

```

%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106326;
%put NOTE: Client Protocol ID   : ZRHM-PK-05-JP;
%put NOTE: Program Name        : t_banlmceq.sas;
%put NOTE: Purpose              : derive bootstrap dataset for mceq;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADQSPA DSDTM.MCEQBOOT;
%put NOTE: Output               : ;
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_ahall;
%put NOTE: Creation Date        : 2014-05-30;
%put NOTE: SAS Version          : 9.3;
%put NOTE: ;
%put NOTE: == Latest Run
=====;
%put NOTE: Run by                : &sysuserid;
%put NOTE: Date/Time             :
%sysfunc(putn(%sysfunc(date()),e8601da.))T%sysfunc(putn(%sysfunc(time()),
e86011z.));
%put NOTE: ;
%put NOTE: == Modification History
=====;
%put NOTE: Date      Initials   No. Reason;
%put NOTE: 25Jun2014  AMH        1) Small n in statistics row;
%put NOTE: 25Jun2014  AMH        2) Conservative rounding of Ci and SD;
%put NOTE: 25Jun2014  AMH        3) Add mceq listing to reference list;
%put NOTE: 25Jun2014  AMH        4) Ammend footnotes;
%put NOTE: 25Jun2014  AMH        5) Change SD to SE in stats row;
%put NOTE: 25Jun2014  AMH        6) Add Median;
%put NOTE: 23Jun2014  AMH        7) Amend Menthol to menthol ;
%put NOTE: 08Aug2014  AMH        8) Center Output;
%put NOTE: 08Aug2014  AMH        9) Ammend footnotes in listing;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

%include
"/cvn/projects/prj/development/000000106326/dev/adhoc/TMPLTMIX.sas";
*=====;
* START OF PROGRAM CODE                                     ;
*=====;

*****;
* Table Output;
*****;

```

```

data adsl;
    set adam.adsl(where=(pprotfl='Y'));
    if analgrln=1 then do;
        if index(trt01a,'THS 2.2') or index(trt02a,'THS 2.2') then
colord=1;
        output;
        if index(trt01a,'CC') or index(trt02a,'CC') then colord=2;
        output;
    end;
    else if analgrln=2 then do;
        if index(trt01a,'THS 2.2') or index(trt02a,'THS 2.2') then
colord=1;
        output;
        if index(trt01a,'NRT') or index(trt02a,'NRT') then colord=2;
        output;
    end;
    else if missing(analgrln) then delete;
run;

proc sort data=adsl nodupkey out=adsl1;
    by analgrln analgr1 colord subjid;
run;

proc freq data=adsl1(where=(not missing(colord))) noprint;
    table analgrln*analgr1*colord/ out =totals2(drop=percent
rename=(count=total));
run;

data _null_;
    set totals2;
    call
symput('tot'||strip(put(colord,best.))||strip(put(analgrln,best.)),strip(
put(total,best.)));
run;

proc sort data=adam.adqspa(where = (anl01fl = 'Y' and analgrln=1 and
pprotfl='Y')) out=adqspal;
    by analgr1 paramcd;
run;

/*treatment and paramter formats to display text rather than numbers for
listing*/
%fmt(datain=adqspal, start=trtan, label=trta, name=trt);
%fmt(datain=adqspal, start=paramn, label=param, name=par);

data diff lsmean seed;
    set dsdtm.mceqboot;
    if not missing(seed) then output seed;
    else if not missing(_trtan) then output diff;
    else output lsmean;
run;

```

```

proc sort data=diff;
  by paramn trtan replicate;
run;

proc univariate data=diff noprint;
  by paramn trtan ;
  var estimate;
  output out=diffsbd mean=estimate MEDIAN=MED pctlpts=2.5 97.5
pctlpre=P; /* 6) AMH 25Jun2014 */
run;

proc univariate data=diff noprint;
  by paramn trtan ;
  var stderr;
  output out=diffsbe mean=stderr;
run;

data diffsb;
  merge diffsbd diffsbe;
  by paramn trtan ;
run;

proc sort data=lsmean;
  by paramn trtan replicate;
run;

proc univariate data=lsmean noprint;
  by paramn trtan;
  var estimate;
  output out=lsmeansb mean=estimate MEDIAN=MED pctlpts=2.5 97.5
pctlpre=P ; /* 6) AMH 25Jun2014 */
run;

proc sort data=adqspal;
  by paramn trtan usubjid;
run;

proc univariate data=adqspal noprint;
  by paramn trtan;
  var aval;
  output out=num n=n1;
run;

data bootin;
  set diffsb lsmeansb num;
  rename p2_5=lower P97_5=upper;
run;

/*Manipulate datasets for output all relevent stats on each row*/
/* _____ */

