 Mean   : 6719   Mean   : 7179   Mean   :12255   Mean   :26153
 3rd Qu.:10244   3rd Qu.:12921   3rd Qu.:17746   3rd Qu.:42178
 Max.   :12668   Max.   :16250   Max.   :25870   Max.   :44715
-------------------------------------------------------------------------------
results.7$Region[total]: 중부
   income08         income09        income10        income.total
 Min.   :  104.0   Min.   :  154   Min.   :  180.0  Min.   :   563
 1st Qu.:  940.5   1st Qu.: 1396   1st Qu.:  768.5  1st Qu.:  4266
 Median : 2776.0   Median : 4082   Median : 3602.0  Median : 10414
 Mean   :16201.3   Mean   : 8905   Mean   : 7585.8  Mean   : 32773
 3rd Qu.:19707.5   3rd Qu.:13854   3rd Qu.:10476.5  3rd Qu.: 44426
 Max.   :90600.0   Max.   :31437   Max.   :31600.0  Max.   :153637
 NA's   :    1.0   NA's   :    2   NA's   :    1.0  NA's   :     2
-------------------------------------------------------------------------------
results.7$Region[total]: 호남
   income08        income09        income10       income.total
 Min.   :  1000   Min.   :  327   Min.   :  372   Min.   :  4360
 1st Qu.:  7607   1st Qu.: 7424   1st Qu.: 7169   1st Qu.: 31180
 Median : 11132   Median :16812   Median :11202   Median : 36986
 Mean   : 38098   Mean   :27905   Mean   :18685   Mean   : 91004
 3rd Qu.: 42208   3rd Qu.:22553   3rd Qu.:14500   3rd Qu.:113718
 Max.   :128160   Max.   :123940  Max.   :84233   Max.   :266803
 NA's   :     2                   NA's   :    1   NA's   :     2

> results.income.total.by.Region.trmean<-by(results.7[total, c("income08","income09","income10","income.total")], results.7$Region[total],mean,trim=5, .... [TRUNCATED]

> print(results.income.total.by.Region.trmean)
results.7$Region[total]: 영남
  income08      income09      income10 income.total
   7636.5        5261.0       12330.5      28381.0
-------------------------------------------------------------------------------
results.7$Region[total]: 중부
  income08      income09      income10 income.total
   2776.0        4081.5        3602.0      10414.5
-------------------------------------------------------------------------------
results.7$Region[total]: 호남
  income08      income09      income10 income.total
  11132.0       16812.5       11202.0      36986.0

> results.leader.by.Region.median<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$Region,summary)

> print(results.leader.by.grade.median)
results.7$grade: A
   leader08         leader09        leader10        leader.total
 Min.   : 30.0    Min.   : 15.0   Min.   : 20.0   Min.   : 120.0
 1st Qu.: 45.0    1st Qu.: 83.0   1st Qu.: 80.0   1st Qu.: 256.5
 Median : 80.0    Median :103.0   Median :126.0   Median : 405.0
 Mean   :102.7    Mean   :205.1   Mean   :220.9   Mean   : 574.9
 3rd Qu.:119.5    3rd Qu.:181.0   3rd Qu.:285.0   3rd Qu.: 621.0
 Max.   :343.0    Max.   :802.0   Max.   :791.0   Max.   :1600.0
 NA's   :  2.0                                    NA's   :   2.0
-------------------------------------------------------------------------------
results.7$grade: B
   leader08        leader09        leader10        leader.total
 Min.   :  16.0   Min.   :  25.0  Min.   :  23.0  Min.   :   73.0
 1st Qu.:  37.0   1st Qu.:  53.0  1st Qu.:  50.0  1st Qu.:  205.0
 Median :  79.0   Median : 116.0  Median :  94.0  Median :  412.0
 Mean   : 322.9   Mean   : 289.7  Mean   : 162.4  Mean   :  810.6
 3rd Qu.: 224.5   3rd Qu.: 301.0  3rd Qu.: 178.0  3rd Qu.:  641.0
 Max.   :2430.0   Max.   :1764.0  Max.   : 884.0  Max.   : 4439.0
 NA's   :   3.0   NA's   :   1.0  NA's   :   1.0  NA's   :    3.0
-------------------------------------------------------------------------------
results.7$grade: C
   leader08         leader09       leader10        leader.total
 Min.   :   25.0   Min.   :  24.0  Min.   :  30.00  Min.   :  105
 1st Qu.:   47.0   1st Qu.:  76.0  1st Qu.:  78.75  1st Qu.:  203
 Median :   79.0   Median : 128.0  Median : 114.50  Median :  383
