Survival Analysis of Probation Supervision: a closer look at the role of technical violations

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THE PROBLEM

- In 2001, there were 71, 774 offenders under the control of the Virginia Department of Corrections
  - 57% (41,062) of those offenders were under community supervision
- In 1991, it was estimated that 10% of the offenders returned to prison were returned due to technical violations (Probation and Parole Violators in State Prison, 1991)

The study population

- Composed of all offenders placed on probation, parole or post release supervision between January 1, 1997 through December 31, 1998 by VADOC
  - Twenty four month period

The Sample

- Districts involved in the study
  - Roanoke-125 cases
  - Wytheville-125 cases
  - Richmond-200 cases
  - Culpeper-50 cases
  - Norfolk-200 cases
  - Williamsburg-50 cases
- Total N=750; mix of rural & urban districts

TECHNICAL VIOLATIONS

- 44% (n=326) offenders did not commit any technical violations
- Of the 423 offenders that committed technical violations, there were a total of 990 different violations
- Most frequently committed technical violations:
  - 84% - testing positive for alcohol and/or drugs (n=353)
  - 47% - missing appointments with their probation officer (n=98), and…
  - 27% - failure to comply with substance abuse treatment requirements (n=115)

Other Technical Violations

- Second most frequently committed violations: failing to show for urine screens (23%) and absconding from supervision (18%).
- When violations were rated for severity, using ratings of minor, moderate and major: 198 were minor in nature, 567 were considered to be moderate in consequence and 75 were considered to be major in nature.

Severity of Technical Violations

Rating of Violation Severity	Rate
Major	9%
Moderate	67.5%
Minor	23.5%
Total	100%

NEW LAW VIOLATIONS

- 20% of the sample (n=150) population committed new law violations
- Another 52 (7%) of those 150 committed subsequent law violations

NEW LAW VIOLATIONS

- 210 new law violations committed:

Offense Type	Percent
Violent Crimes	18%
Property Crimes	26%
Drug Crimes	13%
Other Crimes*	43%

* traffic, failure to appear and other public order offenses

NEW LAW VIOLATIONS

- 85 of the 210 (40%) new crimes were felonies
- Most prevalent new crimes committed: felony drug offenses (23), traffic misdemeanors involving license issues (23)
- Next most prevalent new crimes committed: misdemeanor assault (17), felony larceny offenses (13), Driving While Intoxicated (13), Drunk in Public offenses (12) and felony Fraud offenses (12)

RESPONSE TO NEW LAW VIOLATIONS

- High Severity Response:
  - 77% of new law violations handled by the offender's return to court, to the Parole Board, or offender was placed in fugitive status
- Low Severity Response:
  - 3% of cases handled by brief periods of incarceration or placement into residential treatment
- Low Leniency Response:
  - 4% of cases handled through modification of conditions of probation

RESPONSE TO NEW LAW VIOLATIONS

- High Leniency Response:
  - 21% of cases, new law violations were handled as minor violations or through the use of verbal reprimand or admonishment
- 5% of cases, there was no response by the probation officer

Technical Violations

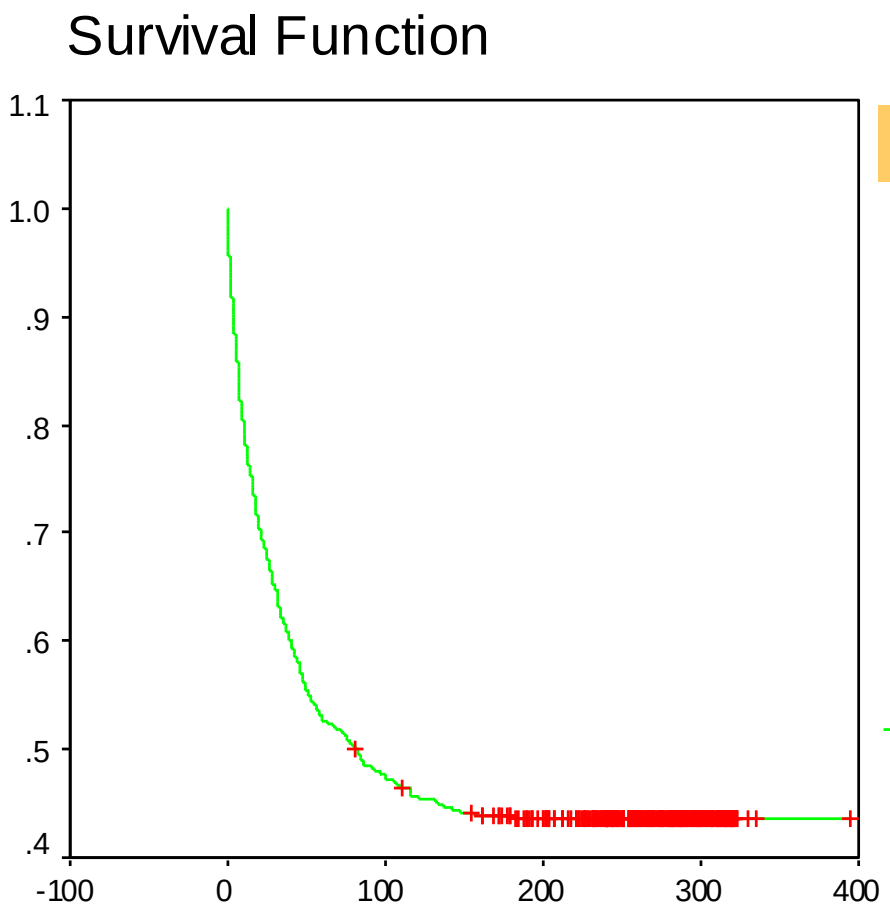
Survival Analysis – First Technical Violation

- 326 cases out of 749 of the sample population were successful or 43.52% of the population (no technical violations).
- Within the first week of supervision, 34 offenders had committed their first technical violation.

Survival Analysis – First Technical Violation

- Within the first 30 days, 80 (11%) offenders had committed their first technical violation
- Within the first 90 days, 169 (23%) offenders had committed their first technical violation
- Average time for offender to commit first technical violation was 20.5 months or 82 weeks
  - By that time period, 376 offenders or 50% of the offender sample population had committed their first technical

