Code, Log File and Output for building a model:

```
PROC IMPORT OUT= WORK.S26
            DATAFILE= "C:\S26.csv"
            DBMS=CSV REPLACE;
     GETNAMES=YES;
     DATAROW=2;
RUN;
```

```
NOTE: WORK.S26 data set was successfully created.
NOTE: The data set WORK.S26 has 5399 observations and 28 variables.
NOTE: PROCEDURE IMPORT used (Total process time):
      real time           0.58 seconds
      cpu time            0.53 seconds
```

```
proc contents data=work.s26;
run;

proc freq data=s26;
run;
data s26_1(keep=seqnum--AMOTSC resp respholdout);
set  s26 ;
rand=ranuni(092765);
     if rand <=.7 then RespHoldout=.;
else if rand  >.7 then do;
   RespHoldout=Resp;
   Resp=.
   ;
end;
run;

data s26_2;
set  s26_1;
array orig[10](0, 1, 2,  3,  4,  5,   6,   7,    8,    9);
array new[10] (0,25,75,150,350,750,3000,7500,15000,30000);
retain orig1-orig10 new1-new10;
do i=1 to dim(orig);
 if PWAPAR=orig[i] then PWAPAR2=new[i];
 if PPERSA=orig[i] then PPERSA2=new[i];
 if PAANHA =orig[i] then PAANHA2=new[i];
 if AWAPAR=orig[i] then AWAPAR2=new[i];
 if APERSA=orig[i] then APERSA2=new[i];
 if AMOTSC=orig[i] then AMOTSC2=new[i];
end;
drop orig1--orig10 new1--new10 i;
run;

proc freq data=s26_2;
tables      PWAPAR*PWAPAR2
            PPERSA*PPERSA2
            PAANHA*PAANHA2
            AWAPAR*AWAPAR2
            APERSA*APERSA2
```

```
            AMOTSC*AMOTSC2/list;
run;

data s26_2;
set  s26_2;
drop pwapar paanha ppersa APERSA AWAPAR AMOTSC;
run;

data s26_3;
set  s26_2;
array orig[10](0,  1, 2, 3, 4, 5, 6, 7, 8,  9);
array new[10] (0,5.5,17,30,43,56,69,82,94,100);
retain orig1-orig10 new1-new10;
do i=1 to dim(orig);
if MSKA =orig[i] then MSKA2 =new[i];
if MHHUUR =orig[i] then MHHUUR2 =new[i];
if MFALLE =orig[i] then MFALLE2 =new[i];
if MSKB2  =orig[i] then MSKB22 =new[i];
if MRELGE =orig[i] then MRELGE2 =new[i];
if MSKC =orig[i] then MSKC2 =new[i];
if MAUT2 =orig[i] then MAUT22 =new[i];
if MAUT0  =orig[i] then MAUT02 =new[i];
if MFWEKI =orig[i] then MFWEKI2 =new[i];
if MAUT1  =orig[i] then MAUT12 =new[i];
if MINKGE =orig[i] then MINKGE2 =new[i];
if MOPLHO =orig[i] then MOPLHO2 =new[i];
if MGODRK =orig[i] then MGODRK2 =new[i];
if MSKB1 =orig[i] then MSKB12 =new[i];
if MGODPR =orig[i] then MGODPR2 =new[i];
end;
drop orig1--orig10 new1--new10 i;
run;


proc freq data=s26_3;
tables
MSKA*MSKA2
MHHUUR*MHHUUR2
MFALLE*MFALLE2
MSKB2*MSKB22
MRELGE*MRELGE2
MSKC*MSKC2
MAUT2*MAUT22
MAUT0*MAUT02
MFWEKI*MFWEKI2
MAUT1*MAUT12
MINKGE*MINKGE2
MOPLHO*MOPLHO2
MGODRK*MGODRK2
MSKB1*MSKB12
MGODPR*MGODPR2
/list;
run;

data s26_4;
set  s26_3;
drop
```

```
MSKA
MHHUUR
MFALLE
MSKB2
MRELGE
MSKC
MAUT2
MAUT0
MFWEKI
MAUT1
MINKGE
MOPLHO
MGODRK
MSKB1
MGODPR
;
run;

data indep;
set  s26_4 (drop=resp seqnum moshoo mostyp);
run;

%ObsAndVars(indep);
%varlist(indep);


%macro GraphLoop;
options mprint;
 %do i=1 %to &nvars;
   %let variable=%scan(&varlist,&i);
%DissGraphMakerLogOdds(s26_4,10,&variable,resp);
 %end;
options nomprint;
%mend GraphLoop;
%GraphLoop;

%CatToBinWithDrop(s26_4,seqnum,mostyp);
%CatToBinWithDrop(s26_4,seqnum,MOSHOO);

data s26_5;
set s26_4;
run;

proc logistic data=s26_5 descending;
model resp=
mostyp_1 mostyp_2 mostyp_3 mostyp_4 mostyp_5 mostyp_6 mostyp_7 mostyp_8
mostyp_9 mostyp_10 mostyp_11 mostyp_12 mostyp_13 mostyp_15 mostyp_16
mostyp_17 mostyp_18 mostyp_19 mostyp_20 mostyp_21 mostyp_22 mostyp_23
mostyp_24 mostyp_25 mostyp_26 mostyp_28 mostyp_29 mostyp_30 mostyp_31
mostyp_32 mostyp_33 mostyp_34 mostyp_35 mostyp_36 mostyp_37 mostyp_38
mostyp_39 mostyp_40 mostyp_41
MSKA2
MOSHOO_1 MOSHOO_2 MOSHOO_3 MOSHOO_4 MOSHOO_5 MOSHOO_6 MOSHOO_7 MOSHOO_8
MOSHOO_9 MOSHOO_10
MHHUUR2
MFALLE2
MSKB22
```

```
MGEMLE
MRELGE2
MSKC2
MAUT22
MAUT02
MFWEKI2
MAUT12
MINKGE2
MOPLHO2
MGODRK2
MSKB12
MGEMOM
MAANTH
MGODPR2
PWAPAR2
PPERSA2
PAANHA2
AWAPAR2
APERSA2
AMOTSC2
/selection=stepwise;
output out=scored p=pred;
run;
```

```
NOTE: PROC LOGISTIC is modeling the probability that Resp='1'.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 0.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 1.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 2.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 3.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 4.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 5.
NOTE: Convergence criterion (GCONV=1E-8) satisfied in Step 6.
NOTE: There were 5399 observations read from the data set WORK.S26_5.
NOTE: The data set WORK.SCORED has 5399 observations and 79 variables.
NOTE: PROCEDURE LOGISTIC used (Total process time):
      real time           2.03 seconds
      cpu time            1.82 seconds
```

