Danish data and results for the disease reality analysis

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Contents

Chapter 1

Data for analysis

```
> library( Epi )
> clear()
> library( haven )
> tab1 <- read_sas( "../data/collect.sas7bdat" )
> str( tab1 )
```

```
Classes ‘tbl_df’, ‘tbl’ and 'data.frame':        8560 obs. of  20 variables:
 $ a     : num  NA 0 0 0 1 1 1 2 2 2 ...
 $ y     : num  NA 1996 1996 1996 1996 ...
 $ sex   : num  NA 1 2 2 1 1 2 1 1 2 ...
 $ pop   : chr  "" "Al" "Al" "DM" ...
 $ _TYPE_: num  NA 15 15 15 15 15 15 15 15 15 ...
 $ _FREQ_: num  NA 60383 57225 6 42517 ...
 $ aMI   : num  NA 0 3 0 1 0 2 4 0 2 ...
 $ aHF   : num  NA 12 14 0 14 0 5 11 0 13 ...
 $ aStr  : num  NA 47 48 0 42 0 36 31 0 33 ...
 $ aHstr : num  NA 27 21 0 23 0 14 20 0 9 ...
 $ aIstr : num  NA 20 27 0 20 0 22 12 0 25 ...
 $ aAtr  : num  NA 17 12 0 28 0 21 22 0 12 ...
 $ fMI   : num  NA 0 3 0 1 0 2 4 0 2 ...
 $ fHF   : num  NA 12 14 0 11 0 5 7 0 8 ...
 $ fStr  : num  NA 46 47 0 36 0 33 26 0 26 ...
 $ fHstr : num  NA 26 21 0 22 0 12 18 0 6 ...
 $ fIstr : num  NA 20 26 0 15 0 21 9 0 21 ...
 $ fAtr  : num  NA 16 12 0 27 0 20 21 0 11 ...
 $ Dth   : num  NA 30 17 0 21 0 23 10 0 11 ...
 $ PY    : num  NA NA NA 2.92 NA ...
 - attr(*, "label")= chr "COLLECT"
```

```
> tab1 <- tab1[-1,-(5:6)]
> head( tab1 )
```

```
# A tibble: 6 × 18
      a     y   sex   pop   aMI   aHF  aStr aHstr aIstr  aAtr   fMI   fHF  fStr fHstr fIstr
  <dbl> <dbl> <dbl> <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
1     0  1996     1    Al     0    12    47    27    20    17     0    12    46    26    20
2     0  1996     2    Al     3    14    48    21    27    12     3    14    47    21    26
3     0  1996     2    DM     0     0     0     0     0     0     0     0     0     0     0
4     1  1996     1    Al     1    14    42    23    20    28     1    11    36    22    15
5     1  1996     1    DM     0     0     0     0     0     0     0     0     0     0     0
6     1  1996     2    Al     2     5    36    14    22    21     2     5    33    12    21
# ... with 2 more variables: Dth <dbl>, PY <dbl>
```

```
> tab5 <- aggregate( tab1[,-(1:4)],
+                    by = cbind( a5=floor(tab1["a"]/5)*5, tab1[,2:4] ),
```

```
+                   FUN = sum )
> str( tab5 )
'data.frame':        1764 obs. of  18 variables:
 $ a    : num  0 5 10 15 20 25 30 35 40 45 ...
 $ y    : num  1996 1996 1996 1996 1996 ...
 $ sex  : num  1 1 1 1 1 1 1 1 1 1 ...
 $ pop  : chr  "Al" "Al" "Al" "Al" ...
 $ aMI  : num  18 61 121 318 832 ...
 $ aHF  : num  69 119 139 245 468 ...
 $ aStr : num  216 330 430 710 1342 ...
 $ aHstr: num  130 194 249 358 578 ...
 $ aIstr: num  89 143 187 372 803 ...
 $ aAtr : num  132 272 344 715 1262 ...
 $ fMI  : num  18 59 118 315 810 ...
 $ fHF  : num  51 77 110 201 410 ...
 $ fStr : num  191 290 389 643 1214 ...
 $ fHstr: num  119 177 218 308 484 ...
 $ fIstr: num  75 120 175 354 766 ...
 $ fAtr : num  129 268 339 698 1211 ...
 $ Dth  : num  78 24 27 95 169 171 284 368 601 804 ...
 $ PY   : num  NA NA NA NA NA NA NA NA NA NA ...