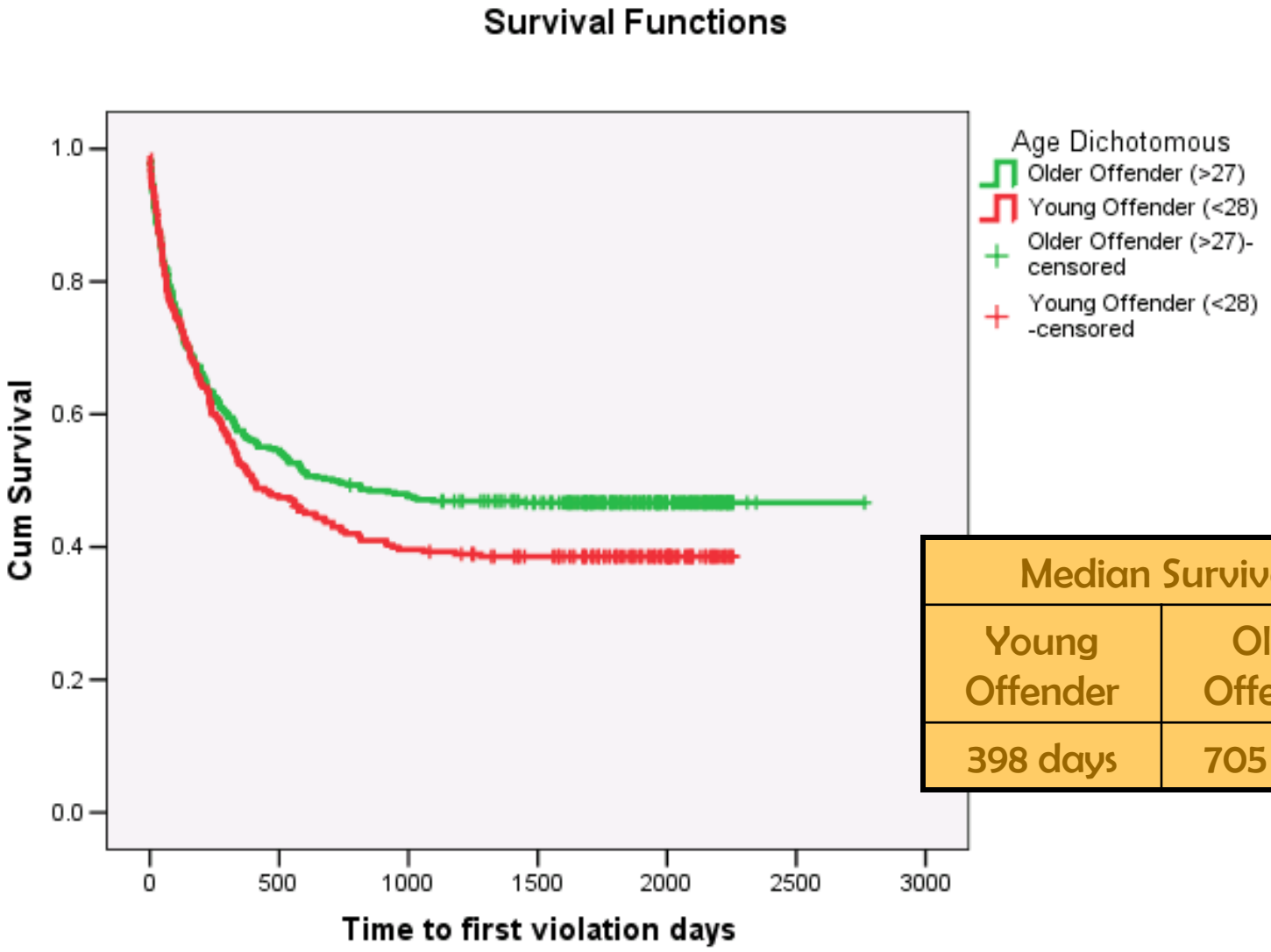
Survival Curve for First Technical Violation



Median Survival is 573 days

*Censoring occurs when a probationers reaches the end of their probation without any violations

Survival by Age

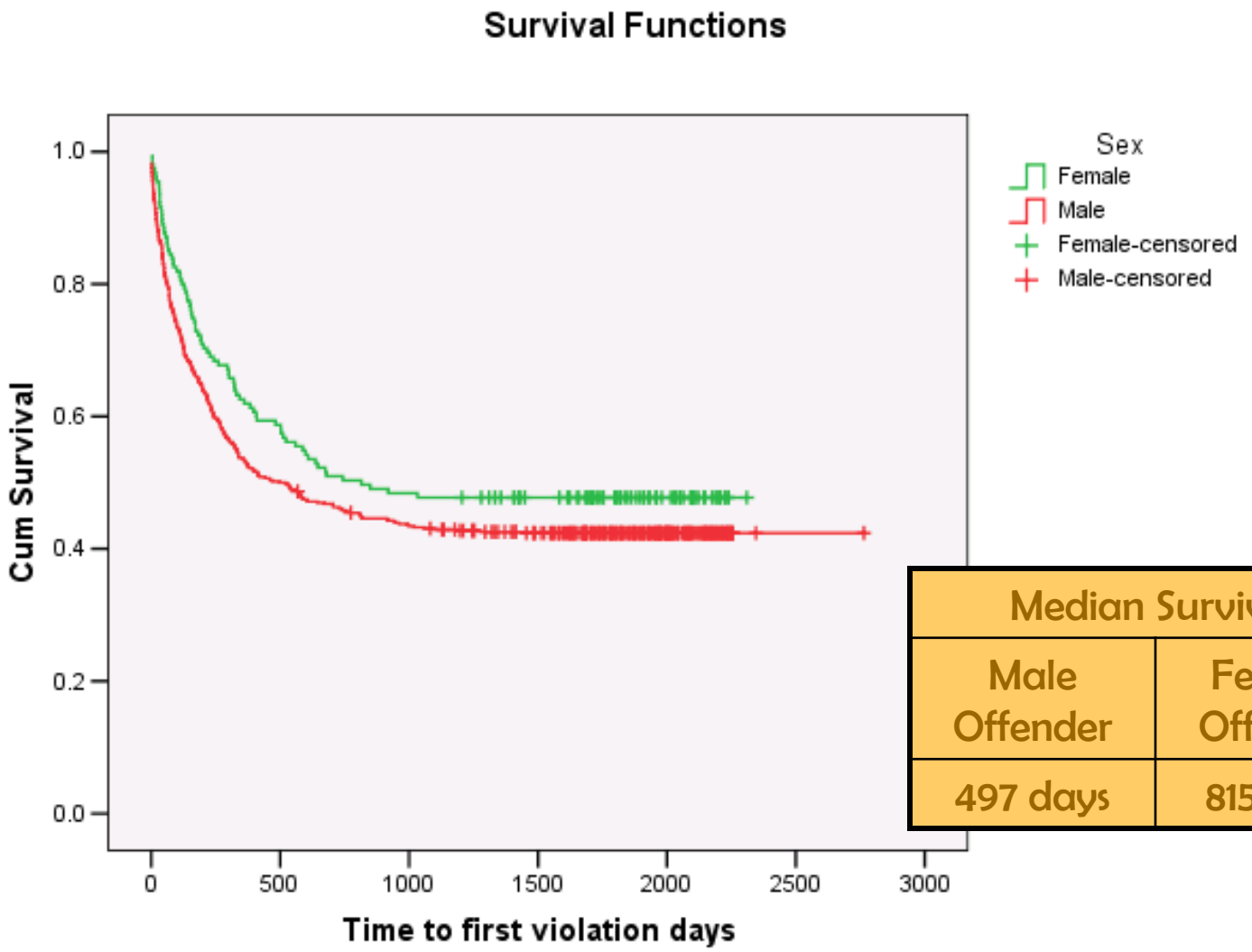


Median Survival	
Young Offender	Older Offender
398 days	705 days

Censor Status by Age

		Censored (Completed Successfully)	
	Total N	N	Percent
Young Offender	295	114	38.6%
Older Offender	454	212	46.7%
Total	749	326	43.5%