 Mean   :  599.7   Mean   : 245.1  Mean   : 230.69  Mean   : 1157
 3rd Qu.:  160.0   3rd Qu.: 278.0  3rd Qu.: 305.00  3rd Qu.:  983
 Max.   :10596.0   Max.   :1800.0  Max.   :1500.00  Max.   :11266
 NA's   :    8.0   NA's   :   4.0  NA's   :    5.00  NA's   :   10

> results.leader.by.Region.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$Region,mean, trim=5, na.rm=T)

> print(results.leader.by.grade.trmean)
results.7$grade: A
  leader08      leader09      leader10 leader.total
     80           103           126          405
-------------------------------------------------------------------------------
results.7$grade: B
  leader08      leader09      leader10 leader.total
     79           116            94          412
-------------------------------------------------------------------------------
results.7$grade: C
  leader08      leader09      leader10 leader.total
    79.0         128.0         114.5        383.0

> results.sales.by.class.median<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$class,summary)

> print(results.sales.by.class.median)
results.7$class: Better
   sales08         sales09         sales10         sales.total
 Min.   :   223   Min.   :   939  Min.   :  1300  Min.   :   3460
 1st Qu.:  3025   1st Qu.:  5246  1st Qu.:  5698  1st Qu.:  16316
 Median :  6880   Median : 14702  Median : 13744  Median :  37706
 Mean   : 34324   Mean   : 35183  Mean   : 53598  Mean   : 126652
 3rd Qu.: 31284   3rd Qu.: 48764  3rd Qu.: 47025  3rd Qu.: 143270
 Max.   :391742   Max.   :196626  Max.   :635562  Max.   : 997188
 NA's   :     7   NA's   :     6  NA's   :     5  NA's   :      7
-------------------------------------------------------------------------------
results.7$class: Middle
   sales08         sales09         sales10        sales.total
 Min.   :   190   Min.   :   728  Min.   :   180  Min.   :  1679
 1st Qu.:  2239   1st Qu.:  3829  1st Qu.:  4372  1st Qu.: 11101
 Median :  4465   Median :  7142  Median :  8371  Median : 20827
 Mean   : 13287   Mean   : 14194  Mean   : 18507  Mean   : 45987
```

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  3rd Qu.: 9138   3rd Qu.:14326   3rd Qu.:20828   3rd Qu.: 41646
  Max.   :90600   Max.   :75000   Max.   :81000   Max.   :221000
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    sales08          sales09          sales10         sales.total
 Min.   :   500   Min.   :   345   Min.   :    89   Min.   :  1702
 1st Qu.:  2373   1st Qu.:  4310   1st Qu.:  2952   1st Qu.: 13630
 Median:   8893   Median : 11485   Median : 11088   Median : 34402
 Mean   : 32012   Mean   : 30694   Mean   : 26939   Mean   : 97986
 3rd Qu.: 18054   3rd Qu.: 19836   3rd Qu.: 20270   3rd Qu.: 60234
 Max.   :330000   Max.   :320583   Max.   :271179   Max.   :921762
 NA's   :     4   NA's   :     2   NA's   :     1   NA's   :     4

> results.sales.by.class.trmean<-by(results.7[,c("sales08","sales09","sales10","sales.total")],results.7$class,mean,trim=5, na.rm=T)

> print(results.sales.by.class.trmean)
results.7$class: Better
   sales08     sales09     sales10 sales.total
   6880.5     14702.0     13744.5     37706.0
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
   sales08     sales09     sales10 sales.total
   4465.0      7141.5      8371.0     20827.0
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
   sales08     sales09     sales10 sales.total
   8893.0     11485.0     11087.5     34402.0

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

> print(results.jobs.by.class.median)
results.7$class: Better
    jobs08           jobs09           jobs10          jobs.total
 Min.   :   1.0   Min.   :   2.0   Min.   :   2.0   Min.   :   17
 1st Qu.:  15.0   1st Qu.:  18.0   1st Qu.:  12.0   1st Qu.:   60
 Median :  44.0   Median :  40.0   Median :  36.0   Median :  131
 Mean   : 426.6   Mean   : 326.1   Mean   : 357.3   Mean   : 1274
 3rd Qu.: 239.5   3rd Qu.: 119.5   3rd Qu.: 203.8   3rd Qu.:  725
 Max.   :4780.0   Max.   :2671.0   Max.   :2791.0   Max.   : 9639
 NA's   :   7.0   NA's   :   2.0   NA's   :   1.0   NA's   :    8
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
    jobs08            jobs09           jobs10          jobs.total
 Min.   :   2.00   Min.   :  18.0   Min.   :  14.0   Min.   :  36.0
 1st Qu.:  24.75   1st Qu.:  54.0   1st Qu.:  58.0   1st Qu.: 162.0
 Median :  76.00   Median : 179.5   Median : 154.0   Median : 534.0
 Mean   : 178.78   Mean   : 255.5   Mean   : 258.4   Mean   : 713.6
 3rd Qu.: 228.75   3rd Qu.: 300.5   3rd Qu.: 370.0   3rd Qu.: 917.0
 Max.   :1339.00   Max.   :1463.0   Max.   :1300.0   Max.   :4102.0
                                    NA's   :   1.0   NA's   :   1.0
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    jobs08           jobs09           jobs10          jobs.total
 Min.   :   5.0   Min.   :  11.00   Min.   :   2.0   Min.   :  37.0
 1st Qu.:  15.0   1st Qu.:  29.25   1st Qu.:  31.0   1st Qu.: 120.0
 Median :  49.0   Median :  46.50   Median :  49.0   Median : 144.0
 Mean   : 180.6   Mean   :  87.61   Mean   : 251.6   Mean   : 552.4
 3rd Qu.:  98.0   3rd Qu.: 127.00   3rd Qu.:  92.0   3rd Qu.: 321.0
 Max.   :2084.0   Max.   : 388.00   Max.   :3638.0   Max.   :6110.0
 NA's   :   2.0   NA's   :   1.00                    NA's   :   2.0

> results.jobs.by.class.trmean<-by(results.7[,c("jobs08","jobs09","jobs10","jobs.total")],results.7$class,mean,trim=5, na.rm=T)

> print(results.jobs.by.class.trmean)
results.7$class: Better
    jobs08     jobs09     jobs10 jobs.total
       44         40         36        131
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
    jobs08     jobs09     jobs10 jobs.total
     76.0      179.5      154.0      534.0
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    jobs08     jobs09     jobs10 jobs.total
     49.0       46.5       49.0      144.0

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

> print(results.corp.by.class.median)
results.7$class: Better
    corp08           corp09        corp10          corp.total
 Min.   : 1.00   Min.   : 1    Min.   : 1.00   Min.   :  4.00
 1st Qu.: 2.75   1st Qu.: 2    1st Qu.: 1.00   1st Qu.: 12.00
 Median : 6.00   Median : 5    Median : 2.00   Median : 24.00
 Mean   :13.69   Mean   :10    Mean   : 8.05   Mean   : 39.77
 3rd Qu.:10.00   3rd Qu.:11    3rd Qu.: 6.50   3rd Qu.: 40.00
 Max.   :75.00   Max.   :77    Max.   :80.00   Max.   :232.00
 NA's   :17.00   NA's   :14    NA's   :13.00   NA's   : 20.00
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
    corp08           corp09           corp10          corp.total
 Min.   : 1.000   Min.   : 1.000   Min.   : 1.000   Min.   : 3.00
 1st Qu.: 1.500   1st Qu.: 1.500   1st Qu.: 1.000   1st Qu.: 7.00
 Median : 5.000   Median : 4.000   Median : 3.000   Median :18.00
 Mean   : 5.818   Mean   : 6.667   Mean   : 5.357   Mean   :20.55
 3rd Qu.: 7.500   3rd Qu.:11.500   3rd Qu.: 8.750   3rd Qu.:30.50
 Max.   :20.000   Max.   :24.000   Max.   :16.000   Max.   :52.00
 NA's   : 7.000   NA's   : 3.000   NA's   : 4.000   NA's   : 7.00
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    corp08          corp09           corp10          corp.total
 Min.   : 1.00   Min.   : 1.000   Min.   : 1.000   Min.   :  4.00
 1st Qu.: 1.25   1st Qu.: 2.000   1st Qu.: 1.000   1st Qu.:  6.25
 Median : 3.00   Median : 3.000   Median : 2.000   Median : 12.00
 Mean   : 3.80   Mean   : 3.467   Mean   : 5.083   Mean   : 12.12
 3rd Qu.: 3.75   3rd Qu.: 3.500   3rd Qu.: 3.250   3rd Qu.: 12.00
 Max.   :16.00   Max.   :12.000   Max.   :28.000   Max.   : 42.00
 NA's   : 9.00   NA's   : 4.000   NA's   : 7.000   NA's   : 11.00

> results.corp.by.class.trmean<-by(results.7[,c("corp08","corp09","corp10","corp.total")],results.7$class,mean, trim=5, na.rm=T)

> print(results.corp.by.class.trmean)
results.7$class: Better
