```
* Encoding: UTF-8.
* Syntax for Analysis Example Replication ASDA3 C10, Winter 2025.

* Get NCSR data.
GET
  SAS DATA='P:\ASDA3\data sets for analysis examples and stata r code\ncsr.sas7bdat'.
DATASET NAME NCSR WINDOW=FRONT.
* reverse coding and variable creation.
compute revag4cat=5-ag4cat.
compute reved4cat=5-ed4cat.
compute revmar3cat=4-mar3cat.
compute sexm=(sex=1).
compute revracecat=5-racecat.

compute ageonsetmde=age.
 if mde=1 ageonsetmde=mde_ond.
execute.
*DATASET ACTIVATE NCSR.
 FREQUENCIES VARIABLES=ageonsetmde
 /ORDER=ANALYSIS.
```

Frequencies

Notes

Output Created		27-FEB-2025 10:37:44
Comments		
Input	Active Dataset	NCSR
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9282
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=ageonsetmde /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

[NCSR]

Statistics

ageonsetmde

N	Valid	9282
	Missing	0

ageonsetmde

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	20	.2	.2	.2
	5.00	18	.2	.2	.4
	6.00	19	.2	.2	.6
	7.00	19	.2	.2	.8
	8.00	23	.2	.2	1.1
	9.00	16	.2	.2	1.2
	10.00	34	.4	.4	1.6
	11.00	28	.3	.3	1.9
	12.00	76	.8	.8	2.7
	13.00	70	.8	.8	3.5
	14.00	54	.6	.6	4.1
	15.00	66	.7	.7	4.8
	16.00	88	.9	.9	5.7
	17.00	64	.7	.7	6.4
	18.00	214	2.3	2.3	8.7
	19.00	212	2.3	2.3	11.0
	20.00	222	2.4	2.4	13.4
	21.00	200	2.2	2.2	15.5
	22.00	195	2.1	2.1	17.6
	23.00	184	2.0	2.0	19.6
	24.00	176	1.9	1.9	21.5
	25.00	203	2.2	2.2	23.7
	26.00	159	1.7	1.7	25.4
	27.00	194	2.1	2.1	27.5
	28.00	162	1.7	1.7	29.3
	29.00	152	1.6	1.6	30.9
	30.00	233	2.5	2.5	33.4
	31.00	148	1.6	1.6	35.0
	32.00	186	2.0	2.0	37.0
	33.00	159	1.7	1.7	38.7
	34.00	180	1.9	1.9	40.7

	35.00	194	2.1	2.1	42.7
	36.00	171	1.8	1.8	44.6
	37.00	182	2.0	2.0	46.6
	38.00	215	2.3	2.3	48.9
	39.00	153	1.6	1.6	50.5
	40.00	209	2.3	2.3	52.8
	41.00	158	1.7	1.7	54.5
	42.00	194	2.1	2.1	56.6
	43.00	193	2.1	2.1	58.6
	44.00	162	1.7	1.7	60.4
	45.00	151	1.6	1.6	62.0
	46.00	126	1.4	1.4	63.4
	47.00	160	1.7	1.7	65.1
	48.00	142	1.5	1.5	66.6
	49.00	160	1.7	1.7	68.3
	50.00	150	1.6	1.6	70.0
	51.00	124	1.3	1.3	71.3
	52.00	141	1.5	1.5	72.8
	53.00	122	1.3	1.3	74.1
	54.00	115	1.2	1.2	75.4
	55.00	94	1.0	1.0	76.4
	56.00	121	1.3	1.3	77.7
	57.00	100	1.1	1.1	78.8
	58.00	112	1.2	1.2	80.0
	59.00	96	1.0	1.0	81.0
	60.00	103	1.1	1.1	82.1
	61.00	76	.8	.8	82.9
	62.00	82	.9	.9	83.8
	63.00	74	.8	.8	84.6
	64.00	90	1.0	1.0	85.6
	65.00	79	.9	.9	86.4
	66.00	70	.8	.8	87.2
	67.00	71	.8	.8	88.0
	68.00	90	1.0	1.0	88.9
	69.00	70	.8	.8	89.7
	70.00	64	.7	.7	90.4
	71.00	75	.8	.8	91.2
	72.00	63	.7	.7	91.9

	73.00	65	.7	.7	92.6
	74.00	75	.8	.8	93.4
	75.00	59	.6	.6	94.0
	76.00	75	.8	.8	94.8
	77.00	57	.6	.6	95.4
	78.00	64	.7	.7	96.1
	79.00	45	.5	.5	96.6
	80.00	54	.6	.6	97.2
	81.00	54	.6	.6	97.8
	82.00	32	.3	.3	98.1
	83.00	30	.3	.3	98.4
	84.00	32	.3	.3	98.8
	85.00	17	.2	.2	99.0
	86.00	19	.2	.2	99.2
	87.00	19	.2	.2	99.4
	88.00	13	.1	.1	99.5
	89.00	10	.1	.1	99.6
	90.00	15	.2	.2	99.8
	91.00	6	.1	.1	99.8
	92.00	4	.0	.0	99.9
	93.00	5	.1	.1	99.9
	94.00	2	.0	.0	100.0
	95.00	1	.0	.0	100.0
	98.00	2	.0	.0	100.0
	99.00	1	.0	.0	100.0
	Total	9282	100.0	100.0	

```
* Section 10.3.3 Kaplan Meier Survival Curve.
* Note ncsr_p1wt.csaplan file is already created, see previous chapters for details.
CSCOXREG ageonsetmde
 /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan'
 /VARIABLES STATUS=mde(1) BASELINESTRATA=racecat
 /PRINT SAMPLEINFO EVENTINFO
 /STATISTICS PARAMETER SE CINTERVAL
 /PLOT SURVIVAL CI=NO
 /TEST TYPE=F PADJUST=LSD
 /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95
 /SURVIVALMETHOD BASELINE=EFRON CI=LOG
 /MISSING CLASSMISSING=EXCLUDE.
```

Complex Samples: Cox Regression

Notes

Output Created		27-FEB-2025 10:38:02
Comments		
Input	Active Dataset	NCSR
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9282
	Plan File	P:\ASDA3\data sets for analysis examples and stata r code/ncsr_p1wt.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values for the strata, cluster, subpopulation, event status, subject ID, baseline strata, and factor variables are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.

Syntax		CSCOXREG ageonsetmde /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan' /VARIABLES STATUS=mde(1) BASELINESTRATA=racecat /PRINT SAMPLEINFO EVENTINFO /STATISTICS PARAMETER SE CINTERVAL /PLOT SURVIVAL CI=NO /TEST TYPE=F PADJUST=LSD /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95 /SURVIVALMETHOD BASELINE=EFRON CI=LOG /MISSING CLASSMISSING=EXCLUDE.
Resources	Processor Time	00:00:01.89
	Elapsed Time	00:00:00.89

Warnings

There are no predictors in the model. The baseline hazard only model is considered. Any tables related to regression parameters are ignored.

Sample Design Information

			N
Unweighted Counts	Valid	Subjects	9282
		Cases	9282
	Invalid Cases		0
	Total Cases		9282
Population Subject Size			9282.000
Stage 1	Strata		42
	Units		84
Sampling Design Degrees of Freedom			42

Event and Censoring Information

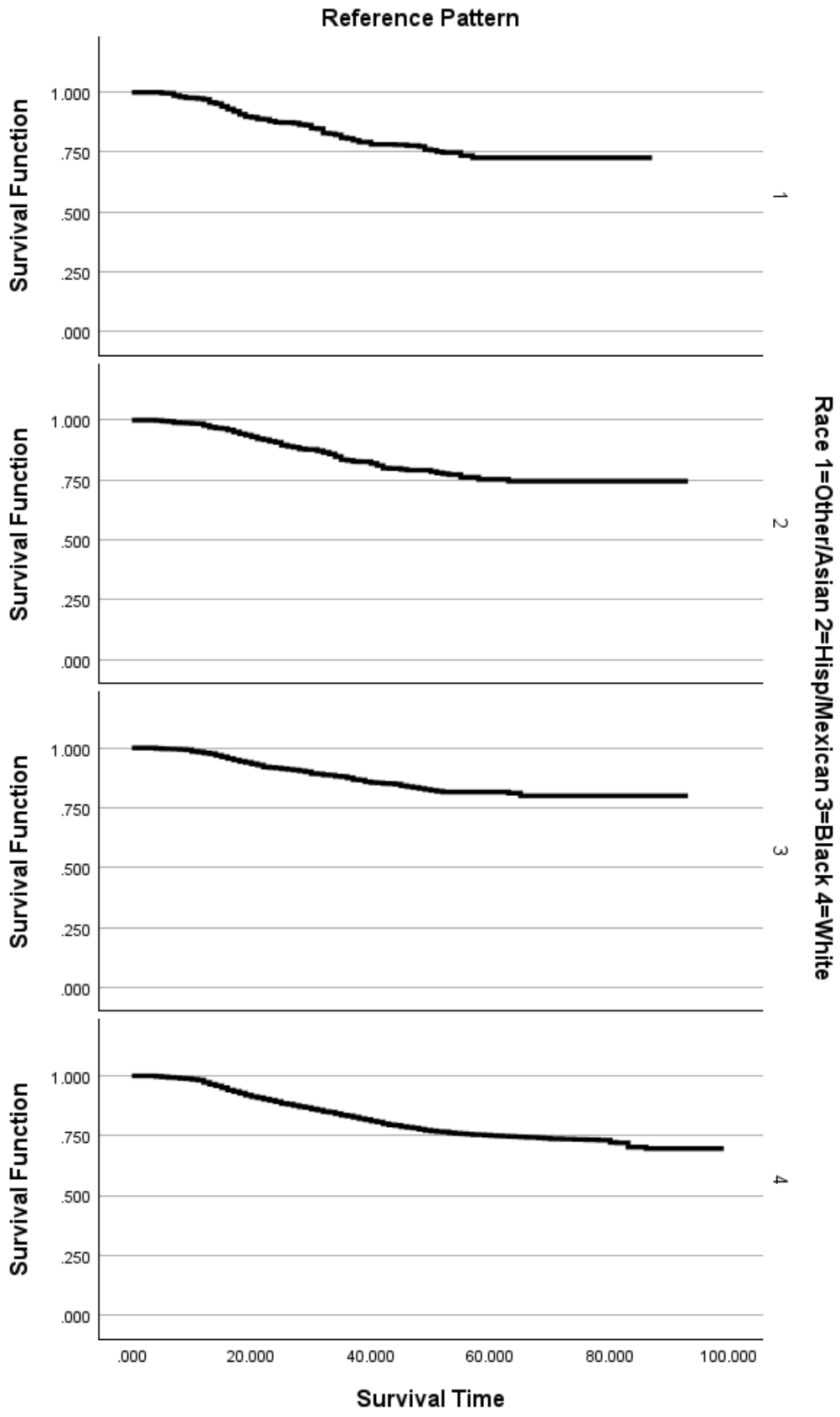
Baseline Strata		Total		Event		Censored	
		Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Race 1=Other/Asian 2=Hisp/Mexican 3=Black 4=White	1	473	404.334	103	81.677	370	322.657
	2	883	1006.616	165	164.894	718	841.723
	3	1230	1072.792	184	150.990	1046	921.802
	4	6696	6798.258	1377	1381.903	5319	5416.355
Total		9282	9282.000	1829	1779.464	7453	7502.536

Event and Censoring Information

Baseline Strata		Censored Percent	
		Unweighted	Weighted
Race 1=Other/Asian 2=Hisp/Mexican 3=Black 4=White	1	78.2%	79.8%
	2	81.3%	83.6%
	3	85.0%	85.9%
	4	79.4%	79.7%
Total		80.3%	80.8%