Survival by Gender

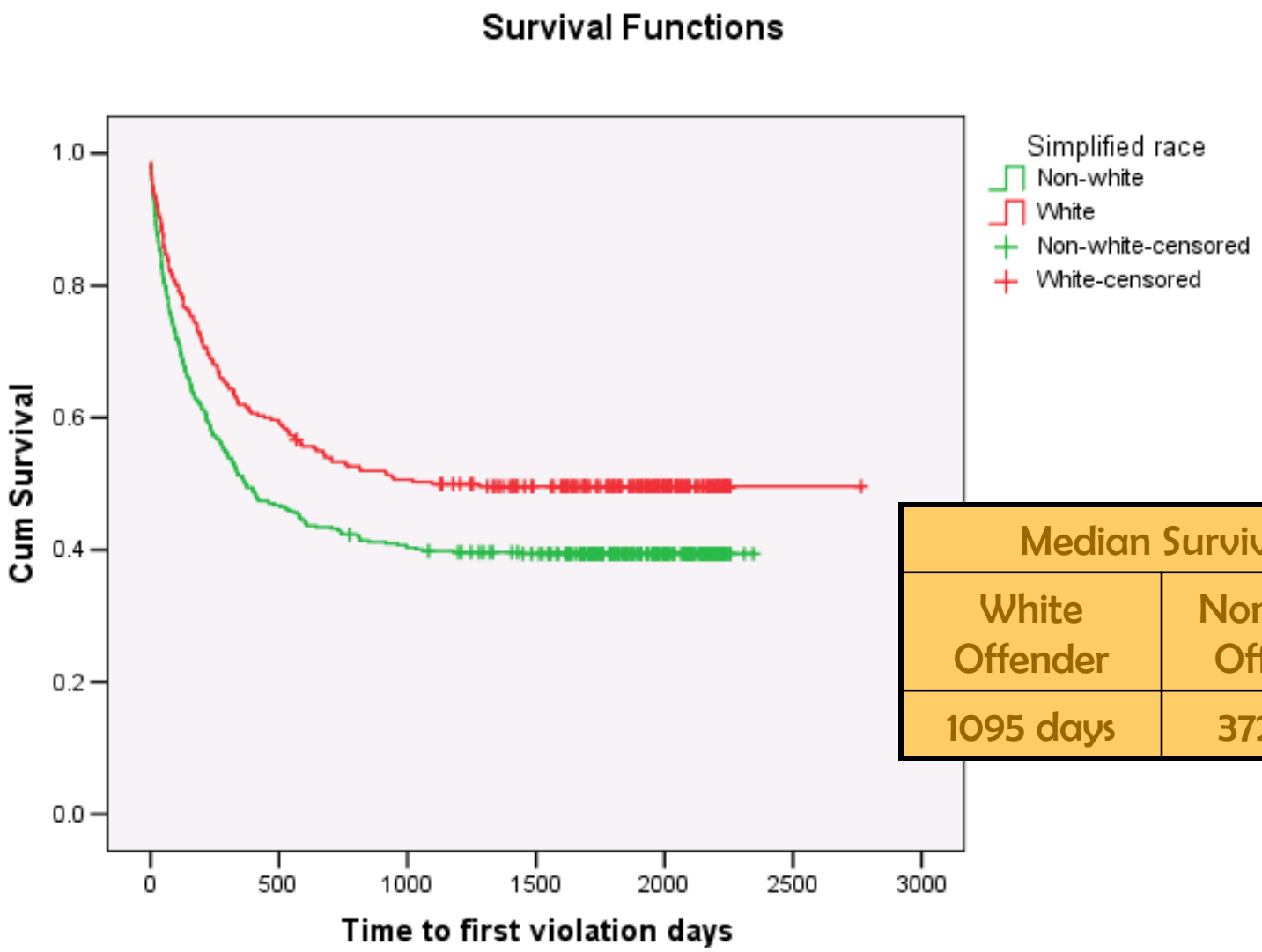


Median Survival	
Male Offender	Female Offender
497 days	815 days

Censor Status by Gender

		Censored (Completed Successfully)	
	Total N	N	Percent
Male Offender	594	252	42.4%
Female Offender	155	74	47.7%
Total	749	326	43.5%

Survival by Race

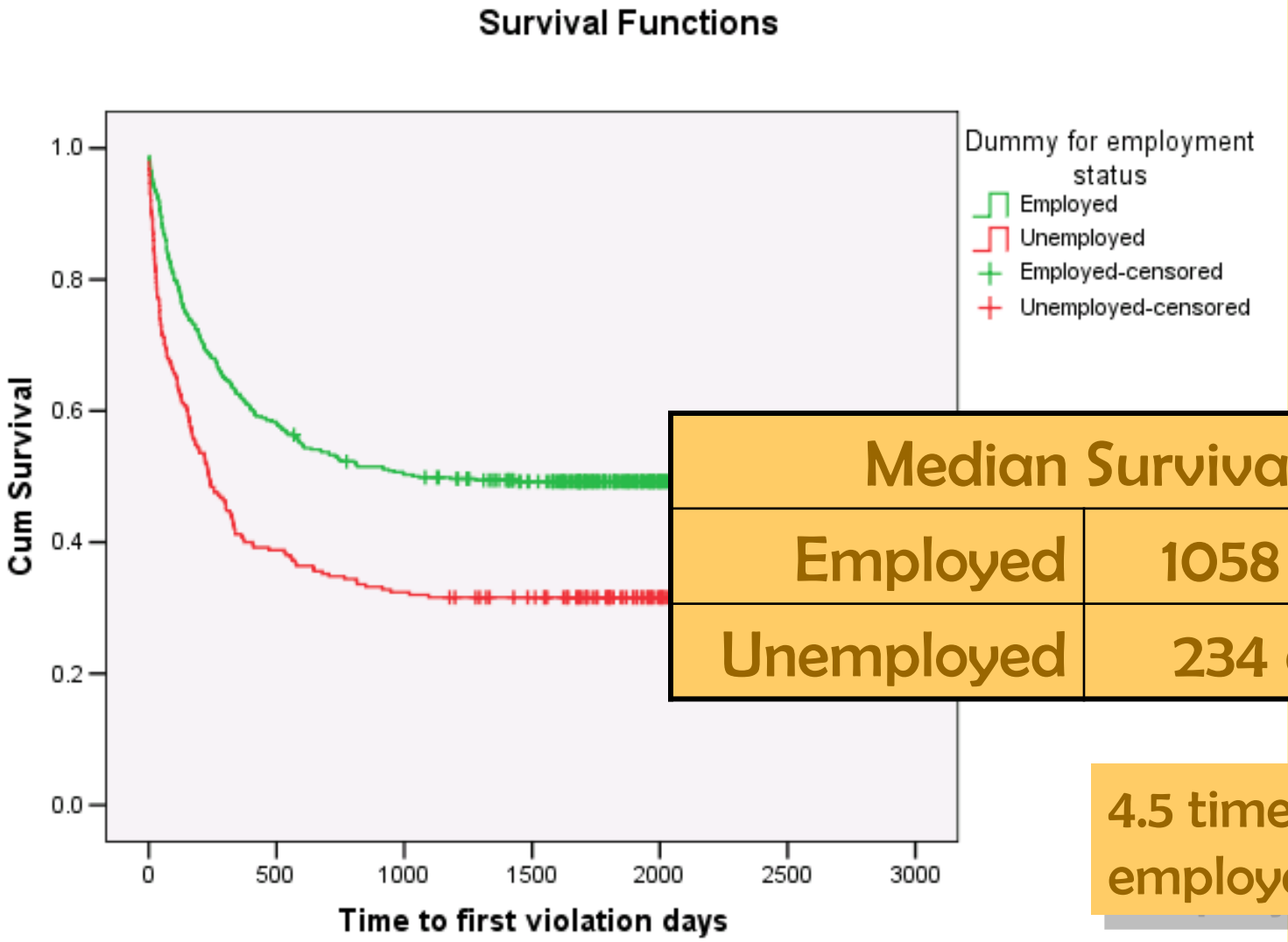


Median Survival	
White Offender	Non-white Offender
1095 days	372 days

Censor Status by Race

	Total N	Censored (Completed Successfully)	
		N	Percent
White Offender	300	149	49.7%
Non-white Offender	449	177	39.4%
Total	749	326	43.5%