> as.data.frame(
+ subset( tab1, a>44.5 & a<49.5 & sex==1 & pop=="DM" & y==2005 ) )
   a    y sex pop aMI aHF aStr aHstr aIstr aAtr fMI fHF fStr fHstr fIstr fAtr Dth        PY
1 45 2005   1  DM  74  32   58    10    52   24  63  27   39     8    36   20  15  820.0000
2 46 2005   1  DM  71  48   62    12    54   35  49  41   51     9    46   23   5  886.9870
3 47 2005   1  DM  75  47   63    11    54   49  57  36   42    10    35   35   9  912.3066
4 48 2005   1  DM  93  69   83    11    77   43  59  58   57     9    53   37  14 1061.6810
5 49 2005   1  DM 118  78  106    11    96   67  67  62   80     9    73   47  20 1209.7495
> subset( tab5, a==45           & sex==1 & pop=="DM" & y==2005 )
      a    y sex pop aMI aHF aStr aHstr aIstr aAtr fMI fHF fStr fHstr fIstr fAtr Dth       
1101 45 2005   1  DM 431 274  372    55   333  218 295 224  269    45   243  162  63 4890.7
> as.data.frame(
+ subset( tab1, a>44.5 & a<49.5 & sex==1 & pop=="DM" & y==2005 ) )[,-(5:16)]
   a    y sex pop Dth        PY
1 45 2005   1  DM  15  820.0000
2 46 2005   1  DM   5  886.9870
3 47 2005   1  DM   9  912.3066
4 48 2005   1  DM  14 1061.6810
5 49 2005   1  DM  20 1209.7495
> subset( tab5, a==45           & sex==1 & pop=="DM" & y==2005 )[,-(5:16)]
      a    y sex pop Dth       PY
1101 45 2005   1  DM  63 4890.724
> save( tab1, tab5, file="../data/DR.Rda")
```

Chapter 2

SAS programs

2.1 Program documentation

The following is a listing of the SAS-programs (that is the `.log` and `.lst` files) used to generate the disease reality datasets.

2.1.1 `optslibs.sas`

This is common set of declarative commands that defines a couple of options, the location of the raw and the derived datasets and some global macro variables holding the follow-up period. It is included as autoexec file in all runs.

```
* options used thoughout ;
options nocenter ovp notes nomprint
        ps = 10000 /* 105 */
        ls = 90    /* 160 */
       obs = max
  formchar = '           '
/* format libraries we use */
 fmtsearch = ( dsfmt.times_personstatistik
               dsfmt.brancher
               dsfmt.uddannelser
               dsfmt.geokoder
               bcfmt.drugfmt
               ttfmt.ttformat00
               ttfmt.ttformat10
               ttfmt.ttformat20 ) ;

* data libraries ;
libname DELPOP15 'E:\rawdata\705093\Delpopulationer\' ;
libname EKST15   'E:\rawdata\705093\Eksterne data\' ;
libname GRUND15  'E:\rawdata\705093\Grunddata\' ;
libname POPUL15  'E:\rawdata\705093\Population\' ;
libname TTDATA  'E:\workdata\705093\BxC\daffodil\DATA\' ;

* format libraries ;
libname TTfmt 'E:\workdata\705093\QSN_MLiJ\' ;
libname BCfmt 'E:\workdata\705093\BxC\daffodil\data' ;
libname DSfmt 'E:\Formater\SAS formater i Danmarks Statistik\FORMATKATALOG';

* useful constants ;
%let primo   = '01JAN1995'd ;
%let cutdate = '01JAN2016'd ; * we have data including 2015 ;
%let antdage = (&cutdate.-&primo.) ;
```

2.2 08-events

Gets all records of complcations for the NPR and tabulates them by age and calendar year. This is also done with deaths and person-years, both fr the entire population and for the T2D population.

```
1                                                          "Program 08-events.sas"

NOTE: Copyright (c) 2002-2012 by SAS Institute Inc., Cary, NC, USA.
NOTE: SAS (r) Proprietary Software 9.4 (TS1M3)
      Licensed to FORSKNING 1, Site 50800722.
NOTE: This session is executing on the X64_SRV12  platform.



NOTE: Updated analytical products:

      SAS/STAT 14.1

NOTE: Additional host information:

 X64_SRV12 WIN 6.2.9200  Server

NOTE: SAS initialization used:
      real time           0.06 seconds
      cpu time            0.07 seconds


NOTE: AUTOEXEC processing beginning; file is E:\workdata\705093\BXC\daffodil\sas\optslibs.sas.


NOTE: AUTOEXEC processing completed.