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Output for summary of the stepwise selection logistic model:

Summary of Stepwise Selection								
Step	Effect Entered	Effect Removed	DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq	Variable Label
1	AMOTSC2		1	1	57.1146		<.0001	
2	mostyp_21		1	2	34.8744		<.0001	mostyp_ 21
3	MSKB12		1	3	21.2835		<.0001	
4	MRELGE2		1	4	12.8910		0.0003	
5	MFWEKI2		1	5	6.0396		0.0140	
6	MGODPR2		1	6	4.6346		0.0313	

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-2.6456	0.1267	435.9710	<.0001
mostyp_21	1	0.8041	0.2164	13.8047	0.0002
MRELGE2	1	0.0134	0.00348	14.8531	0.0001
MFWEKI2	1	-0.0252	0.0102	6.0423	0.0140
MSKB12	1	-0.0205	0.00493	17.2402	<.0001
MGODPR2	1	-0.0420	0.0197	4.5282	0.0333
AMOTSC2	1	0.1108	0.0211	27.4847	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
mostyp_21	2.235	1.462	3.415
MRELGE2	1.014	1.007	1.020
MFWEKI2	0.975	0.956	0.995
MSKB12	0.980	0.970	0.989
MGODPR2	0.959	0.922	0.997
AMOTSC2	1.117	1.072	1.164

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	66.1	Somers' D	0.353
Percent Discordant	30.8	Gamma	0.365
Percent Tied	3.1	Tau-a	0.039
Pairs	773080	c	0.677

```
data holdout;
set  scored;
if   respholdout>.;
run;
```

```
NOTE: There were 5399 observations read from the data set WORK.SCORED.
NOTE: The data set WORK.HOLDOUT has 1665 observations and 79 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds
```

```
proc sort data=holdout;
by descending pred;
run;
```

```
NOTE: There were 1665 observations read from the data set WORK.HOLDOUT.
NOTE: The data set WORK.HOLDOUT has 1665 observations and 79 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds
```

```
data RespAnal (keep=reccount respholdout cumcount cumresp);
set  holdout;
reccount=1;
cumcount+reccount;
cumresp+respholdout;
run;
```

```
NOTE: There were 1665 observations read from the data set WORK.HOLDOUT.
NOTE: The data set WORK.RESPANAL has 1665 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           0.02 seconds
      cpu time            0.01 seconds
```

```
proc freq data=RespAnal;
tables respholdout;
run;
```

```
data RespAnal;
set  RespAnal;
RespPct=cumresp/103;
CountPct=cumcount/1665;
run;
```

```
NOTE: There were 1665 observations read from the data set WORK.RESPANAL.
NOTE: The data set WORK.RESPANAL has 1665 observations and 6 variables.
NOTE: DATA statement used (Total process time):
      real time           0.02 seconds
      cpu time            0.01 seconds
```

```
data cutpoint;
set  RespAnal;
lagCountPct=lag(CountPct);
if   CountPct ge .75 and lagCountPct lt .75 then output;
run;
```

```
NOTE: There were 1665 observations read from the data set WORK.RESPANAL.
NOTE: The data set WORK.CUTPOINT has 1 observations and 7 variables.
NOTE: DATA statement used (Total process time):
      real time           0.02 seconds
      cpu time            0.01 seconds
```

```
proc print data=cutpoint;
run;
```

Output:

Obs	RespHoldout	reccount	cumcount	cumresp	RespPct	CountPct	lagCountPct
1	0	1	1249	86	0.83495	0.75015	0.74955

```
proc reg data=s26_5;
model resp=mostyp_21 MRELGE2 MFWEKI2 MSKB12 MGODPR2 AMOTSC2;
run;
quit;
```

Gains Chart: