```
173  0  OUTPUT ACTIVATE HazardRatioOutput.
173  0 M>  OUTPUT ACTIVATE HazardRatioOutput.
174  0  TITLE 'Hazard Ratio'.
174  0 M>  TITLE 'Hazard Ratio'.
```

```
 175  0  GET DATA /TYPE=TXT /FILE='D:\DATA ANALYSIS\O Survival Analysis\Hazard
 Ratio\dataset.csv' /ENCODING='UTF8' /DELCASE=LINE /DE
            LIMITERS=',' /QUALIFIER='"' /ARRANGEMENT=DELIMITED /FIRSTCASE=2
 175  0 M>  GET DATA /TYPE=TXT /FILE='D:\DATA ANALYSIS\O Survival Analysis\Haz
ard Ratio\dataset.csv' /ENCODING='UTF8' /DELCASE=LINE
               /DELIMITERS=',' /QUALIFIER='"' /ARRANGEMENT=DELIMITED /FIRSTCAS
E=2
 176  0   /VARIABLES=school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A
8 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 gua
            rdian A16 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A
8 famsup A8 paid A8 activities A8 nursery A8 higher A8
             internet A8 romantic A8 famrel F8.0 freetime F8.0 goout F8.0 Dalc
 F8.0 Walc F8.0 health F8.0 absences F8.0 G1 F8.0 G2 F
            8.0 G3 F8.0.
 176  0 M>   /VARIABLES=school A8 sex A8 age F8.0 address A8 famsize A8 Pstatu
s A8 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16
               guardian A16 traveltime F8.0 studytime F8.0 failures F8.0 schoo
lsup A8 famsup A8 paid A8 activities A8 nursery A8 hig
               her A8 internet A8 romantic A8 famrel F8.0 freetime F8.0 goout
F8.0 Dalc F8.0 Walc F8.0 health F8.0 absences F8.0 G1
               F8.0 G2 F8.0 G3 F8.0.
 177  0  DATASET NAME HazardRatioData.
 177  0 M>  DATASET NAME HazardRatioData.
 178  0  COMPUTE duration=absences+1.
 178  0 M>  COMPUTE duration=absences+1.
 179  0  COMPUTE event=(G3<10).
 179  0 M>  COMPUTE event=(G3<10).
 180  0  COMPUTE cause=0.
 180  0 M>  COMPUTE cause=0.
 181  0  IF(G3>0 AND G3<10) cause=1.
 181  0 M>  IF(G3>0 AND G3<10) cause=1.
 182  0  IF(G3=0) cause=2.
 182  0 M>  IF(G3=0) cause=2.
 183  0  COMPUTE competing_event=(cause>0).
 183  0 M>  COMPUTE competing_event=(cause>0).
 184  0  COMPUTE sex_male=(sex='M').
 184  0 M>  COMPUTE sex_male=(sex='M').
 185  0  VARIABLE LABELS duration 'Demonstration duration: absences plus one'
event 'Academic failure event: G3 below ten' cause '0
```

```
            censored, 1 nonzero failure, 2 zero-grade competing event'.
 185  0 M>  VARIABLE LABELS duration 'Demonstration duration: absences plus on
e' event 'Academic failure event: G3 below ten' cause
              '0 censored, 1 nonzero failure, 2 zero-grade competing event'.
 186  0  VALUE LABELS event 0 'Censored' 1 'Failure' /cause 0 'Censored' 1 'No
nzero failure' 2 'Zero grade'.
 186  0 M>  VALUE LABELS event 0 'Censored' 1 'Failure' /cause 0 'Censored' 1
'Nonzero failure' 2 'Zero grade'.
 187  0  EXECUTE.
 187  0 M>  EXECUTE.
 188  0  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
 188  0 M>  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
 189  0  COXREG VARIABLES=duration WITH sex_male /STATUS=event(1) /METHOD=ENTE
R /PRINT ALL.
 189  0 M>  COXREG VARIABLES=duration WITH sex_male /STATUS=event(1) /METHOD=E
NTER /PRINT ALL.
```

Cox Regression

Notes

Output Created		18-JUL-2026 17:27:15
Comments		
Input	Data	D:\DATA ANALYSIS\O Survival Analysis\Hazard Ratio\dataset.csv
	Active Dataset	HazardRatioData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
Syntax		COXREG VARIABLES=duration WITH sex_male /STATUS=event(1) /METHOD=ENTER /PRINT ALL.