Event Status variable: Major Depressive Episode 1=Yes 0=No = 1

Survival Function Charts


Reference Pattern
Survival Function
1.000
.750
.500
.250
.000
1
2
3
4
Race 1=Other/Asian 2=Hisp/Mexican 3=Black 4=White
.000
20.000
40.000
60.000
80.000
100.000
Survival Time

```
* Section 10.4.5 Example of a Cox Proportional Hazards Model.
CSCOXREG ageonsetmde BY revmar3cat revracecat reved4cat WITH AGE sexm
 /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan'
 /VARIABLES STATUS=mde(1)
 /MODEL revmar3cat revracecat reved4cat AGE sexm
 /PRINT SAMPLEINFO EVENTINFO
 /STATISTICS PARAMETER EXP SE CINTERVAL TTEST
 /PLOT SURVIVAL CI=NO
 /TEST TYPE=F PADJUST=LSD
 /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95
 /SURVIVALMETHOD BASELINE=EFRON CI=LOG
 /MISSING CLASSMISSING=EXCLUDE.
```

Complex Samples: Cox Regression

Notes

Output Created		27-FEB-2025 10:39:43
Comments		
Input	Active Dataset	NCSR
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9282
	Plan File	P:\ASDA3\data sets for analysis examples and stata r code/ncsr_p1wt.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values for the strata, cluster, subpopulation, event status, subject ID, baseline strata, and factor variables are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.

Syntax		CSCOXREG ageonsetmde BY revmar3cat revracecat reved4cat WITH AGE sexm /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan' /VARIABLES STATUS=mde(1) /MODEL revmar3cat revracecat reved4cat AGE sexm /PRINT SAMPLEINFO EVENTINFO /STATISTICS PARAMETER EXP SE CINTERVAL TTEST /PLOT SURVIVAL CI=NO /TEST TYPE=F PADJUST=LSD /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95 /SURVIVALMETHOD BASELINE=EFRON CI=LOG /MISSING CLASSMISSING=EXCLUDE.
Resources	Processor Time	00:00:02.81
	Elapsed Time	00:00:01.34

Warnings

The log-likelihood value cannot be increased after the maximum number of steps in the step-halving method.
The CSCOXREG procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Sample Design Information

			N
Unweighted Counts	Valid	Subjects	9282
		Cases	9282
	Invalid Cases		0

Total Cases		9282
Population Subject Size		9282.000
Stage 1	Strata	42
	Units	84
Sampling Design Degrees of Freedom		42

Event and Censoring Information

Total		Event		Censored		Censored Percent	
Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
9282	9282.000	1829	1779.464	7453	7502.536	80.3%	80.8%

Event Status variable: Major Depressive Episode 1=Yes 0=No = 1

Tests of Model Effects

Source	df1	df2	Wald F	Sig.
revmar3cat	2.000	41.000	34.634	<.001
revracecat	3.000	40.000	13.435	<.001
reved4cat	3.000	40.000	1.975	.133
age	1.000	42.000	431.229	<.001
sexm	1.000	42.000	53.012	<.001

Survival Time Variable: ageonsetmde

Event Status Variable: Major Depressive Episode 1=Yes 0=No = 1

Model: revmar3cat, revracecat, reved4cat, age, sexm

Parameter Estimates[a]

			95% Confidence Interval		Hypothesis Test			
Parameter	B	Std. Error	Lower	Upper	t	df	Sig.	Exp(B)
[revmar3cat=1.00]	.082	.089	-.098	.262	.914	42.000	.366	1.085
[revmar3cat=2.00]	.505	.060	.383	.626	8.364	42.000	<.001	1.657
[revmar3cat=3.00]	.000[b]	.	.	.	.	.	.	1.000
[revracecat=1.00]	.078	.118	-.160	.317	.661	42.000	.512	1.081
[revracecat=2.00]	-.481	.150	-.783	-.179	-3.212	42.000	.003	.618
[revracecat=3.00]	-.251	.135	-.524	.021	-1.860	42.000	.070	.778
[revracecat=4.00]	.000[b]	.	.	.	.	.	.	1.000

[reved4cat=1.00]	-.091	.064	-.220	.038	-1.430	42.000	.160	.913
[reved4cat=2.00]	.045	.058	-.073	.163	.774	42.000	.444	1.046
[reved4cat=3.00]	-.057	.067	-.193	.078	-.853	42.000	.399	.944
[reved4cat=4.00]	.000[b]	.	.	.	.	.	.	1.000
age	-.050	.002	-.055	-.045	-20.766	42.000	<.001	.952
sexm	-.455	.063	-.582	-.329	-7.281	42.000	<.001	.634

Parameter Estimates[a]

	95% Confidence Interval for Exp(B)	
Parameter	Lower	Upper
[revmar3cat=1.00]	.906	1.299
[revmar3cat=2.00]	1.467	1.871
[revmar3cat=3.00]	.	.
[revracecat=1.00]	.852	1.373
[revracecat=2.00]	.457	.836
[revracecat=3.00]	.592	1.022
[revracecat=4.00]	.	.
[reved4cat=1.00]	.802	1.038
[reved4cat=2.00]	.930	1.177
[reved4cat=3.00]	.824	1.082
[reved4cat=4.00]	.	.
age	.947	.956
sexm	.559	.720

Survival Time Variable: ageonsetmde

Event Status Variable: Major Depressive Episode 1=Yes 0=No = 1

Model: revmar3cat, revracecat, reved4cat, age, sexm[a]

a. Tie breaking method: Efron

b. Set to zero because this parameter is redundant.

Pattern Values

		Survival Time Interval						
		Start	End	Age	Male 1=Yes 0=No	revmar3cat	revracecat	reved4cat
Reference Pattern	1	.000 [a]		44.78	.48	3.00	4.00	4.00