Survival by Employment Status



Median Survival	
Employed	1058 days
Unemployed	234 days

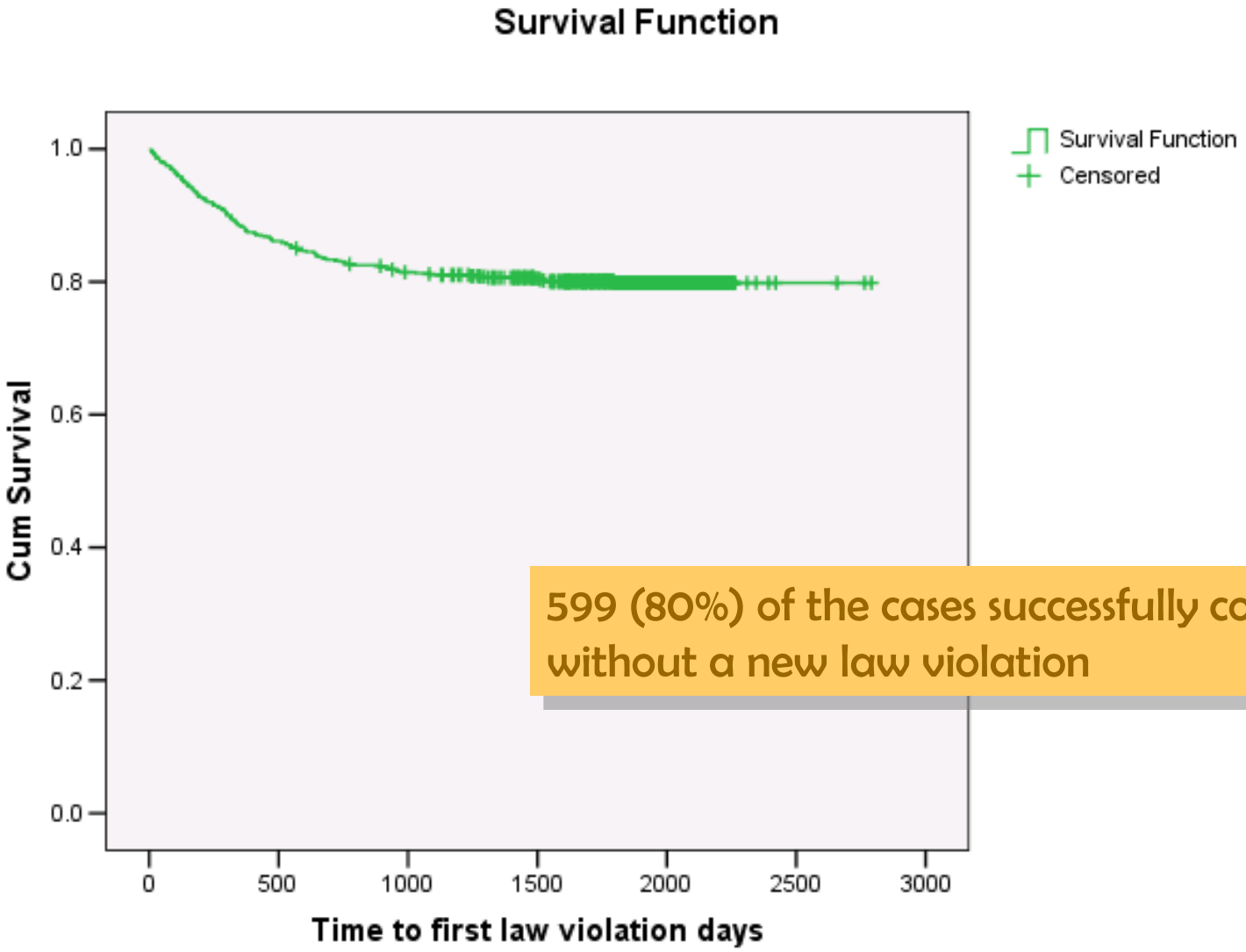
4.5 times for employed!

Censor Status by Employment

	Total N	Censored (Completed Successfully)	
		N	Percent
Employed Offender	497	245	49.3%
Unemployed Offender	250	79	31.6%
Total	747	324	43.4%