1          * all complaications diagnoses ;
2          %macro mold ;
3          data compl1977_93 ;
4            set %do i = 1977 %to 1993 ;
5                grund15.lprhel&i.         ( keep = pnr c_adiag d_inddto )
6                %end ; ;
7            compl = put( c_adiag, $icd8gr. ) ;
8            if compl in ('MI','HF','HmStr','IscStr','AtrFib') then output ;
9            if compl in ('HmStr','IscStr') then do ;
10              compl = 'Stroke' ;
11              output ;
12              end ;
13         run ;
14         %mend ;
15         %mold ;

NOTE: There were 536220 observations read from the data set GRUND15.LPRHEL1977.
NOTE: There were 576400 observations read from the data set GRUND15.LPRHEL1978.
NOTE: There were 593234 observations read from the data set GRUND15.LPRHEL1979.
NOTE: There were 603085 observations read from the data set GRUND15.LPRHEL1980.
NOTE: There were 602068 observations read from the data set GRUND15.LPRHEL1981.
NOTE: There were 625449 observations read from the data set GRUND15.LPRHEL1982.
NOTE: There were 651393 observations read from the data set GRUND15.LPRHEL1983.
NOTE: There were 669830 observations read from the data set GRUND15.LPRHEL1984.
NOTE: There were 694317 observations read from the data set GRUND15.LPRHEL1985.
NOTE: There were 727270 observations read from the data set GRUND15.LPRHEL1986.
NOTE: There were 754514 observations read from the data set GRUND15.LPRHEL1987.
NOTE: There were 792682 observations read from the data set GRUND15.LPRHEL1988.
NOTE: There were 821261 observations read from the data set GRUND15.LPRHEL1989.
NOTE: There were 852349 observations read from the data set GRUND15.LPRHEL1990.
NOTE: There were 874069 observations read from the data set GRUND15.LPRHEL1991.
NOTE: There were 922350 observations read from the data set GRUND15.LPRHEL1992.
NOTE: There were 989322 observations read from the data set GRUND15.LPRHEL1993.
NOTE: The data set WORK.COMPL1977_93 has 295888 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           5.73 seconds
```

```
      cpu time            2.29 seconds


16
17         %macro mnew ;
18         data compl1994_15 ;
19           set %do i = 1994 %to 2015 ;
20               grund15.lprpop&i.          ( keep = pnr c_adiag d_inddto )
21               %end ;
22               %do i = 14 %to 15 ;
23               grund15.lprpop_uafamb&i.   ( keep = pnr c_adiag d_inddto )
24               %end ; ;
25           * sometimes only 3 characters (or none) are given,
26             so we remove trailing blanks and add 0s ;
27           drop dpad ;
28            dpad = trim(c_adiag) || '00000' ;
29           compl = put( substr( dpad, 2, 4 ), $icd10gr. ) ;
30           if compl in ('MI','HF','HmStr','IscStr','AtrFib') then output ;
31           if compl in ('HmStr','IscStr') then do ;
32              compl = 'Stroke' ;
33              output ;
34              end ;
35         run ;
36         %mend ;
37         %mnew ;

WARNING: Multiple lengths were specified for the variable C_ADIAG by input data set(s).
         This can cause truncation of data.
NOTE: There were 2257703 observations read from the data set GRUND15.LPRPOP1994.
NOTE: There were 3099164 observations read from the data set GRUND15.LPRPOP1995.
NOTE: There were 3254161 observations read from the data set GRUND15.LPRPOP1996.
NOTE: There were 3348359 observations read from the data set GRUND15.LPRPOP1997.
NOTE: There were 3438023 observations read from the data set GRUND15.LPRPOP1998.
NOTE: There were 3544774 observations read from the data set GRUND15.LPRPOP1999.
NOTE: There were 3554711 observations read from the data set GRUND15.LPRPOP2000.
NOTE: There were 3676892 observations read from the data set GRUND15.LPRPOP2001.
NOTE: There were 3734587 observations read from the data set GRUND15.LPRPOP2002.
NOTE: There were 3714168 observations read from the data set GRUND15.LPRPOP2003.
NOTE: There were 4771057 observations read from the data set GRUND15.LPRPOP2004.
NOTE: There were 4970581 observations read from the data set GRUND15.LPRPOP2005.
NOTE: There were 5146887 observations read from the data set GRUND15.LPRPOP2006.
NOTE: There were 5169427 observations read from the data set GRUND15.LPRPOP2007.