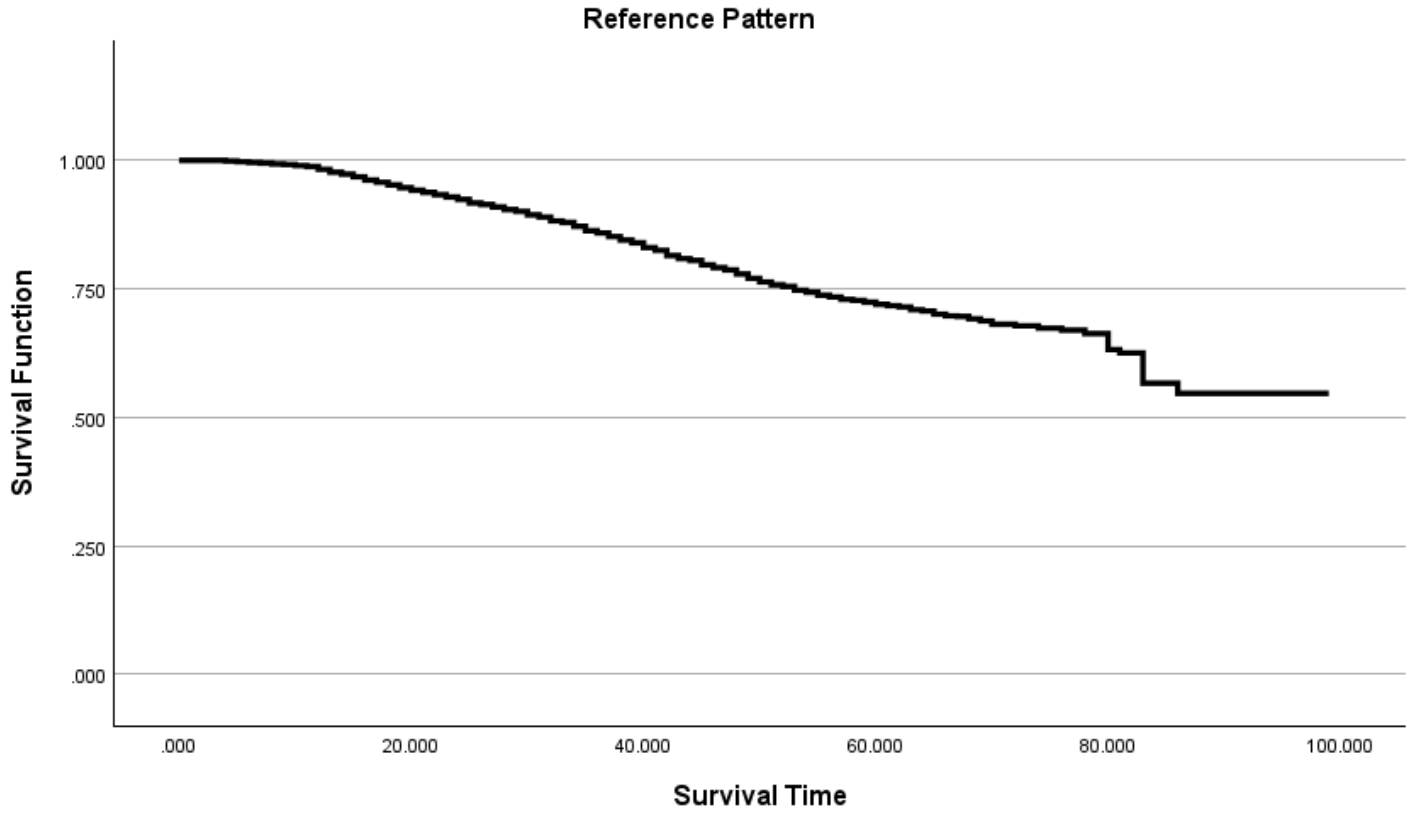
Unspecified predictor is assigned the value of this predictor at the reference pattern.

Each Survival Time Interval is defined as Start < Survival Time <= End.

Model: revmar3cat, revracecat, reved4cat, age, sexm.

a. Unbounded

Survival Function Charts



```
* NOTE: CODES:
  RACECAT 1=OTHER 2=HISPANIC 3=BLACK 4=WHITE,
  MARCAT 1=MARRIED 2=PREVIOUSLY MARRIED 3=NEVER MARRIED,
  ED4CAT 1=0-11 2=12 3=13-15 4=16+ YEARS OF EDUCATION,
  SEXM 1=MALE 0=NON-MALE.
* REVERSE CODING IS SIMPLY THE REVERSE OF THE ORIGINAL CODES.

* Test proportional hazards assumption for the fitted Cox model using PLOT command.
CSCOXREG ageonsetmde BY revmar3cat revracecat reved4cat WITH AGE sexm
 /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan'
 /VARIABLES STATUS=mde(1)
 /MODEL revmar3cat revracecat reved4cat AGE sexm
 /PRINT SAMPLEINFO EVENTINFO
 /STATISTICS PARAMETER EXP SE CINTERVAL TTEST
 /PLOT LML CI=NO
 /PATTERN BY revracecat
 /TEST TYPE=F PADJUST=LSD
 /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95
 /SURVIVALMETHOD BASELINE=EFRON CI=LOG
 /MISSING CLASSMISSING=EXCLUDE.
```

Complex Samples: Cox Regression

Notes

Output Created		27-FEB-2025 10:40:50
Comments		
Input	Active Dataset	NCSR
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9282
	Plan File	P:\ASDA3\data sets for analysis examples and stata r code/ncsr_p1wt.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values for the strata, cluster, subpopulation, event status, subject ID, baseline strata, and factor variables are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.

Syntax		CSCOXREG ageonsetmde BY revmar3cat revracecat reved4cat WITH AGE sexm /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\ncsr_p1wt.csaplan' /VARIABLES STATUS=mde(1) /MODEL revmar3cat revracecat reved4cat AGE sexm /PRINT SAMPLEINFO EVENTINFO /STATISTICS PARAMETER EXP SE CINTERVAL TTEST /PLOT LML CI=NO /PATTERN BY revracecat /TEST TYPE=F PADJUST=LSD /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] TIES=EFRON CILEVEL=95 /SURVIVALMETHOD BASELINE=EFRON CI=LOG /MISSING CLASSMISSING=EXCLUDE.
Resources	Processor Time	00:00:03.09
	Elapsed Time	00:00:01.45

Warnings

The log-likelihood value cannot be increased after the maximum number of steps in the step-halving method.
The CSCOXREG procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Sample Design Information

			N
Unweighted Counts	Valid	Subjects	9282
		Cases	9282

	Invalid Cases	0
	Total Cases	9282
Population Subject Size		9282.000
Stage 1	Strata	42
	Units	84
Sampling Design Degrees of Freedom		42

Event and Censoring Information

Total		Event		Censored		Censored Percent	
Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
9282	9282.000	1829	1779.464	7453	7502.536	80.3%	80.8%