```

```

data tabout;
  length out $100 stat $100;
/*  format paramn par.; */
  set bootin;
  analgrln=1;
/*ordering columns of treatmnts*/
  if not missing(stderr) then colord=3;
  else if trtan=4 then colord=1;
  else colord=2;
/* N row*/
  if not missing(n1) then do;
    ord=1;
    stat=/'N'/'n'; /* 1) AMH 25Jun2014 */
    out=compress(put(n1,best.));
    output;
  end;
/*mean (sd) row*/
  if missing(n1) then do;
    ord=2;
    stat='Mean (SE)'; /* 5) AMH 25Jun2014 */
    out=compress(put(round(estimate,0.01),8.2));
    if colord=3 then out=compress(out)||'
(||compress(put(/'round(stderr,0.001)'/CEIL(STDERR*1000)/1000,8.3))||')'
; /* 2) AMH 25Jun2014 */
    output;
/*95% CI row*/
    ord=3;
    stat='95% CI';

out=compress(put(/'round(lower,0.01)'/FLOOR(100*LOWER)/100,8.2))||',
'||compress(put(/'round(upper,0.01)'/CEIL(100*UPPER)/100,8.2)); /* 2) AMH
25Jun2014 */
    output;
/*MEDIAN ROW*/
    ORD=4; /* 6) AMH 25Jun2014 */
    STAT='Median';
    OUT=COMPRESS(PUT(ROUND(MED,0.01),8.2));
    OUTPUT;
  end;
run;

/*transpose for output*/
proc sort data=tabout;
  by analgrln paramn ord colord;
run;

proc transpose data=tabout out=ttabout(drop=_NAME_) prefix=col;
  by analgrln paramn ord stat;
  id colord;
  var out;
run;

```

```

/* Standard - macro for paging */
%macro outrtf(blankn=68, halfblnk=N, ref=);

/* treatment column headers and footnotes */
/*group 1*/
%let col11=THS 2.2 Menthol#(N=&tot11);
%let col21=mCC#(N=&tot21);
%let col31=THS 2.2 Menthol -#mCC;
%let foot1=%str(mCC = menthol conventional cigarettes);/* 7) AMH
23JUN2014 */

%if &halfblnk=N %then %let halfblnk=;
%else %if &halfblnk=Y %then %let halfblnk=~;

/* Standard - just change the number to match the listing you're working
on. Also change the letters in the*/
/* bracket, eg ccb = current cigarette brands. Make sure to do this at
the top of the code too. */

%let tflno=T_15_02_04_16(MCEQ);
/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

/* Standard - leave this */
data _null_;
    tmp="%TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

/*page numbers*/
data paging;
    set ttabout;
    by analgrln paramn ;
    flag=1;
    retain ln 0 page 0;
    if first.paramn then ln+1;
    if first.analgrln or ln>3 then do;
        page+1;
        ln=1;
    end;
    if last.analgrln then call symput("tpage",compress(put(page,best.)));
run;

/* Standard - leave this */
options number nodate orientation=landscape papersize=&p_pgsz missing='
' NOQUOTELNMAX/*turn off warnings about quoted strings to long*/;
ods escapechar='`';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;
%let linebot2 = \brdrb\brdrs\brdrw15;

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```

ods path stdlib.tl06326 (read) ;
ods results off;
ods rtf toc_data/* contents*/
file="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno..rtf"
style=tl06326 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;

%do i=1 %to &tpage;

ODS PROCLABEL = ' ';
title ;
footnote;
%let wd=0;

data comp;
    set paging end=eof;
    by paramn ord;
    where page=&i;
    call symput('grp',compress(put(analgrln,best.)));
    /* Amend title as needed */
    _firtitl="Table 15.2.4.16    Analysis of MCEQ Subscales by
Bootstrapping Techniques - PK Population";
    _upcas=(length(_firtitl)-
length(compress(_firtitl,'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
    len=&blankn.-length("(Page &i of &tpage)");
    if eof then do;
        call symput('_FSRTITL', trim(left(_firtitl)));
        call symput('_blankn', compress(put(len,best.)));
    end;
    drop _firtitl _upcas len;
run;

ods listing close;

* most set up in template others below;
* title arial 12pt bold with 12pt paragraph space below;
* all headers to be arial 11pt bold;
* data arial 10pt;
* headers to be central, text values left aligned and numeric centered
around decimal point;
/* Update with your variables as needed */
proc report data = comp headline headskip missing nowd spanrows split =
'#'
%IF &I=1 %THEN %DO; CONTENTS=' ' %END; %ELSE %DO; CONTENTS='' %END;;
    column flag page paramn ord stat ("Group-&grp PK &linebot." coll
col2 col3) ;
    define flag / order noprint;
    define page          / order order = internal noprint;
    define paramn        / group style={just=left cellwidth=2cm}
"Subscales" format=par.;