NOTE: There were 5544338 observations read from the data set GRUND15.LPRPOP2008.
NOTE: There were 5835150 observations read from the data set GRUND15.LPRPOP2009.
NOTE: There were 7287169 observations read from the data set GRUND15.LPRPOP2010.
NOTE: There were 7664856 observations read from the data set GRUND15.LPRPOP2011.
NOTE: There were 6069159 observations read from the data set GRUND15.LPRPOP2012.
NOTE: There were 6227306 observations read from the data set GRUND15.LPRPOP2013.
NOTE: There were 6386162 observations read from the data set GRUND15.LPRPOP2014.
NOTE: There were 6798419 observations read from the data set GRUND15.LPRPOP2015.
NOTE: There were 317697 observations read from the data set GRUND15.LPRPOP_UAFAMB14.
NOTE: There were 1860412 observations read from the data set GRUND15.LPRPOP_UAFAMB15.
NOTE: The data set WORK.COMPL1994_15 has 2803865 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           55.79 seconds
      cpu time            24.03 seconds


38
39         data cvd ( keep = pnr d_inddto c_adiag compl ) ;
40           set compl1977_93
41               compl1994_15 ;
42         run ;

NOTE: There were 295888 observations read from the data set WORK.COMPL1977_93.
NOTE: There were 2803865 observations read from the data set WORK.COMPL1994_15.
NOTE: The data set WORK.CVD has 3099753 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           0.31 seconds
      cpu time            0.31 seconds
```

```
43
44          proc sort  data = cvd ;
45            by pnr compl d_inddto ;
46          run ;

NOTE: There were 3099753 observations read from the data set WORK.CVD.
NOTE: The data set WORK.CVD has 3099753 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.54 seconds
      cpu time            1.24 seconds


47
48          * Now diabetes status as T2 is merged ;
49          data cvd ;
50            merge cvd
51                  TTdata.DMreg ( where = ( typ eq 'T2' ) ) ;
52            by pnr ;
53            keep pnr compl d_inddto doDM ;
54          run ;

NOTE: There were 3099753 observations read from the data set WORK.CVD.
NOTE: There were 443659 observations read from the data set TTDATA.DMREG.
      WHERE typ='T2';
NOTE: The data set WORK.CVD has 3407559 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           0.93 seconds
      cpu time            0.75 seconds


55
56          * Dataset of *first* complications of each type ;
57          data cvd1 ( keep = pnr compl d_first ) ;
58            set cvd ;
59            by pnr compl d_inddto ;
60            if first.compl then do ;
61               d_first = d_inddto ;
62               output ;
63               end ;
64          run ;

NOTE: There were 3407559 observations read from the data set WORK.CVD.
NOTE: The data set WORK.CVD1 has 1644619 observations and 3 variables.
NOTE: DATA statement used (Total process time):
      real time           0.59 seconds
      cpu time            0.59 seconds


65
66          * merge first complications dates ;
67          data cvd ;
68            merge cvd cvd1 ;
69            by pnr compl ;
70          run ;

NOTE: There were 3407559 observations read from the data set WORK.CVD.
NOTE: There were 1644619 observations read from the data set WORK.CVD1.
NOTE: The data set WORK.CVD has 3407559 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time           0.96 seconds
      cpu time            0.97 seconds


71
72          * Merge with population ;
73          data total ;
74            merge cvd TTdata.pop ;
75            by pnr ;
```

```
76         run ;

NOTE: There were 3407559 observations read from the data set WORK.CVD.
NOTE: There were 7361669 observations read from the data set TTDATA.POP.
NOTE: The data set WORK.TOTAL has 9706250 observations and 8 variables.