    corp08     corp09     corp10 corp.total
        6          5          2         24
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
    corp08     corp09     corp10 corp.total
        5          4          3         18
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    corp08     corp09     corp10 corp.total
        3          3          2          8

> results.export.by.class.median<-by(results.7[,c("export08","export09","export10","export.total")],results.7$class,summary)

> print(results.export.by.class.median)
results.7$class: Better
    export08          export09          export10          export.total
 Min.   :   2000   Min.   :     588   Min.   :   4382   Min.   :    8840
 1st Qu.:  87750   1st Qu.:  148750   1st Qu.: 230000   1st Qu.:  427300
 Median : 320000   Median :  389500   Median : 550500   Median : 1196000
 Mean   :1732106   Mean   : 2340034   Mean   :3106724   Mean   : 8320542
 3rd Qu.:2766500   3rd Qu.: 2339250   3rd Qu.:2616342   3rd Qu.: 9790000
 Max.   :8496000   Max.   :18192000   Max.   :25533000   Max.   :51138000
 NA's   :     15   NA's   :      11   NA's   :     13   NA's   :      16
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Middle
    export08          export09          export10          export.total
 Min.   :   38000   Min.   :   26250   Min.   :    3432   Min.   :   94866
 1st Qu.:   67500   1st Qu.:   61500   1st Qu.:  247738   1st Qu.:  781452
 Median :  277636   Median :  217830   Median :  435000   Median : 1269000
 Mean   : 1531527   Mean   : 1550987   Mean   : 1931611   Mean   : 6018646
 3rd Qu.:  478500   3rd Qu.:  549625   3rd Qu.:  754150   3rd Qu.: 1652300
 Max.   :11000000   Max.   :12081000   Max.   :13490000   Max.   :36571000
 NA's   :       8   NA's   :       6   NA's   :       7   NA's   :       9
-----------------------------------------------------------------------------------------------------------------------------------
results.7$class: Under
    export08          export09          export10          export.total
 Min.   :   81000   Min.   :    2000   Min.   :   18100   Min.   :   386000
 1st Qu.:  174471   1st Qu.:  123000   1st Qu.:  176000   1st Qu.:  1280000
 Median :  805500   Median :  515000   Median :  756000   Median :  5024000
 Mean   : 1505363   Mean   : 1449990   Mean   : 2254464   Mean   :  6462238
 3rd Qu.: 2423500   3rd Qu.: 1590000   3rd Qu.: 3290000   3rd Qu.:  9400000
 Max.   : 5207000   Max.   : 7084000   Max.   :10769000   Max.   : 23060000
 NA's   :       9   NA's   :       6   NA's   :       8   NA's   :       10

> results.export.by.class.trmean<-by(results.7[,c("export08","export09","export10","export.total")],results.7$class,mean, trim=5, na.rm=T)
```

```
> print(results.export.by.class.trmean)
results.7$class: Better
    export08    export09     export10 export.total
      320000      389500       550500      1196000
-------------------------------------------------------------------------------------------------
results.7$class: Middle
    export08    export09     export10 export.total
    277636.5    217830.5     435000.0    1269000.0
-------------------------------------------------------------------------------------------------
results.7$class: Under
    export08    export09     export10 export.total
      805500      515000       756000      5024000

> results.income.household.by.class.median<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$class[household], s .... [TRUNCATED]

> print(results.income.household.by.class.median)
results.7$class[household]: Better
    income08         income09         income10        income.total
 Min.   :  5    Min.   :  5.00   Min.   :  9.00   Min.   :  19.0
 1st Qu.: 21    1st Qu.: 22.00   1st Qu.: 25.00   1st Qu.:  74.0
 Median : 39    Median : 36.00   Median : 43.00   Median : 120.0
 Mean   : 62    Mean   : 66.06   Mean   : 72.24   Mean   : 200.3