```

```

        define ord          / order order=internal noprint;
        define stat          / display style={just=left cellwidth=1.5cm}
"Statistic";
        define coll          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&coll&grp";
        define col2          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&col2&grp";
        define col3          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&col3&grp"; /* 8) AMH 08Aug2014 */

        break after page / page;

break before flag / page %IF &I=1 %THEN %DO;
        CONTENTS="&_FSRTITL" %END; %ELSE %DO; CONTENTS='' %END;;

        compute before page / style={protectspecialchars=off};
        line "&linetop";
        endcomp;

        compute before _page_ / style={just=left protectspecialchars=off};
        line "\b\fs24\sa24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;
        line "&linebot";
        endcomp;

        compute after paramn ;
        line " ";
        endcomp;

        compute after _page_ / style={just=left protectspecialchars=off}
pretext="&linetop."};
        LINE "Note: &&foot&grp; THS = Tobacco Heating System.";
        LINE "Note: Higher scores indicate greater intensity on that
scale";
        LINE "Note: Point and 95% interval estimates by means of the
percentile bootsrap technique of the adjusted least squares means from an
ANOVA model.";
/*        line "Note: Means and 95% confidence interval (CI) are the
adjusted least squares means and CIs from an ANOVA model with sequence,
period and product as fixed effect factors and subject within sequence as
a random effect. Time point is fitted as a repeated effect.";*/
/*        line "Note: Comparison overall time points is the main
comparison.";*/
/*        line "Note: &&foot&grp; THS = Tobacco Heating System.";*/
        line "";
        line "Appendix &ref.";
        line "Path: &TFLpath." &_blankn.*"\~\~" "(Page &i of
&tpage)";
        line "Program Run: &sysdate &sysuserid Program Status:
&status";
        endcomp;

run;
%end;

```

```

ods rtf close;
ods results on;
ods path sashelp.tmplmst (read);

%mend ;

%outtrtf(blankn=68, halfblnk=N, ref=15.4.4.16 and 15.3.6.12); /* 1) AMH
23May2014 */

*****;
*Listing Output;
*****;
/*ordering columns of treatmnents*/

data listout;
  set diff(in=a) lsmean;
  analgrln=1;

  if a then do;
    colord=3;
    out=estimate;
    output;
    colord=4;
    out=stderr;
    output;
  end;

  else if trtan=4 then do;
    out=estimate;
    colord=1;
    output;
  end;
  else do;
    out=estimate;
    colord=2;
    output;
  end;
end;

run;

/*transpose for output*/
proc sort data=listout;
  by analgrln paramn replicate;
run;

proc transpose data=listout out=tlistout(drop=_NAME_) prefix=col;
  by analgrln paramn replicate;
  id colord;
  var out;
run;

```



```

/* Standard - macro for paging */
%macro outrtf(blankn=68, halfblnk=N);

/* treatment column headers and footnotes */
/*group 1*/
%let col11=Lsmean estimate;
%let col21=Lsmean estimate;
%let col31=estimate;
%let col41=SD;
%let foot1=%str(mCC = menthol conventional cigarettes);

%if &halfblnk=N %then %let halfblnk=;
%else %if &halfblnk=Y %then %let halfblnk=~;

/* Standard - just change the number to match the listing you're working
on. Also change the letters in the*/
/* bracket, eg ccb = current cigarette brands. Make sure to do this at
the top of the code too. */

    %let tflno=L_15_04_04_16(MCEQ);

/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

/* Standard - leave this */
data _null_;
    tmp="%TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

/*page numbers*/
data paging;
    set tlistout;
    by analgrln paramn ;
    flag=1;
    retain ln 0 page 0;
    ln+1;
    if first.analgrln or ln>24/*18*/ then do; /* 9) AMH 08Aug2014 */
        page+1;
        ln=1;
    end;
    if last.analgrln then call symput("tpage",compress(put(page,best.)));
run;

DATA PAGING; /* 9) AMH 08Aug2014 */
SET PAGING;
IF PAGE=&TPAGE AND LN>18 THEN PAGE=PAGE+1;
CALL SYMPUT("TPAGE",COMPRESS(PUT(PAGE,BEST.)));
RUN;