Notes

Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.14

[HazardRatioData]

Case Processing Summary

		N	Percent
Cases available in analysis	Event[a]	100	15.4%
	Censored	549	84.6%
	Total	649	100.0%
Cases dropped	Cases with missing values	0	0.0%
	Cases with negative time	0	0.0%
	Censored cases before the earliest event in a stratum	0	0.0%
	Total	0	0.0%
Total		649	100.0%

a. Dependent Variable: Demonstration duration: absences plus one

Block 0: Beginning Block

Omnibus Tests of Model Coefficients

-2 Log Likelihood
1090.346

Block 1: Method = Enter

Hazard Ratio

Omnibus Tests of Model Coefficients[a]

-2 Log Likelihood	Overall (score)			Change From Previous Step			Change ...
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square
1087.571	2.813	1	.093	2.775	1	.096	2.775

Omnibus Tests of Model Coefficients[a]

Change From Previous ..	
df	Sig.
1	.096

a. Beginning Block Number 1. Method = Enter

Variables in the Equation

	B	SE	Wald	df	Sig.	Exp(B)	95.0% CI for Exp(B)	
							Lower	Upper
sex_male	.334	.200	2.787	1	.095	1.397	.943	2.069

Survival Table

Time	Baseline Cum Hazard	At mean of covariates		
		Survival	SE	Cum Hazard
1.00	.046	.948	.008	.053
3.00	.082	.910	.012	.094
4.00	.091	.901	.013	.104
5.00	.126	.866	.016	.144
6.00	.135	.856	.018	.155
7.00	.165	.827	.021	.190
8.00	.172	.821	.021	.198
9.00	.240	.760	.027	.275
10.00	.274	.730	.031	.314
11.00	.312	.699	.034	.357
13.00	.395	.636	.043	.453
15.00	.482	.575	.050	.553
17.00	.569	.521	.057	.652
23.00	.723	.436	.085	.830

Survival Table

Time	Baseline Cum Hazard	At mean of covariates		
		Survival	SE	Cum Hazard
25.00	.981	.324	.105	1.126
27.00	1.361	.210	.098	1.560