 3rd Qu.: 50    3rd Qu.: 69.00   3rd Qu.: 69.00   3rd Qu.: 200.0
 Max.   :382    Max.   :417.00   Max.   :429.00   Max.   :1228.0
-------------------------------------------------------------------------------------------------
results.7$class[household]: Middle
    income08         income09         income10        income.total
 Min.   :  2.00   Min.   :  1.00   Min.   :  4.00   Min.   :  14.0
 1st Qu.: 11.00   1st Qu.:  6.25   1st Qu.:  8.75   1st Qu.:  31.0
 Median : 16.00   Median : 15.00   Median : 16.00   Median :  54.0
 Mean   : 33.67   Mean   : 31.70   Mean   : 33.00   Mean   : 104.9
 3rd Qu.: 50.00   3rd Qu.: 51.00   3rd Qu.: 47.00   3rd Qu.: 158.0
 Max.   :121.00   Max.   :120.00   Max.   :126.00   Max.   : 367.0
 NA's   :  1.00                                     NA's   :   1.0
-------------------------------------------------------------------------------------------------
results.7$class[household]: Under
    income08         income09         income10        income.total
 Min.   :  9.0    Min.   :  7.00   Min.   :  3.0    Min.   :  25.0
 1st Qu.: 17.5    1st Qu.: 20.25   1st Qu.: 20.0    1st Qu.:  59.5
 Median : 27.0    Median : 35.00   Median : 33.5    Median : 100.0
 Mean   : 44.2    Mean   : 49.60   Mean   : 46.2    Mean   : 140.0
 3rd Qu.: 61.0    3rd Qu.: 38.00   3rd Qu.: 38.5    3rd Qu.: 163.0
 Max.   :116.0    Max.   :212.00   Max.   :175.0    Max.   : 503.0

> results.income.household.by.class.trmean<-by(results.7[household, c("income08","income09","income10","income.total")], results.7$class[household], m .... [TRUNCATED]

> print(results.income.household.by.class.trmean)
results.7$class[household]: Better
   income08     income09     income10 income.total
         39           36           43          120
-------------------------------------------------------------------------------------------------
results.7$class[household]: Middle
   income08     income09     income10 income.total
         16           15           16           54
-------------------------------------------------------------------------------------------------
results.7$class[household]: Under
   income08     income09     income10 income.total
       27.0         35.0         33.5        100.0

> results.income.total.by.class.median<-by(results.7[total,c("income08","income09","income10","income.total")],results.7$class[total],summary)

> print(results.income.total.by.class.median)
results.7$class[total]: Better
    income08         income09         income10        income.total
 Min.   :  598    Min.   :  327    Min.   :  372    Min.   :  2616
 1st Qu.: 1142    1st Qu.: 1470    1st Qu.: 1214    1st Qu.:  5574
 Median : 2776    Median : 4082    Median : 3602    Median : 10414
 Mean   :28960    Mean   :20368    Mean   :11658    Mean   : 64444
 3rd Qu.:23879    3rd Qu.:16543    3rd Qu.: 8124    3rd Qu.: 38007
 Max.   :128160   Max.   :123940   Max.   :84233    Max.   :266803
 NA's   :    2    NA's   :    1    NA's   :    2    NA's   :     3
-------------------------------------------------------------------------------------------------
results.7$class[total]: Middle
    income08         income09         income10        income.total
 Min.   :  104    Min.   :  154    Min.   :  180    Min.   :   563
 1st Qu.: 1490    1st Qu.: 2116    1st Qu.:  362    1st Qu.:  5906
 Median : 6710    Median :11754    Median : 7169    Median : 27560
 Mean   :19113    Mean   :12471    Mean   : 9387    Mean   : 42506
 3rd Qu.: 9781    3rd Qu.:18556    3rd Qu.:13018    3rd Qu.: 42160
 Max.   :90600    Max.   :31437    Max.   :31600    Max.   :153637
 NA's   :    1    NA's   :    1                     NA's   :     1
-------------------------------------------------------------------------------------------------
results.7$class[total]: Under
    income08         income09         income10        income.total
 Min.   : 1200    Min.   :  415    Min.   : 3898    Min.   :  8361