```

```

data _null_;
set seed;
call symput('seed',put(seed,8.0));
run;

/* Standard - leave this */
options number nodate orientation=landscape papersize=&p_pgsz missing='
' NOQUOTELNMAX/*turn off warnings about quoted strings to long*/;
ods escapechar='`';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;
%let linebot2 = \brdrb\brdrs\brdrw15;

ods path stdlib.tl06326 (read) ;
ods results off;
ods rtf toc_data/* contents*/
file="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno..rtf"
style=tl06326 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;

%do i=1 %to &tpage;

ODS PROCLABEL = ' ';
title ;
footnote;
%let wd=0;

data comp;
  set paging end=eof;
  by paramn;
  where page=&i;
  call symput('grp',compress(put(analgrln,best.)));
  /* Amend title as needed */
  _firtitl="Listing 15.4.4.16 Analysis of MCEQ Subscales by
Bootstrapping Techniques - PK Population";
  _upcas=(length(_firtitl)-
length(compress(_firtitl,'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
  len=&blankn.-length("(Page &i of &tpage)");
  if eof then do;
    call symput('_FSRTITL', trim(left(_firtitl)));
    call symput('_blankn', compress(put(len,best.)));
  end;
  drop _firtitl _upcas len;
run;

ods listing close;

* most set up in template others below;
* title arial 12pt bold with 12pt paragraph space below;

```

```

* all headers to be arial 11pt bold;
* data arial 10pt;
* headers to be central, text values left aligned and numeric centered
around decimal point;
/* Update with your variables as needed */
proc report data = comp headline headskip missing nowd spanrows split =
'#'
%IF &I=1 %THEN %DO; CONTENTS=' ' %END; %ELSE %DO; CONTENTS='' %END;;
    column flag page paramn replicate ("Group-&grp PK &linebot." ("THS
2.2 Menthol" col1) ("mCC" col2) ("THS 2.2 Menthol - mCC &linebot." col3
col4)) ;
    define flag / order noprint;
    define page          / order order = internal noprint;
    define paramn        / group style={just=left cellwidth=2cm}
"Subscales" format=par.;
    define replicate      / display style={just=left cellwidth=1.5cm}
"Replicate";
    define col1           / display style={just=c cellwidth=1.5cm}
style(header)={just=center} format=8.2 "&&col1&grp";
    define col2           / display style={just=c cellwidth=1.5cm}
style(header)={just=center} format=8.2 "&&col2&grp";
    define col3           / display style={just=c cellwidth=1.5cm}
style(header)={just=center} format=8.2 "&&col3&grp";
    define col4           / display style={just=c cellwidth=1.5cm}
style(header)={just=center} format=8.3 "&&col4&grp";

    break after page / page;

break before flag / page %IF &I=1 %THEN %DO;
    CONTENTS="&_FSRTITL" %END; %ELSE %DO; CONTENTS='' %END;;

compute before page / style={protectspecialchars=off};
    line "&linetop";
endcomp;

compute before _page_ / style={just=left protectspecialchars=off};
    line "\b\fs24\sa24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;
    line "&linebot";
endcomp;

compute after _page_ / style={just=left protectspecialchars=off}
pretext="&linetop.";
%IF &I=&TPAGE %THEN %DO; /* 9) AMH 08Aug2014 */
line "Note: &&foot&grp; THS = Tobacco Heating System.";
    line "&seed. is the seed used to generate samples from the SAS
procedure proc survey select";
    line "Note: Estimates are the adjusted least squares means from
an ANOVA model.";

    line "";
line "Path: &TFLpath."; /*&_blankn.*"\~\~" "(Page &i of &tpage)";*/
%END;

```

```
line "Program Run: &sysdate  &sysuserid  Program Status: &status"
&_blankn.*"\~\~" "(Page &I of &TPAGE)";
      endcomp;
```

```
run;
%end;
ods rtf close;
ods results on;
ods path sashelp.tmplmst (read);
```

```
%mend ;
```

```
%outrtf(blankn=68, halfblnk=N );
```

```
proc printto ; run;
```

```
*=====;
*  END OF PROGRAM CODE                      ;
*=====;
```