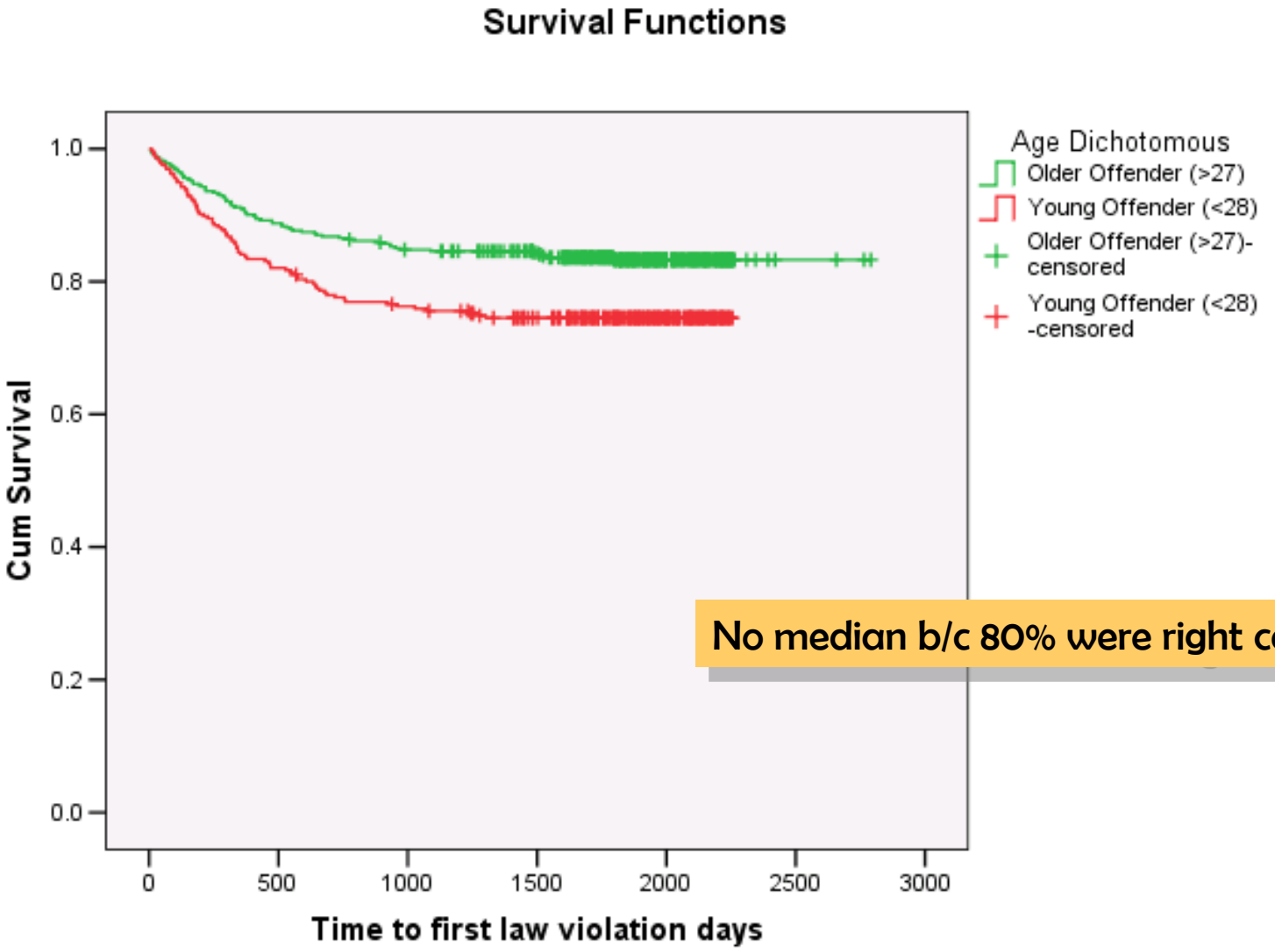
New Law Violations

Survival for New Law Violations



599 (80%) of the cases successfully completed without a new law violation

Survival by Age

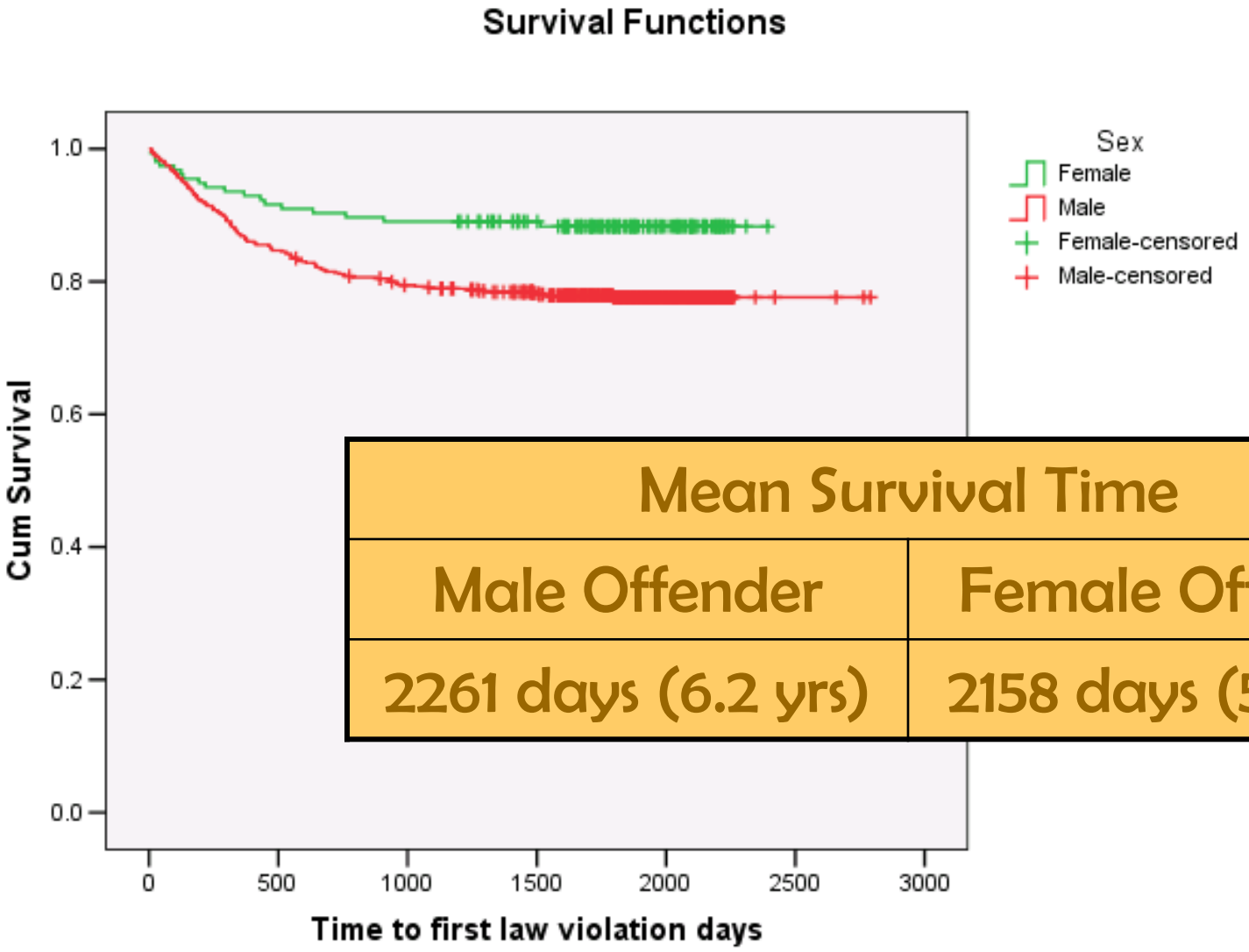


No median b/c 80% were right censored

Censor Status by Age

		Censored (Completed Successfully)	
	Total N	N	Percent
Young Offender	295	220	74.6%
Older Offender	454	379	83.5%
Total	749	599	80%