Event Status variable: Major Depressive Episode 1=Yes 0=No = 1

Tests of Model Effects

Source	df1	df2	Wald F	Sig.
revmar3cat	2.000	41.000	34.634	<.001
revracecat	3.000	40.000	13.435	<.001
reved4cat	3.000	40.000	1.975	.133
age	1.000	42.000	431.229	<.001
sexm	1.000	42.000	53.012	<.001

Survival Time Variable: ageonsetmde

Event Status Variable: Major Depressive Episode 1=Yes 0=No = 1

Model: revmar3cat, revracecat, reved4cat, age, sexm

Parameter Estimates[a]

Parameter	B	Std. Error	95% Confidence Interval		Hypothesis Test			Exp(B)
			Lower	Upper	t	df	Sig.	
[revmar3cat=1.00]	.082	.089	-.098	.262	.914	42.000	.366	1.085
[revmar3cat=2.00]	.505	.060	.383	.626	8.364	42.000	<.001	1.657
[revmar3cat=3.00]	.000[b]	.	.	.	.	.	.	1.000
[revracecat=1.00]	.078	.118	-.160	.317	.661	42.000	.512	1.081
[revracecat=2.00]	-.481	.150	-.783	-.179	-3.212	42.000	.003	.618
[revracecat=3.00]	-.251	.135	-.524	.021	-1.860	42.000	.070	.778
[revracecat=4.00]	.000[b]	.	.	.	.	.	.	1.000
[reved4cat=1.00]	-.091	.064	-.220	.038	-1.430	42.000	.160	.913
[reved4cat=2.00]	.045	.058	-.073	.163	.774	42.000	.444	1.046
[reved4cat=3.00]	-.057	.067	-.193	.078	-.853	42.000	.399	.944
[reved4cat=4.00]	.000[b]	.	.	.	.	.	.	1.000
age	-.050	.002	-.055	-.045	-20.766	42.000	<.001	.952
sexm	-.455	.063	-.582	-.329	-7.281	42.000	<.001	.634

Parameter Estimates[a]

Parameter	95% Confidence Interval for Exp(B)	
	Lower	Upper
[revmar3cat=1.00]	.906	1.299
[revmar3cat=2.00]	1.467	1.871
[revmar3cat=3.00]	.	.
[revracecat=1.00]	.852	1.373
[revracecat=2.00]	.457	.836
[revracecat=3.00]	.592	1.022
[revracecat=4.00]	.	.
[reved4cat=1.00]	.802	1.038
[reved4cat=2.00]	.930	1.177
[reved4cat=3.00]	.824	1.082
[reved4cat=4.00]	.	.
age	.947	.956
sexm	.559	.720

Survival Time Variable: ageonsetmde

Event Status Variable: Major Depressive Episode 1=Yes 0=No = 1

Model: revmar3cat, revracecat, reved4cat, age, sexm[a]

a. Tie breaking method: Efron

b. Set to zero because this parameter is redundant.

Pattern Values

		Survival Time Interval						
		Start	End	Age	Male 1=Yes 0=No	revmar3cat	revracecat	reved4cat
Reference Pattern	1	.000 [a]		44.78	.48	3.00	4.00	4.00
Pattern 1.1	1	.000 [a]		44.78	.48	3.00	1.00	4.00
Pattern 1.2	1	.000 [a]		44.78	.48	3.00	2.00	4.00
Pattern 1.3	1	.000 [a]		44.78	.48	3.00	3.00	4.00
Pattern 1.4	1	.000 [a]		44.78	.48	3.00	4.00	4.00

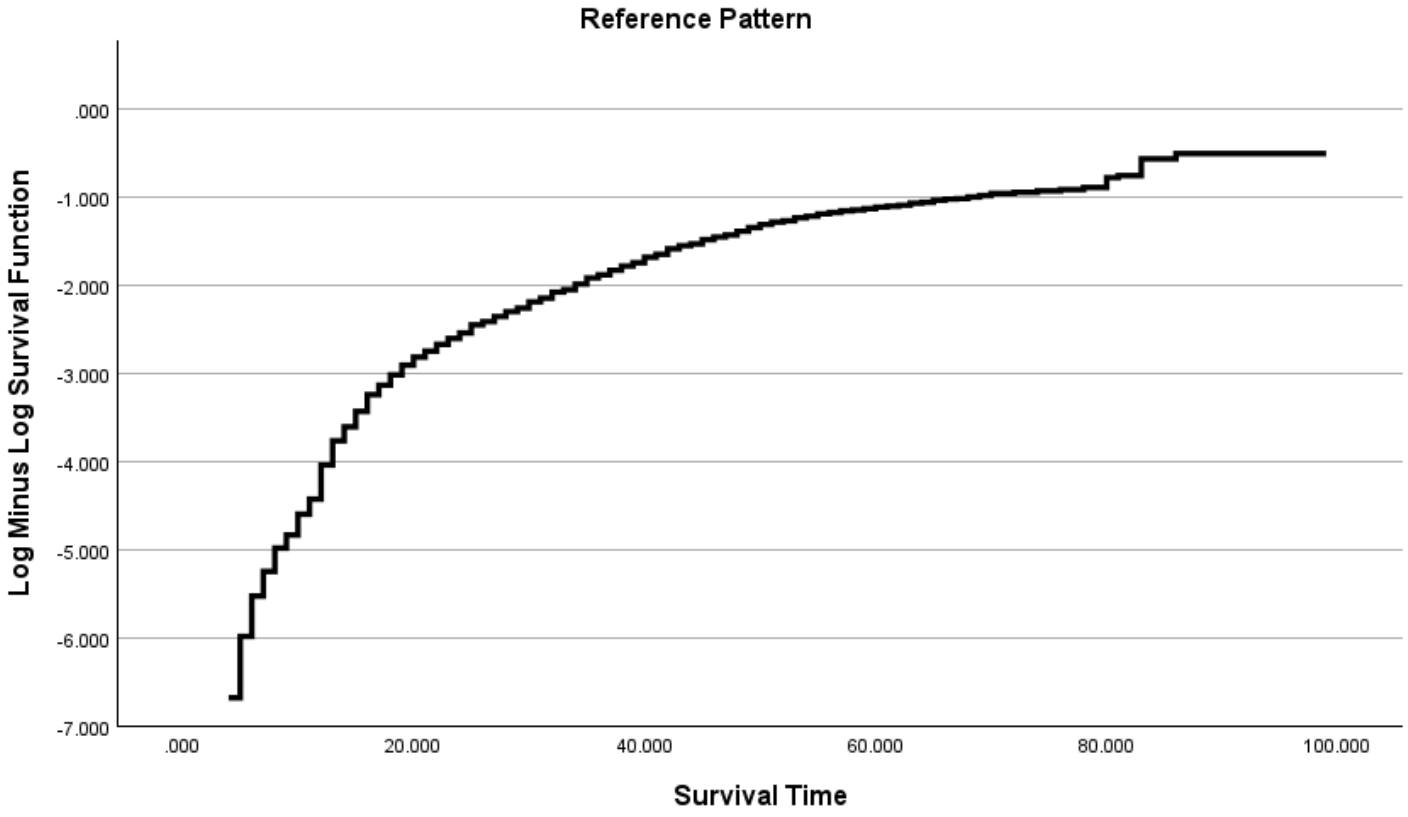
Unspecified predictor is assigned the value of this predictor at the reference pattern.

