

APPENDIX A. CLASSICAL STATISTICAL COMPARISONS

summary(model_1, dispersion=1)

Call:

```
glm(formula = TimeBetween ~ as.factor(Year), family = Gamma,  
     data = LW_00)
```

Deviance Residuals:

Min	1Q	Median	3Q	Max
-2.4383	-0.6774	-0.2990	0.4531	1.5846

Coefficients:

	<u>Estimate</u>	<u>Std. Error</u>	<u>z value</u>	<u>Pr(> z)</u>
(Intercept)	0.007576	0.004374	1.732	0.0833 .
as.factor(Year)2001	0.016562	0.010118	1.637	0.1016
as.factor(Year)2002	0.001770	0.006946	0.255	0.7989
as.factor(Year)2003	-0.002576	0.005624	-0.458	0.6470
as.factor(Year)2004	0.006154	0.007110	0.866	0.3867
as.factor(Year)2005	0.022959	0.011648	1.971	0.0487 *
as.factor(Year)2006	0.011614	0.007749	1.499	0.1339
as.factor(Year)2007	0.026907	0.014741	1.825	0.0680 .
as.factor(Year)2008	-0.001453	0.005624	-0.258	0.7961
as.factor(Year)2009	0.002424	0.006643	0.365	0.7152
as.factor(Year)2010	0.012626	0.011007	1.147	0.2513

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for Gamma family taken to be 1)

Null deviance: 59.892 on 54 degrees of freedom
Residual deviance: 41.073 on 44 degrees of freedom
AIC: 577.83

Number of Fisher Scoring iterations: 6

summary(model_2, dispersion=1)

Call:

```
glm(formula = TimeBetween ~ as.factor(Rule), family = Gamma,  
     data = LW_00)
```

Deviance Residuals:

Min	1Q	Median	3Q	Max
-2.5103	-0.9778	-0.2913	0.3310	2.0157

Coefficients:

	<u>Estimate</u>	<u>Std. Error</u>	<u>z value</u>	<u>Pr(> z)</u>
(Intercept)	0.016006	0.002413	6.633	3.28e-11 ***
as.factor(Rule)1	-0.005896	0.003888	-1.516	0.129

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for Gamma family taken to be 1)

Null deviance: 59.892 on 54 degrees of freedom
Residual deviance: 57.864 on 53 degrees of freedom
AIC: 581.3

Number of Fisher Scoring iterations: 6

summary(model_3, dispersion=1)

Call:

glm(formula = TimeBetween ~ 1, family = Gamma, data = LW_00)

Deviance Residuals:

Min	1Q	Median	3Q	Max
-2.5532	-0.9853	-0.3895	0.2659	2.2856

Coefficients:

	<u>Estimate</u>	<u>Std. Error</u>	<u>z value</u>	<u>Pr(> z)</u>	
(Intercept)	0.014334	0.001933	7.416	1.20e-13	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for Gamma family taken to be 1)

Null deviance: 59.892 on 54 degrees of freedom
Residual deviance: 59.892 on 54 degrees of freedom
AIC: 581.51
Number of Fisher Scoring iterations: 6

Confidence set for the best model

Method: raw sum of model probabilities

95% confidence set:

	<u>Model</u>	<u>K</u>	<u>AICc</u>	<u>Delta_AICc</u>	<u>AICcWt</u>
intercept only	3	2	581.74	0.00	0.46
Before and After Rule	2	3	581.77	0.04	0.46
All Years	1	12	585.26	3.52	0.08

Model probabilities sum to 1

Conclusion --- Note that the AICc for intercept only model and 2 rate model are the same even though 1 parameter was added: only one rate is supported