NOTE: DATA statement used (Total process time):
      real time           3.86 seconds
      cpu time            2.15 seconds


77
78         * For each calendar year output a person if
79           a) any event occur during the year
80           b) person is alive on 1 july (population risk time proxy) ;
81
82         %macro prev( y );
83
84         data DMcompl ( keep = a y sex pop
85                               aMI aHF aStr aHstr aIstr aAtr
86                               fMI fHF fStr fHstr fIstr fAtr Dth PY ) ;
87           set total ;
88           by pnr ;
89           y = &y. ;
90           a = max( 0, floor( (mdy(7,1,y)-doBth)/365.25 ) ) ;
91           if .z < doDth < mdy( 1, 1,y) then delete ;
92           if .z < doDM  < mdy(12,31,y) ;
93           * The counters ;
94           retain aMI aHF aStr aHstr aIstr aAtr
95                  fMI fHF fStr fHstr fIstr fAtr Dth ;
96           if first.pnr then do ;
97              aMI = 0 ; aHF = 0 ; aStr = 0 ; aHstr = 0 ; aIstr = 0 ; aAtr = 0 ;
98              fMI = 0 ; fHF = 0 ; fStr = 0 ; fHstr = 0 ; fIstr = 0 ; fAtr = 0 ; Dth = 0
98       ! ;
99              end ;
100          * any and first events counted this year ;
101          acount = ( doDM <= d_inddto ) ;
102          fcount = ( doDM <= d_first  and mdy(1,1,y) <= d_first ) ;
103          aMI   = max( aMI  , compl eq 'MI'     and acount ) ;
104          aHF   = max( aHF  , compl eq 'HF'     and acount ) ;
105          aStr  = max( aStr , compl eq 'Stroke' and acount ) ;
106          aHstr = max( aHstr, compl eq 'HmStr'  and acount ) ;
107          aIstr = max( aIstr, compl eq 'IscStr' and acount ) ;
108          aAtr  = max( aAtr , compl eq 'AtrFib' and acount ) ;
109          fMI   = max( fMI  , compl eq 'MI'     and fcount ) ;
110          fHF   = max( fHF  , compl eq 'HF'     and fcount ) ;
111          fStr  = max( fStr , compl eq 'Stroke' and fcount ) ;
112          fHstr = max( fHstr, compl eq 'HmStr'  and fcount ) ;
113          fIstr = max( fIstr, compl eq 'IscStr' and fcount ) ;
114          fAtr  = max( fAtr , compl eq 'AtrFib' and fcount ) ;
115          if last.pnr then do ;
116             Dth = ( max( mdy(1,1,y), doDM ) <= doDth <= mdy(12,31,y) ) ;
117             pop = 'DM' ;
118             PY  = floor( ( min( mdy(12,31,y), doDth ) -
119                            max( mdy( 1, 1,y), doDM  ) )/365.25 ) ;
120             output ;
121             end ;
122        run ;
123
124        data Acompl ( keep = a y sex pop
125                             aMI aHF aStr aHstr aIstr aAtr
126                             fMI fHF fStr fHstr fIstr fAtr Dth ) ;
127          set total ;
128          by pnr ;
129          y = &y. ;
130          if .z < doDth < mdy( 1, 1,y) then delete ;
131          a = max( 0, floor( (mdy(7,1,y)-doBth)/365.25 ) ) ;
132          * The counters ;
133          retain aMI aHF aStr aHstr aIstr aAtr
134                 fMI fHF fStr fHstr fIstr fAtr Dth ;
135          if first.pnr then do ;
```

```
136             aMI = 0 ; aHF = 0 ; aStr = 0 ; aHstr = 0 ; aIstr = 0 ; aAtr = 0 ;
137             fMI = 0 ; fHF = 0 ; fStr = 0 ; fHstr = 0 ; fIstr = 0 ; fAtr = 0 ; Dth = 0
137      ! ;
138             end ;
139           * any and first events counted this year ;
140           acount = ( doDM <= d_inddto ) ;
141           fcount = ( doDM <= d_first  and mdy(1,1,y) <= d_first ) ;
142           aMI   = max( aMI  , compl eq 'MI'     and acount ) ;
143           aHF   = max( aHF  , compl eq 'HF'     and acount ) ;
144           aStr  = max( aStr , compl eq 'Stroke' and acount ) ;
145           aHstr = max( aHstr, compl eq 'HmStr'  and acount ) ;
146           aIstr = max( aIstr, compl eq 'IscStr' and acount ) ;
147           aAtr  = max( aAtr , compl eq 'AtrFib' and acount ) ;
148           fMI   = max( fMI  , compl eq 'MI'     and fcount ) ;
149           fHF   = max( fHF  , compl eq 'HF'     and fcount ) ;
150           fStr  = max( fStr , compl eq 'Stroke' and fcount ) ;
151           fHstr = max( fHstr, compl eq 'HmStr'  and fcount ) ;
152           fIstr = max( fIstr, compl eq 'IscStr' and fcount ) ;
153           fAtr  = max( fAtr , compl eq 'AtrFib' and fcount ) ;
154           if last.pnr then do ;
155              Dth = ( mdy(1,1,y) <= doDth <= mdy(12,31,y) ) ;
156              pop = 'All' ;
157              PY  = floor( ( min( mdy(12,31,y), doDth ) -
158                             max( mdy( 1, 1,y), doBth ) )/365.25 ) ;
159              output ;
160              end ;
161         run ;
162
163         %mend ;
164
165         %macro collect ;
166         %do y = 1996 %to 2015 ;
167            %prev( &y. ) ;
168
169         data sam ;
170           set DMcompl Acompl ;
171         run ;
172
173         proc summary  data = sam  nway ;
174           class a y sex pop ;
175           var aMI aHF aStr aHstr aIstr aAtr
176               fMI fHF fStr fHstr fIstr fAtr Dth PY ;
177           output out = collect
178                  sum = ;
179         run ;
180
181         data TTdata.collect ;
182          set TTdata.collect
183                      collect ;
184         run ;
185
186         %end ;
187         %mend ;
188
189         data TTdata.collect ;
190         run ;

NOTE: The data set TTDATA.COLLECT has 1 observations and 0 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds


191
192         %collect ;

NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:203   83944 at 192:221   83944 at 192:228
```

```
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 97964 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.25 seconds
      cpu time            3.25 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7334786 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.25 seconds
      cpu time            8.25 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 97964 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7334786 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7432750 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.42 seconds
      cpu time            1.42 seconds


NOTE: There were 7432750 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 422 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           7.20 seconds
      cpu time            9.84 seconds


NOTE: There were 1 observations read from the data set TTDATA.COLLECT.