Survival by Gender

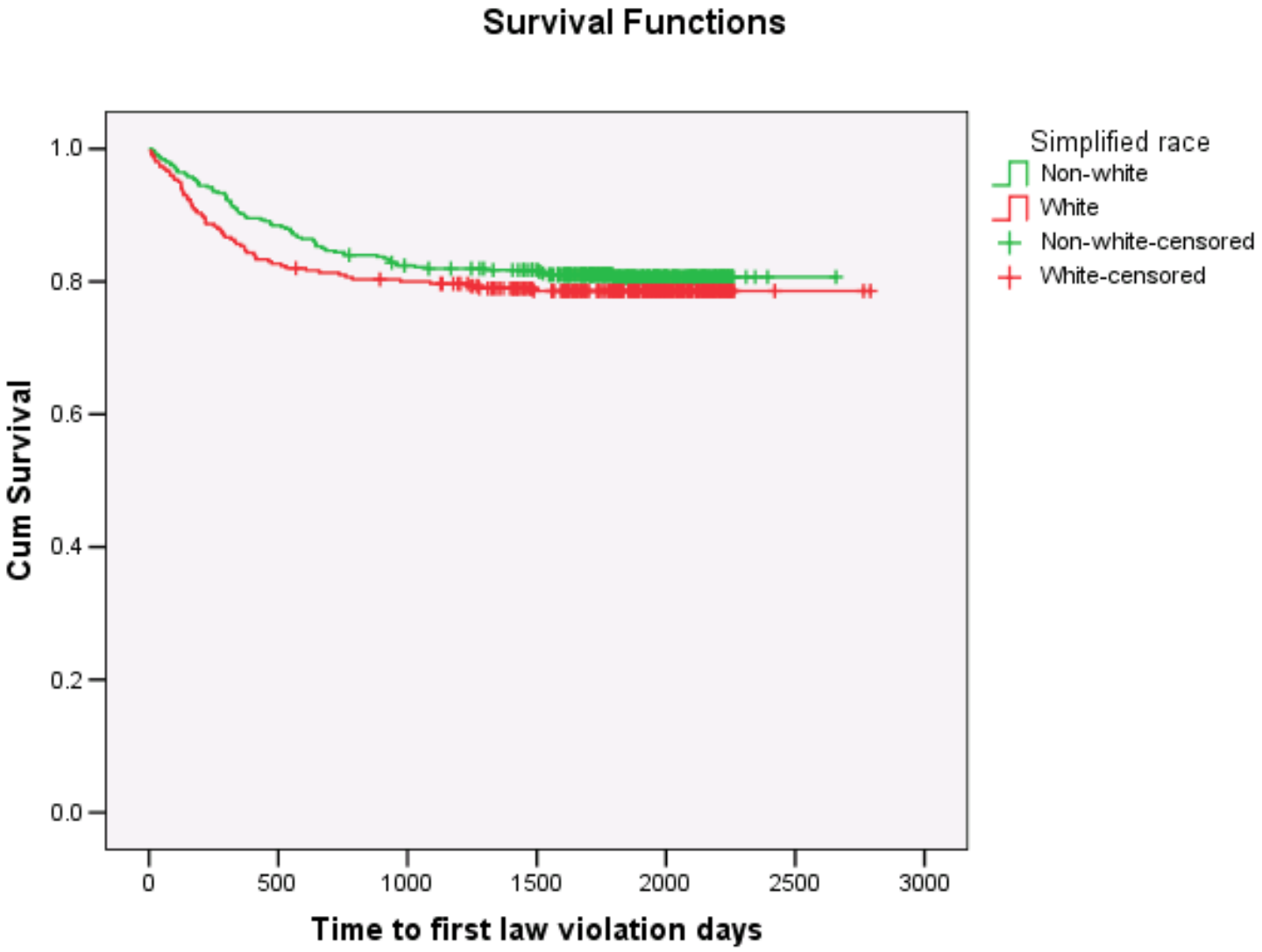


Mean Survival Time	
Male Offender	Female Offender
2261 days (6.2 yrs)	2158 days (5.9 yrs)

Censor Status by Gender

		Censored (Completed Successfully)	
	Total N	N	Percent
Male Offender	594	462	77.8%
Female Offender	155	137	88.4%
Total	749	599	80%

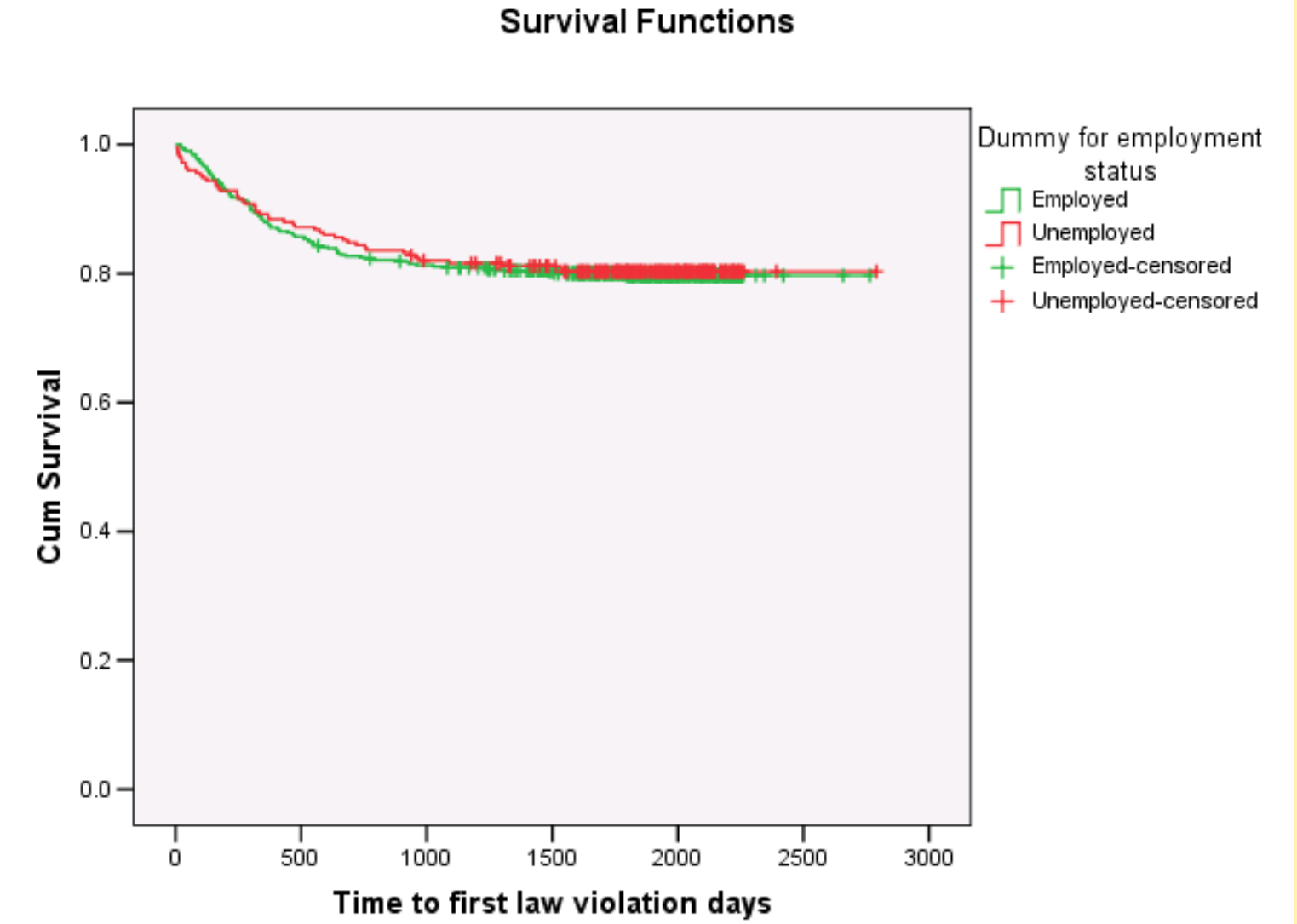
Survival by Race



Censor Status by Race

		Censored (Completed Successfully)	
	Total N	N	Percent
White Offender	300	236	78.7%
Non-white Offender	449	363	80.8%
Total	749	599	80%