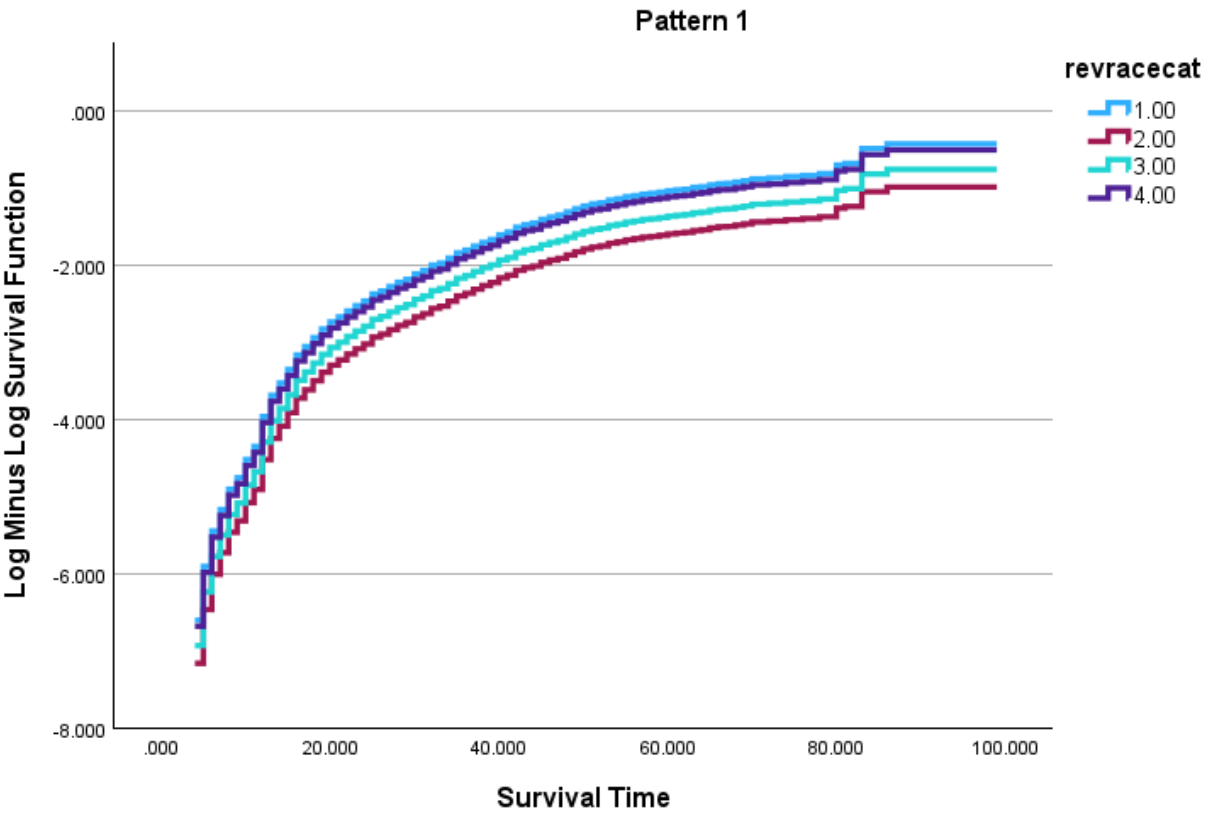
Each Survival Time Interval is defined as Start < Survival Time <= End.

Model: revmar3cat, revracecat, reved4cat, age, sexm.

a. Unbounded

Log Minus Log Survival Function Charts




Pattern 1
revracecat
1.00
2.00
3.00
4.00
Log Minus Log Survival Function
.000
-2.000
-4.000
-6.000
-8.000
.000
20.000
40.000
60.000
80.000
100.000
Survival Time

```
* Section 10.5.5 Fitting a Discrete Time Model to Complex Sample Survey Data.
* Read in Expanded or Long Data Set for NCSR, Saved from SAS program for C10.
GET
  SAS DATA='P:\ASDA3\data sets for analysis examples and stata r code\c10_expanded1.sas7bdat'.
DATASET NAME DataSet1 WINDOW=FRONT.

* Prepare for analysis: reverse coding and variable creation.
compute revag4cat=5-ag4cat.
compute reved4cat=5-ed4cat.
compute revmar3cat=4-mar3cat.
compute sexm=(sex=1).
compute revracecat=5-racecat.
*compute mdetv=0.
*if (pyr=mde_ond) mdetv=1.
execute.
* Prepare filter for discrete time model, need cases <= age of onset of mde or censor.
COMPUTE filter_$=(pyr <= ageonsetmde ).
VARIABLE LABEL filter_$ 'pyr <= ageonsetmde (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
SHOW FILTER.
```

SHOW

Notes

Output Created		27-FEB-2025 10:42:02
Comments		
Input	Active Dataset	DataSet1
	Filter	pyr <= ageonsetmde (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	385696
Syntax		SHOW FILTER.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

[DataSet1]