NOTE: There were 422 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 423 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.06 seconds
      cpu time            0.01 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 103601 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.29 seconds
      cpu time            3.29 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7274103 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.00 seconds
      cpu time            7.99 seconds
```

```
WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 103601 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7274103 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7377704 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.43 seconds
      cpu time            1.43 seconds


NOTE: There were 7377704 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 421 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           7.12 seconds
      cpu time            9.76 seconds


NOTE: There were 423 observations read from the data set TTDATA.COLLECT.
NOTE: There were 421 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 844 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 110469 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.25 seconds
      cpu time            3.25 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7214551 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.06 seconds
      cpu time            8.06 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 110469 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7214551 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7325020 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.43 seconds
      cpu time            1.43 seconds


NOTE: There were 7325020 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 420 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           7.07 seconds
      cpu time            9.39 seconds
```

```
NOTE: There were 844 observations read from the data set TTDATA.COLLECT.
NOTE: There were 420 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 1264 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.01 seconds
      cpu time            0.01 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 117153 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.32 seconds
      cpu time            3.32 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7156396 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.92 seconds
      cpu time            7.92 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 117153 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7156396 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7273549 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.45 seconds
      cpu time            1.45 seconds


NOTE: There were 7273549 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 422 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           7.04 seconds
      cpu time            9.54 seconds


NOTE: There were 1264 observations read from the data set TTDATA.COLLECT.
NOTE: There were 422 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 1686 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 124432 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.12 seconds
      cpu time            3.12 seconds
```

```
NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7097506 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.73 seconds
      cpu time            7.73 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 124432 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7097506 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7221938 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.43 seconds
      cpu time            1.43 seconds



NOTE: There were 7221938 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 421 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.98 seconds
      cpu time            9.79 seconds



NOTE: There were 1686 observations read from the data set TTDATA.COLLECT.
NOTE: There were 421 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 2107 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.01 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 131451 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.31 seconds
      cpu time            3.31 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 7039858 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.81 seconds
      cpu time            7.81 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 131451 observations read from the data set WORK.DMCOMPL.
NOTE: There were 7039858 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7171309 observations and 18 variables.
NOTE: DATA statement used (Total process time):
```

```
      real time           1.42 seconds
      cpu time            1.42 seconds


NOTE: There were 7171309 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 417 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.93 seconds
      cpu time            9.54 seconds


NOTE: There were 2107 observations read from the data set TTDATA.COLLECT.
NOTE: There were 417 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 2524 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 138805 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.26 seconds
      cpu time            3.26 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6981839 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.79 seconds
      cpu time            7.79 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 138805 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6981839 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7120644 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.43 seconds
      cpu time            1.43 seconds


NOTE: There were 7120644 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 422 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.88 seconds
      cpu time            9.70 seconds


NOTE: There were 2524 observations read from the data set TTDATA.COLLECT.
NOTE: There were 422 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 2946 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.01 seconds
```

```
NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 148136 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.31 seconds
      cpu time            3.31 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6923490 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.65 seconds
      cpu time            7.65 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 148136 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6923490 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7071626 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.46 seconds
      cpu time            1.43 seconds


NOTE: There were 7071626 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 425 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.84 seconds
      cpu time            9.65 seconds


NOTE: There were 2946 observations read from the data set TTDATA.COLLECT.