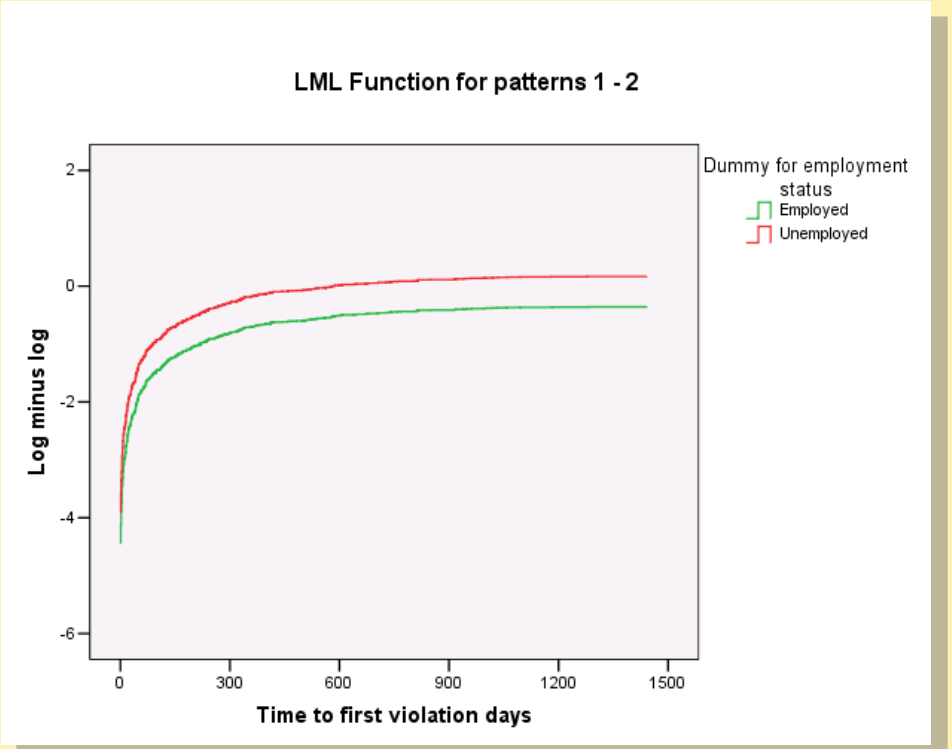
Survival by Employment



Censor Status by Employment

		Censored (Completed Successfully)	
	Total N	N	Percent
Employed Offender	497	397	79.9%
Non-white Offender	250	201	80.4%
Total	747	598	80.1%

Cox Regression for Technical Violations



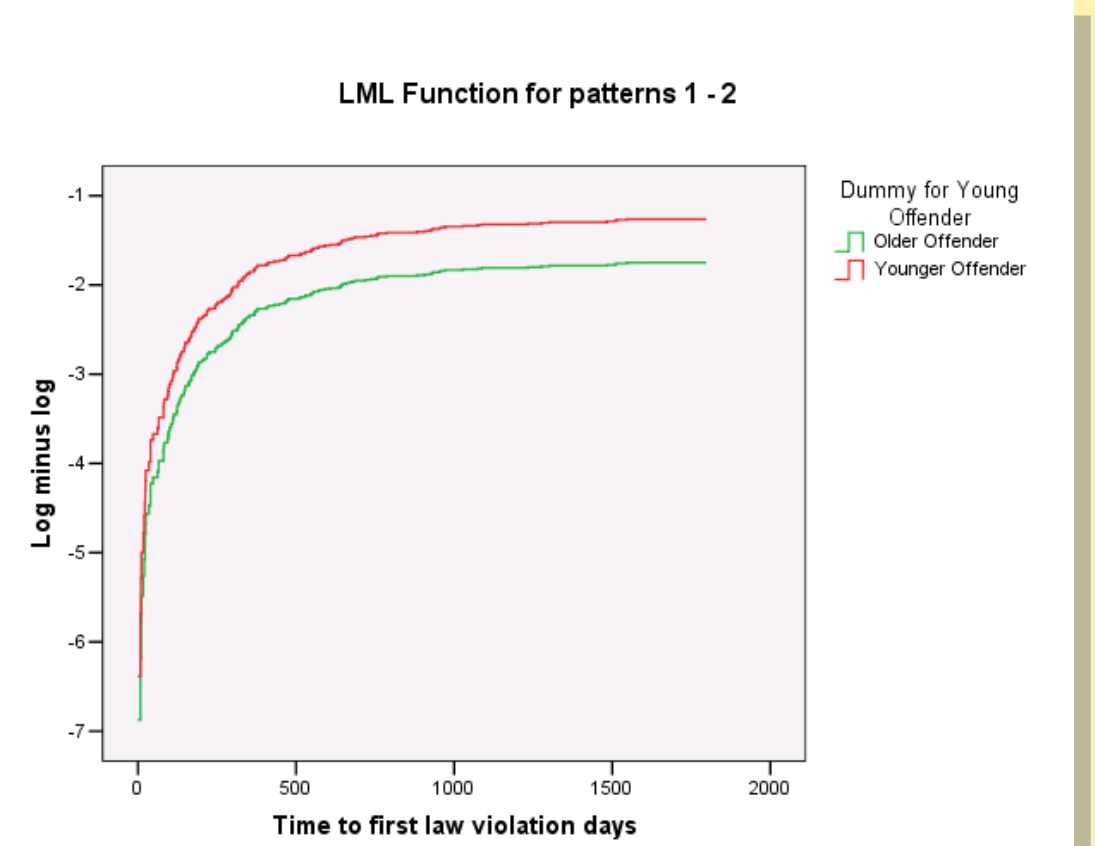
Cox Proportional Hazards Model

Variables in the equation

Variable	B	SE	Wald	df	Sig.	Exp(B)
Sex	-.257	.124	4.282	1	.039	.773
Race	.212	.104	4.170	1	.041	1.236
Employ	-.521	.102	26.328	1	.000	.594
Age	-.126	.099	1.608	1	.205	.882

Overall Chi Square = 42.09, df=4, p>.001

Cox Regression for New Law Violations



Cox Proportional Hazards Model

Variables in the equation

Variable	B	SE	Wald	df	Sig.	Exp(B)
Sex	-.666	.252	6.970	1	.008	.514
Race	-.156	.170	.842	1	.359	856
Employ	-.039	.179	.048	1	.827	.962
Age	-.487	.164	8.778	1	.003	.615

Overall Chi Square = 17.387, df=4, p=.002

Some Conclusions

- A majority of offenders commit at least one technical violation (56%)
- Most offenders do not commit a new law violation (80%)
- Conclusion – assertive supervision works