System Settings

Keyword	Description	Setting
FILTER	Filter variable	pyr <= ageonsetmde (FILTER)

```
* Table 10.5, Discrete Time Logistic Regression NCS-R data .
CSLOGISTIC mdetv(LOW) BY reved4cat revmar3cat revracecat WITH pyr sexm intwage
 /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\\ncsr_p1wt.csaplan'
 /MODEL reved4cat revmar3cat revracecat pyr sexm intwage
 /INTERCEPT INCLUDE=YES SHOW=YES
 /STATISTICS PARAMETER EXP SE CINTERVAL TTEST
 /TEST TYPE=F PADJUST=LSD
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] CHKSEP=20 CILEVEL=95
 /PRINT SUMMARY SAMPLEINFO.
```

Complex Samples: Logistic Regression

Notes

Output Created		27-FEB-2025 10:42:14
Comments		
Input	Active Dataset	DataSet1
	Filter	pyr <= ageonsetmde (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	385696
	Plan File	P:\ASDA3\data sets for analysis examples and stata r code/ncsr_p1wt.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values among the strata, cluster, subpopulation and factor variables are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.

Syntax		CSLOGISTIC mdetv(LOW) BY reved4cat revmar3cat revracecat WITH pyr sexm intwage /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\\ncsr_p1wt.csaplan' /MODEL reved4cat revmar3cat revracecat pyr sexm intwage /INTERCEPT INCLUDE=YES SHOW=YES /STATISTICS PARAMETER EXP SE CINTERVAL TTEST /TEST TYPE=F PADJUST=LSD /MISSING CLASSMISSING=EXCLUDE /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] CHKSEP=20 CILEVEL=95 /PRINT SUMMARY SAMPLEINFO.
Resources	Processor Time	00:00:09.30
	Elapsed Time	00:00:05.71

Warnings

The log-likelihood value cannot be increased after the maximum number of steps in the step-halving method.
The CSLOGISTIC procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Sample Design Information

		N
Unweighted Cases	Valid	385696
	Invalid	0
	Total	385696
Population Size		386866.047
Stage 1	Strata	42

Units	84
Sampling Design Degrees of Freedom	42

Pseudo R Squares

Cox and Snell	.003
Nagelkerke	.047
McFadden	.046

Dependent Variable: mdetv (reference category = 0)

Model: (Intercept), reved4cat, revmar3cat, revracecat, pyr, sexm, intwage

Tests of Model Effects

Source	df1	df2	Wald F	Sig.
(Corrected Model)	11.000	32.000	53.633	<.001
(Intercept)	1.000	42.000	1493.842	<.001
reved4cat	3.000	40.000	1.864	.151
revmar3cat	2.000	41.000	34.351	<.001
revracecat	3.000	40.000	11.963	<.001
pyr	1.000	42.000	250.133	<.001
sexm	1.000	42.000	51.010	<.001
intwage	1.000	42.000	567.546	<.001

Dependent Variable: mdetv (reference category = 0)

Model: (Intercept), reved4cat, revmar3cat, revracecat, pyr, sexm, intwage

Parameter Estimates

mdetv	Parameter	B	Std. Error	95% Confidence Interval Lower	95% Confidence Interval Upper	Hypothesis Test t	Hypothesis Test df	Hypothesis Test Sig.
1	(Intercept)	-3.436	.162	-3.762	-3.109	-21.209	42.000	<.001
	[reved4cat=1.00]	-.019	.063	-.147	.108	-.307	42.000	.760
	[reved4cat=2.00]	.093	.057	-.023	.209	1.618	42.000	.113
	[reved4cat=3.00]	-.020	.066	-.154	.113	-.305	42.000	.762
	[reved4cat=4.00]	.000[a]	.	.	.	.	.	.
	[revmar3cat=1.00]	-.035	.088	-.213	.142	-.402	42.000	.690
	[revmar3cat=2.00]	.494	.061	.371	.617	8.101	42.000	<.001
	[revmar3cat=3.00]	.000[a]	.	.	.	.	.	.
	[revracecat=1.00]	.074	.118	-.165	.313	.626	42.000	.535
	[revracecat=2.00]	-.457	.150	-.759	-.154	-3.049	42.000	.004
	[revracecat=3.00]	-.248	.135	-.520	.024	-1.843	42.000	.072
	[revracecat=4.00]	.000[a]	.	.	.	.	.	.
	pyr	.033	.002	.029	.037	15.816	42.000	<.001
	sexm	-.445	.062	-.571	-.319	-7.142	42.000	<.001
	intwage	-.058	.002	-.063	-.053	-23.823	42.000	<.001

Parameter Estimates

mdetv	Parameter	Exp(B)	95% Confidence Interval for Exp(B) Lower	95% Confidence Interval for Exp(B) Upper
1	(Intercept)	.032	.023	.045
	[reved4cat=1.00]	.981	.863	1.114
	[reved4cat=2.00]	1.097	.977	1.232
	[reved4cat=3.00]	.980	.858	1.120
	[reved4cat=4.00]	1.000	.	.
	[revmar3cat=1.00]	.965	.808	1.153
	[revmar3cat=2.00]	1.639	1.449	1.854
	[revmar3cat=3.00]	1.000	.	.
	[revracecat=1.00]	1.077	.848	1.367
	[revracecat=2.00]	.633	.468	.857
	[revracecat=3.00]	.780	.594	1.024
	[revracecat=4.00]	1.000	.	.
	pyr	1.033	1.029	1.038
	sexm	.641	.565	.727
	intwage	.943	.939	.948

Dependent Variable: mdetv (reference category = 0)

Model: (Intercept), reved4cat, revmar3cat, revracecat, pyr, sexm, intwage

a. Set to zero because this parameter is redundant.

```
* Table 10.6, Discrete Time Logistic with CLOGLOG link, note that signs differ but coefficients match the Stata
output, see documentation for details
* Repeat model but run with cloglog link, note that Odds Ratios are not provided with the Cloglog link, could be
calculated as the exponent of parameter.
CSORDINAL mdetv (descending) BY reved4cat revmar3cat revracecat WITH sexm pyr intwage
 /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\\ncsr_p1wt.csaplan'
 /LINK FUNCTION=CLOGLOG
 /MODEL reved4cat revmar3cat revracecat sexm pyr intwage
 /STATISTICS PARAMETER SE CINTERVAL TTEST
 /TEST TYPE=F PADJUST=LSD
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] METHOD=NEWTON CHKSEP=20 CILEVEL=95
 /PRINT SUMMARY CLASSTABLE VARIABLEINFO SAMPLEINFO.
```

Complex Samples: Ordinal Regression

Notes

Output Created		27-FEB-2025 10:42:44
Comments		
Input	Active Dataset	DataSet1
	Filter	pyr <= ageonsetmde (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	385696
	Plan File	P:\ASDA3\data sets for analysis examples and stata r code/ncsr_p1wt.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values among the strata, cluster, subpopulation and factor variables are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.