 1st Qu.: 8996    1st Qu.: 5465    1st Qu.:11010    1st Qu.: 31689
 Median :12466    Median :12953    Median :16311    Median : 40164
 Mean   :11260    Mean   :11492    Mean   :16398    Mean   : 39150
 3rd Qu.:15238    3rd Qu.:16615    3rd Qu.:21368    3rd Qu.: 49740
 Max.   :16615    Max.   :20401    Max.   :28507    Max.   : 63857

> results.income.total.by.class.trmean<-by(results.7[total,c("income08","income09","income10","income.total")],results.7$class[total], mean, trim=5, n .... [TRUNCATED]

> print(results.income.total.by.class.trmean)
results.7$class[total]: Better
   income08     income09     income10 income.total
     2776.0       4081.5       3602.0      10414.5
-------------------------------------------------------------------------------------------------
results.7$class[total]: Middle
   income08     income09     income10 income.total
     6710.5      11754.5       7169.0      27559.5
-------------------------------------------------------------------------------------------------
results.7$class[total]: Under
   income08     income09     income10 income.total
    12466.0      12953.0      16311.0      40164.5

> results.leader.by.class.median<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$class,summary)

> print(results.leader.by.grade.median)
results.7$grade: A
    leader08         leader09         leader10         leader.total
 Min.   : 30.0    Min.   : 15.0    Min.   : 20.0    Min.   : 120.0
 1st Qu.: 45.0    1st Qu.: 83.0    1st Qu.: 80.0    1st Qu.: 256.5
 Median : 80.0    Median :103.0    Median :126.0    Median : 405.0
 Mean   :102.7    Mean   :205.1    Mean   :220.9    Mean   : 574.9
 3rd Qu.:119.5    3rd Qu.:181.0    3rd Qu.:285.0    3rd Qu.: 621.0
 Max.   :343.0    Max.   :802.0    Max.   :791.0    Max.   :1600.0
 NA's   :  2.0                                      NA's   :   2.0
-------------------------------------------------------------------------------------------------
results.7$grade: B
    leader08         leader09         leader10         leader.total
 Min.   :  16.0   Min.   :  25.0   Min.   :  23.0   Min.   :  73.0
 1st Qu.:  37.0   1st Qu.:  53.0   1st Qu.:  50.0   1st Qu.: 205.0
 Median :  79.0   Median : 116.0   Median :  94.0   Median : 412.0
 Mean   : 322.9   Mean   : 289.7   Mean   : 162.4   Mean   : 810.6
 3rd Qu.: 224.5   3rd Qu.: 301.0   3rd Qu.: 178.0   3rd Qu.: 641.0
 Max.   :2430.0   Max.   :1764.0   Max.   : 884.0   Max.   :4439.0
 NA's   :   3.0   NA's   :   1.0   NA's   :   1.0   NA's   :   3.0
-------------------------------------------------------------------------------------------------
results.7$grade: C
    leader08         leader09         leader10         leader.total
 Min.   :   25.0  Min.   :  24.0   Min.   :  30.00  Min.   :  105
 1st Qu.:  47.0   1st Qu.:  76.0   1st Qu.:  78.75  1st Qu.:  203
 Median :  79.0   Median : 128.0   Median : 114.50  Median :  383
 Mean   : 599.7   Mean   : 245.1   Mean   : 230.69  Mean   : 1157
 3rd Qu.: 160.0   3rd Qu.: 278.0   3rd Qu.: 305.00  3rd Qu.:  983
 Max.   :10596.0  Max.   :1800.0   Max.   :1500.00  Max.   :11266
 NA's   :    8.0  NA's   :   4.0   NA's   :   5.00  NA's   :   10

> results.leader.by.class.trmean<-by(results.7[,c("leader08","leader09","leader10","leader.total")],results.7$class,mean, trim=5, na.rm=T)

> print(results.leader.by.grade.trmean)
results.7$grade: A
   leader08     leader09     leader10 leader.total
         80          103          126          405
-------------------------------------------------------------------------------------------------
results.7$grade: B
   leader08     leader09     leader10 leader.total
         79          116           94          412
-------------------------------------------------------------------------------------------------
results.7$grade: C
   leader08     leader09     leader10 leader.total
       79.0        128.0        114.5        383.0
>
```