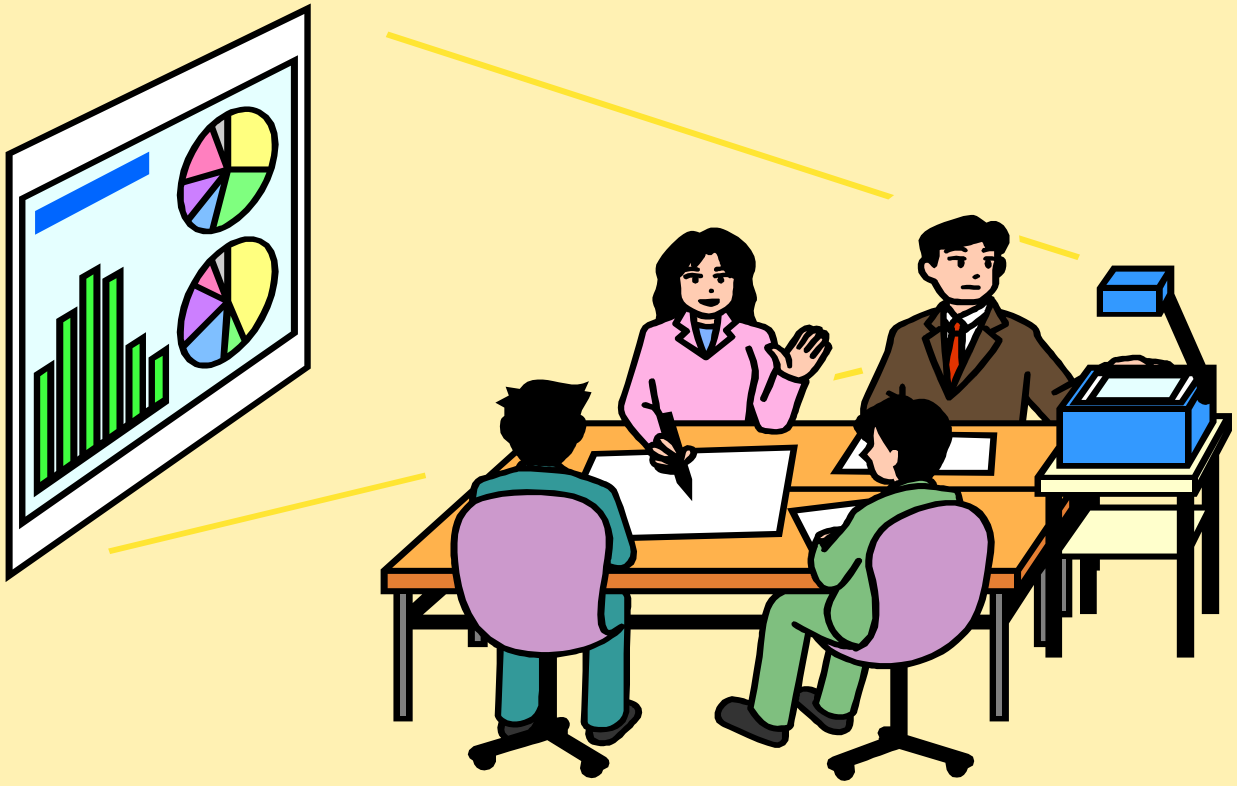
Some Conclusions

- Those who are going to fail to do so relatively quickly
  - 17% commit their first technical in 6 months
  - 12% commit their first new law violation in the first year
- Conclusion – start out tight and tough

Some Conclusions

- For technical violations, employment status is a strong predictor of success or failure, followed by race, and then sex
  - You can't change race and sex but you can adapt supervisions style
- For new law violations, age is probably the most important – increase assertive supervision on the young 'uns

Questions & Discussion



Technicals by Prior Hx

Omnibus Tests of Model Coefficients[a,b]

-2 Log Likelihood	Overall (score)			Change From Previous Step			Change From Previous Block		
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square	df	Sig.
4901.522	27.035	5	.000	22.698	5	.000	22.698	5	.000

a. Beginning Block Number 0, initial Log Likelihood function: -2 Log likelihood: 4924.220

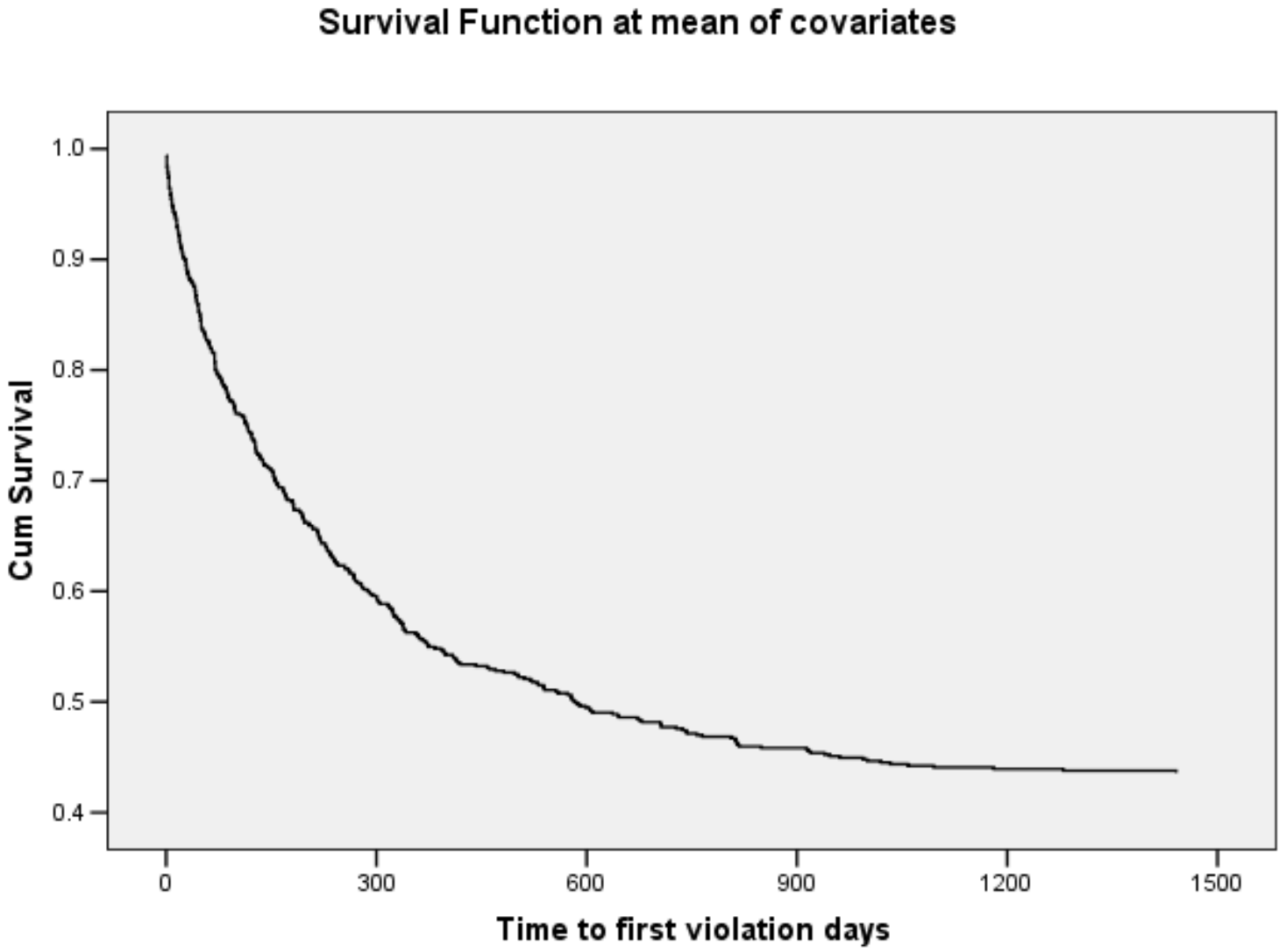
b. Beginning Block Number 1. Method = Enter

(N=705)

Variables in the Equation

	B	SE	Wald	df	Sig.	Exp(B)
numjuvf	.075	.036	4.217	1	.040	1.077
numjuvm	-.002	.027	.004	1	.950	.998
numadf	-.015	.020	.581	1	.446	.985
numadm	.023	.005	19.015	1	.000	1.023
numic	-.001	.038	.001	1	.977	.999

Technicals by Prior Hx



New Law Violations by Priors

Omnibus Tests of Model Coefficients[a,b]

-2 Log Likelihood	Overall (score)			Change From Previous Step			Change From Previous Block		
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square	df	Sig.
1840.169	39.818	5	.000	28.038	5	.000	28.038	5	.000

a. Beginning Block Number 0, initial Log Likelihood function: -2 Log likelihood: 1868.207

b. Beginning Block Number 1. Method = Enter

Variables in the Equation

	B	SE	Wald	df	Sig.	Exp(B)
numjuvf	.067	.034	3.921	1	.048	1.069
numjuvm	.078	.031	6.172	1	.013	1.081
numadf	.039	.025	2.431	1	.119	1.039
numadm	.020	.007	8.050	1	.005	1.021
numic	-.084	.062	1.841	1	.175	.920

(N=705)

New Law Violations by Priors