NOTE: There were 425 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 3371 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 158391 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.28 seconds
      cpu time            3.28 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
```

```
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6866144 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.67 seconds
      cpu time            7.67 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 158391 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6866144 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 7024535 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           1.37 seconds
      cpu time            1.37 seconds



NOTE: There were 7024535 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 426 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.79 seconds
      cpu time            9.40 seconds



NOTE: There were 3371 observations read from the data set TTDATA.COLLECT.
NOTE: There were 426 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 3797 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.06 seconds
      cpu time            0.01 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 169021 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.34 seconds
      cpu time            3.34 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6810503 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.56 seconds
      cpu time            7.56 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 169021 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6810503 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6979524 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.29 seconds
      cpu time            1.09 seconds



NOTE: There were 6979524 observations read from the data set WORK.SAM.
```

```
NOTE: The data set WORK.COLLECT has 427 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.75 seconds
      cpu time            9.15 seconds



NOTE: There were 3797 observations read from the data set TTDATA.COLLECT.
NOTE: There were 427 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 4224 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 179967 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.71 seconds
      cpu time            3.12 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6755796 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.53 seconds
      cpu time            7.39 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 179967 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6755796 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6935763 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.60 seconds
      cpu time            1.01 seconds



NOTE: There were 6935763 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 427 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.71 seconds
      cpu time            9.62 seconds



NOTE: There were 4224 observations read from the data set TTDATA.COLLECT.
NOTE: There were 427 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 4651 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
```

```
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 191973 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.79 seconds
      cpu time            3.34 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6700521 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.43 seconds
      cpu time            7.15 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 191973 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6700521 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6892494 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.56 seconds
      cpu time            0.93 seconds


NOTE: There were 6892494 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 426 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.70 seconds
      cpu time            9.06 seconds


NOTE: There were 4651 observations read from the data set TTDATA.COLLECT.
NOTE: There were 426 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 5077 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.01 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 205254 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.70 seconds
      cpu time            3.21 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6645175 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.43 seconds
      cpu time            7.25 seconds
```

```
WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 205254 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6645175 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6850429 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.57 seconds
      cpu time            1.00 seconds


NOTE: There were 6850429 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 427 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.64 seconds
      cpu time            8.81 seconds


NOTE: There were 5077 observations read from the data set TTDATA.COLLECT.
NOTE: There were 427 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 5504 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 219378 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.79 seconds
      cpu time            3.11 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6590836 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.23 seconds
      cpu time            7.12 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 219378 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6590836 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6810214 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.53 seconds
      cpu time            1.14 seconds


NOTE: There were 6810214 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 429 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.60 seconds
      cpu time            8.90 seconds
```

```
NOTE: There were 5504 observations read from the data set TTDATA.COLLECT.
NOTE: There were 429 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 5933 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 234513 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.73 seconds
      cpu time            3.12 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6536162 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.29 seconds
      cpu time            7.15 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 234513 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6536162 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6770675 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.54 seconds
      cpu time            1.06 seconds


NOTE: There were 6770675 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 431 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.57 seconds
      cpu time            9.57 seconds


NOTE: There were 5933 observations read from the data set TTDATA.COLLECT.
NOTE: There were 431 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 6364 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.01 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 253107 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.95 seconds
      cpu time            3.32 seconds
```

```
NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6482015 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.34 seconds
      cpu time            6.89 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 253107 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6482015 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6735122 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.54 seconds
      cpu time            1.18 seconds



NOTE: There were 6735122 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 432 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.56 seconds
      cpu time            8.78 seconds



NOTE: There were 6364 observations read from the data set TTDATA.COLLECT.
NOTE: There were 432 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 6796 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 268461 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.73 seconds
      cpu time            3.25 seconds



NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6429704 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.03 seconds
      cpu time            7.07 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 268461 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6429704 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6698165 observations and 18 variables.
```

```
NOTE: DATA statement used (Total process time):
      real time           2.59 seconds
      cpu time            0.89 seconds


NOTE: There were 6698165 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 436 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.48 seconds
      cpu time            9.12 seconds


NOTE: There were 6796 observations read from the data set TTDATA.COLLECT.