Covariate Means

	Mean
sex_male	.410

```
 190  0  ECHO 'Declared tie reference: BRESLOW'.
 190  0 M>  ECHO 'Declared tie reference: BRESLOW'.
Declared tie reference: BRESLOW
 191  0  ECHO 'Exponentiated sex_male coefficient is the unadjusted male-versu
s-female hazard ratio'.
 191  0 M>  ECHO 'Exponentiated sex_male coefficient is the unadjusted male-ve
rsus-female hazard ratio'.
Exponentiated sex_male coefficient is the unadjusted male-versus-female hazard
 ratio
 192  0  * END METHOD-SPECIFIC SPSS WORKFLOW.
 192  0 M>  * END METHOD-SPECIFIC SPSS WORKFLOW.
 193  0  SAVE OUTFILE='D:\DATA ANALYSIS\O Survival Analysis\Hazard Ratio\SPSS_
Output\sav\hazard-ratio_spss_ready_data.sav' /COMPRESS
            ED.
 193  0 M>  SAVE OUTFILE='D:\DATA ANALYSIS\O Survival Analysis\Hazard Ratio\SP
SS_Output\sav\hazard-ratio_spss_ready_data.sav' /COMPR
               ESSED.
 194  0  ECHO 'Hazard Ratio'.
 194  0 M>  ECHO 'Hazard Ratio'.
Hazard Ratio
 195  0  ECHO 'Method type: effect_estimation'.
 195  0 M>  ECHO 'Method type: effect_estimation'.
Method type: effect_estimation
 196  0  ECHO 'Design: Unadjusted Cox hazard ratio comparing male with female
students for the academic-failure event.'.
 196  0 M>  ECHO 'Design: Unadjusted Cox hazard ratio comparing male with fema
le students for the academic-failure event.'.
```

```
Design: Unadjusted Cox hazard ratio comparing male with female students for th
e academic-failure event.
 197  0  ECHO 'Formula: HR=exp(beta_sex); CI=exp(beta+-1.96*SE)'.
 197  0 M>  ECHO 'Formula: HR=exp(beta_sex); CI=exp(beta+-1.96*SE)'.
Formula: HR=exp(beta_sex); CI=exp(beta+-1.96*SE)
 198  0  ECHO 'Duration encoding: absences plus one'.
 198  0 M>  ECHO 'Duration encoding: absences plus one'.
Duration encoding: absences plus one
 199  0  ECHO 'Event encoding: G3 below ten'.
 199  0 M>  ECHO 'Event encoding: G3 below ten'.
Event encoding: G3 below ten
 200  0  ECHO 'Competing event: G3 equals zero where applicable'.
 200  0 M>  ECHO 'Competing event: G3 equals zero where applicable'.
Competing event: G3 equals zero where applicable
 201  0  ECHO 'events = 100'.
 201  0 M>  ECHO 'events = 100'.
events = 100
 202  0  ECHO 'log_hazard_ratio = 0.3344250902257603'.
 202  0 M>  ECHO 'log_hazard_ratio = 0.3344250902257603'.
log_hazard_ratio = 0.3344250902257603
 203  0  ECHO 'hazard_ratio_male_vs_female = 1.3971369266114326'.
 203  0 M>  ECHO 'hazard_ratio_male_vs_female = 1.3971369266114326'.
hazard_ratio_male_vs_female = 1.3971369266114326
 204  0  ECHO 'ci_95_lower = 0.9434841116765427'.
 204  0 M>  ECHO 'ci_95_lower = 0.9434841116765427'.
ci_95_lower = 0.9434841116765427
 205  0  ECHO 'ci_95_upper = 2.0689183501273907'.
 205  0 M>  ECHO 'ci_95_upper = 2.0689183501273907'.
ci_95_upper = 2.0689183501273907
 206  0  ECHO 'wald_z = 1.6695663963531835'.
 206  0 M>  ECHO 'wald_z = 1.6695663963531835'.
wald_z = 1.6695663963531835
 207  0  ECHO 'p_value = 0.09500518356109564'.
 207  0 M>  ECHO 'p_value = 0.09500518356109564'.
p_value = 0.09500518356109564
 208  0  ECHO 'Cross-check status: pass'.
 208  0 M>  ECHO 'Cross-check status: pass'.
Cross-check status: pass
```

```
 209  0  OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\O Survival Analysis\Hazard Rati
o\SPSS_Output\spv\hazard-ratio_spss_output.spv'.
 209  0 M>  OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\O Survival Analysis\Hazard R
atio\SPSS_Output\spv\hazard-ratio_spss_output.spv'.
 210  0  OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRI
NTSETTING /PDF DOCUMENTFILE='D:\DATA ANALYSIS\O Surviv
            al Analysis\Hazard Ratio\SPSS_Output\pdf\hazard-ratio_spss_output.
pdf'.
 210  0 M>  OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=
PRINTSETTING /PDF DOCUMENTFILE='D:\DATA ANALYSIS\O Sur
               vival Analysis\Hazard Ratio\SPSS_Output\pdf\hazard-ratio_spss_o
utput.pdf'.
```