Syntax		CSORDINAL mdetv (descending) BY reved4cat revmar3cat revracecat WITH sexm pyr intwage /PLAN file='P:\ASDA3\data sets for analysis examples and stata r code\\ncsr_p1wt.csaplan' /LINK FUNCTION=CLOGLOG /MODEL reved4cat revmar3cat revracecat sexm pyr intwage /STATISTICS PARAMETER SE CINTERVAL TTEST /TEST TYPE=F PADJUST=LSD /MISSING CLASSMISSING=EXCLUDE /CRITERIA MXITER=100 MXSTEP=5 PCONVERGE=[1E-006 RELATIVE] LCONVERGE=[0] METHOD=NEWTON CHKSEP=20 CILEVEL=95 /PRINT SUMMARY CLASSTABLE VARIABLEINFO SAMPLEINFO.
Resources	Processor Time	00:00:05.52
	Elapsed Time	00:00:05.14

Sample Design Information

		N
Unweighted Cases	Valid	385696
	Invalid	0
	Total	385696
Population Size		386866.047
Stage 1	Strata	42
	Units	84
Sampling Design Degrees of Freedom		42

Categorical Variable Information

	Weighted Count	Weighted Percent

mdetv[a]	1	1779.464	0.5%
	0	385086.583	99.5%
reved4cat	1.00	92415.979	23.9%
	2.00	97874.347	25.3%
	3.00	126116.110	32.6%
	4.00	70459.611	18.2%
revmar3cat	1.00	57924.423	15.0%
	2.00	98110.391	25.4%
	3.00	230831.233	59.7%
revracecat	1.00	291968.896	75.5%
	2.00	42856.612	11.1%
	3.00	36695.864	9.5%
	4.00	15344.675	4.0%
Population Size		386866.047	100.0%

a. Dependent variable values are sorted in descending order.

Covariate Information

	Mean
Male 1=Yes 0=No	.48
pyr	25.68
intwage	51.95

Pseudo R Squares

Cox and Snell	.003
Nagelkerke	.047
McFadden	.046

Dependent Variable: mdetv

(Descending)

Model: (Threshold), reved4cat, revmar3cat, revracecat, sexm, pyr, intwage

Link function: Complementary log-log

Tests of Model Effects

Source	df1	df2	Wald F	Sig.
reved4cat	3.000	40.000	1.850	.154
revmar3cat	2.000	41.000	34.428	<.001
revracecat	3.000	40.000	11.939	<.001
sexm	1.000	42.000	50.968	<.001
pyr	1.000	42.000	250.294	<.001
intwage	1.000	42.000	568.002	<.001

Dependent Variable: mdetv (Descending)

Model: (Threshold), reved4cat, revmar3cat, revracecat, sexm, pyr, intwage

Link function: Complementary log-log

Parameter Estimates

				95% Confidence Interval		Hypothesis Test		
Parameter		B	Std. Error	Lower	Upper	t	df	Sig.
Threshold	[mdetv=1]	-3.444	.161	-3.770	-3.119	-21.344	42.000	<.001
Regression	[reved4cat=1.00]	.019	.063	-.108	.147	.304	42.000	.762
	[reved4cat=2.00]	-.092	.057	-.208	.023	-1.614	42.000	.114
	[reved4cat=3.00]	.020	.066	-.113	.153	.300	42.000	.766
	[reved4cat=4.00]	.000[a]	.	.	.	.	.	.
	[revmar3cat=1.00]	.035	.088	-.141	.212	.405	42.000	.687
	[revmar3cat=2.00]	-.493	.061	-.615	-.370	-8.107	42.000	<.001
	[revmar3cat=3.00]	.000[a]	.	.	.	.	.	.
	[revracecat=1.00]	-.074	.118	-.312	.164	-.626	42.000	.535
	[revracecat=2.00]	.455	.149	.153	.757	3.045	42.000	.004
	[revracecat=3.00]	.247	.134	-.024	.519	1.841	42.000	.073
	[revracecat=4.00]	.000[a]	.	.	.	.	.	.
	sexm	.443	.062	.318	.569	7.139	42.000	<.001
	pyr	-.033	.002	-.037	-.029	-15.821	42.000	<.001
	intwage	.058	.002	.053	.063	23.833	42.000	<.001

Dependent Variable: mdetv (Descending)

Model: (Threshold), reved4cat, revmar3cat, revracecat, sexm, pyr, intwage

Link function: Complementary log-log

a. Set to zero because this parameter is redundant.

Classification

Observed	Predicted 0	Predicted 1	Percent Correct
0	385086.583	.000	100.0%
1	1779.464	.000	0.0%
Overall Percent	100.0%	0.0%	99.5%

Dependent Variable: mdetv (Descending)

Model: (Threshold), reved4cat, revmar3cat, revracecat, sexm, pyr, intwage

Link function: Complementary log-log

```
* Export Output.
OUTPUT EXPORT
  /CONTENTS  EXPORT=ALL  LAYERS=PRINTSETTING  MODELVIEWS=PRINTSETTING
  /DOC  DOCUMENTFILE='P:\ASDA3\Replication SPSS 29\Chapter 10\Analysis Example Replication '+
    'ASDA3 SPSS C10 Code and Results.doc'
     NOTESCAPTIONS=YES  WIDETABLES=WRAP PAGEBREAKS=YES
     PAGESIZE=INCHES(8.5, 11.0)  TOPMARGIN=INCHES(1.0)  BOTTOMMARGIN=INCHES(1.0)
```