NOTE: There were 436 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 7232 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 278343 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.92 seconds
      cpu time            3.34 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6377588 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.03 seconds
      cpu time            6.86 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 278343 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6377588 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6655931 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.46 seconds
      cpu time            1.18 seconds


NOTE: There were 6655931 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 440 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.48 seconds
      cpu time            8.57 seconds


NOTE: There were 7232 observations read from the data set TTDATA.COLLECT.
NOTE: There were 440 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 7672 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
```

```
      cpu time            0.00 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 287012 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.73 seconds
      cpu time            3.23 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6325313 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           8.07 seconds
      cpu time            6.82 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 287012 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6325313 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6612325 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.50 seconds
      cpu time            0.90 seconds


NOTE: There were 6612325 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 443 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.45 seconds
      cpu time            8.61 seconds


NOTE: There were 7672 observations read from the data set TTDATA.COLLECT.
NOTE: There were 443 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 8115 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.01 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
      83944 at 192:205   83944 at 192:223   83944 at 192:230
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.DMCOMPL has 297242 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           3.79 seconds
      cpu time            3.28 seconds


NOTE: Missing values were generated as a result of performing an operation on missing
      values.
      Each place is given by: (Number of times) at (Line):(Column).
```

```
      83944 at 192:128   83944 at 192:146   83944 at 192:153
NOTE: There were 9706250 observations read from the data set WORK.TOTAL.
NOTE: The data set WORK.ACOMPL has 6274224 observations and 17 variables.
NOTE: DATA statement used (Total process time):
      real time           7.84 seconds
      cpu time            6.78 seconds


WARNING: Multiple lengths were specified for the variable pop by input data set(s). This
         can cause truncation of data.
NOTE: There were 297242 observations read from the data set WORK.DMCOMPL.
NOTE: There were 6274224 observations read from the data set WORK.ACOMPL.
NOTE: The data set WORK.SAM has 6571466 observations and 18 variables.
NOTE: DATA statement used (Total process time):
      real time           2.46 seconds
      cpu time            1.14 seconds



NOTE: There were 6571466 observations read from the data set WORK.SAM.
NOTE: The data set WORK.COLLECT has 445 observations and 20 variables.
NOTE: PROCEDURE SUMMARY used (Total process time):
      real time           6.37 seconds
      cpu time            8.65 seconds



NOTE: There were 8115 observations read from the data set TTDATA.COLLECT.
NOTE: There were 445 observations read from the data set WORK.COLLECT.
NOTE: The data set TTDATA.COLLECT has 8560 observations and 20 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.00 seconds


193
194        proc contents  data = TTdata.collect ; run ;

NOTE: PROCEDURE CONTENTS used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds

NOTE: The PROCEDURE CONTENTS printed page 1.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
NOTE: The SAS System used:
      real time           7:57.04
      cpu time            7:36.76
```

2.2.1 08-events.lst

```
The SAS System                                   07:54 Tuesday, February 28, 2017   1

The CONTENTS Procedure

Data Set Name        TTDATA.COLLECT              Observations          8560
Member Type          DATA                        Variables             20
Engine               V9                          Indexes               0
Created              28/02/2017 08:02:45         Observation Length    160
Last Modified        28/02/2017 08:02:45         Deleted Observations  0
Protection                                       Compressed            NO
Data Set Type                                    Sorted                NO
Label
Data Representation  WINDOWS_64
Encoding             wlatin1  Western (Windows)

                    Engine/Host Dependent Information
```

```
Data Set Page Size          65536
Number of Data Set Pages    21
First Data Page             1
Max Obs per Page            409
Obs in First Data Page      391
Number of Data Set Repairs  0
ExtendObsCounter            YES
Filename                    E:\workdata\705093\BxC\daffodil\DATA\collect.sas7bdat
Release Created             9.0401M3
Host Created                X64_SRV12


Alphabetic List of Variables and Attributes

 #    Variable    Type    Len

19    Dth         Num       8
20    PY          Num       8
 6    _FREQ_      Num       8
 5    _TYPE_      Num       8
 1    a           Num       8
12    aAtr        Num       8
 8    aHF         Num       8
10    aHstr       Num       8
11    aIstr       Num       8
 7    aMI         Num       8
 9    aStr        Num       8
18    fAtr        Num       8
14    fHF         Num       8
16    fHstr       Num       8
17    fIstr       Num       8
13    fMI         Num       8
15    fStr        Num       8
 4    pop         Char      2
 3    sex         Num       8
 2    y           Num       8
```