

# APPENDIX 01 - Glossary of symbols used

## Glossary

In this appendix, I will be compiling a list of variable names in three sections:-

Main text  
 FORTRAN 77 (F77) Programs  
 GLIM 3.77 Programs

### Variable names in the main text

Symbol	Variable
$a_j$	Atom
$c_i$	Censor times
$d$	No. of failures (uncensored)
$d_j$	No. of failures at atom $a_j$
$n$	No. of individuals
$r_j$	No. of trials in view at atom $a_j$
$x_i$	Failure times
$t, T$	Time
$t_0$	Time under standard conditions
$t_i$	Remission times
$t_{1q}$	Lower quartile time
$t_m$	Median time
$t_{midqr}$	Mid-quartile range time
$t_{iqr}$	Inter-quartile range time
$t_{uq}$	Upper quartile time
$e$	Error distribution with zero mean
$\mu$	Mean value
$h$	Hazard function
$h_0$	Hazard function under std. conditions
$h_1$	Hazard function under treated conditions
$H$	Integrated hazard
$f$	Probability density function (pdf)
$f_0$	PDF under standard conditions
$f_1$	PDF under treated conditions
$F$	Cumulative density function (cdf)
$\bar{F}$	Survivor function, $1-F$
$F_0$	Survivor function under std. conditions
$F_1$	Survivor function under treated conditions
$b$	$p \times 1$ Parameter vector
$b_0, b_{1 \dots}$	Regression parameters
$b_0(n), b_{1(n) \dots}$	Old values of regression parameters
$b_0(n+1), b_{1(n+1) \dots}$	New values of regression parameters
$z$	Vector of explanatory variables
$z_0, z_{1 \dots}$	Explanatory variables
$p$	Rate parameter for Weibull distribution
$p_0$	Rate parameter under std. conditions
$p_1$	Rate parameter for exp. distribution
$\rho_1$	Variable rate parameter
$k$	Index parameter
$k_n$	Old value of $k$
$k_{n+1}$	New value of $k$
$l_{pp}$	Elements of the information matrix
$l_{kk}$	Elements of the information matrix

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$I_{pk}$	Elements of the information matrix
$l$	Log likelihood
$l_0$	Log likelihood function under $H_0$
$l_1$	Log likelihood function under $H_1$
$\lambda$	Difference between $l_1$ and $l_0$
$U_k$	Score function
$U_p$	Score function
$w_{a1}, w$	Acceleration factor
$w_{ph}$	Proportional hazards factor

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Variable names in FORTRAN 77 (F77) programs

Key :-

- I - Integer
- IA - Integer array
- R - Real
- RA - Real array
- RF - Real function

Variable name	Type	Represents
a	R	Acceleration factor
b0diff	R	Absolute difference between the new and old values of b0
b0new	R	New value of b0
b0old	R	Old value of b0 in the iteration loop
b1diff	R	Absolute difference between the new and old values of b1
b1new	R	New value of b1
b1old	R	Old value of b1
c	RA	Censor times
cdf	RA	CDF of the Weibull distribution
cdfex	RA	CDF of the exponential distribution
sensorstart	R	Initial constant censor time
ciklb95	R	Lower bound of kappa with 95% conf.
cikub95	R	Upper bound of kappa with 95% conf.
ciplb95	R	Lower bound of rho with 95% conf.
cipub95	R	Upper bound of rho with 95% conf.
cl	RA	Recruitment times from a straight line
const	R	Minimum time for censoring to occur
cp	RA	Recruitment times from an exponential distribution
cs	R	As sensorstart
cvalchi5	R	Critical value of chi-sq at 5% level
cvald5	R	Critical value of diff. at the 5% level
d	I/IA	No. of failures (uncensored individuals) or No. of failures in each treatment group
diff	R	Absolute difference between the product limit estimator and survivor function
gptype	R	Random number used to classify the type of group (control, treated) and this info. is stored in the indicator variable z1
hazard	R	Hazard function
i	IA	Indicator variable (1 if censored, 0 otherwise)
ihazard	R	Integrated hazard
ikk, ipk, ipp	R	Elements of the information matrix
iy	I/IA	Seed for the Weibull distribution
iy2	I	Seed for exponential distribution or for group type
kappa	R	Index parameter
kdifff	R	Absolute difference between the old and new values of kappa
knew	R	New value of kappa
kold	R	Old value of kappa
l0	R	Likelihood function under H0

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l1	R	Likelihood function under H1
lambda	R	Difference between l1 and l0
list	IA	Used to assign values 1..n in the array
loop,loop2	I	Loop counters
maxdiff	R	Maximum absolute difference between the observed and actual product limit estimator
meanex	R	Mean of the exponential distribution
n	I	No. of individuals or no. of individuals per treatment
pdf	R	PDF of the Weibull distribution
ple	R	Product limit estimator
powers	R	In the form (t**k)
prcensor	R	Probability of censoring
psn	I/IA	No. of observations remaining
rho	R/RA	Rate for the Weibull distribution. In accelerated life models, the rate for std. group or may not be constant.
rho2	R	Rate for the Weibull distribution in treated group
rhoex	R	Rate for the exponential distribution
sek	R	Standard error of kappa
sep	R	Standard error of rho
sorts	I	No. of sorts
spexp	R	Sum of (x**k)*exp(.)
spexpic	R	Sum of (x**k)*exp(.)*zi(.)
spln2	R	Sum of pln
sr	R	Sum of ln(rho*x)*((rho*x)**k)
sumln	R	Sum of logs to the base e (for uncensored individuals)
sumpower	R	Sum of xk
sumpowerln	R	Sum of xk ln x
surf	R/RA	Survivor function
swops	I	No. of swops
t	RA	Remission time
tn	I	Treatment number
tol	R	Tolerance
treated	I	No. of individuals in treated group
trt	I	No. of treatments
urand	RF	Random number generator that returns the values between 0 and 1. This function is taken from Brian D. Hahn, 1987
x	RA	Failure time
zi	IA	Indicator variable (1 if treated, 0 otherwise)

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Variable names in GLIM 3.77 programs

Variable name	Represents
c	Censor variate (1=uncensored, 0=censored)
d	No. of failures at some time
n	Vector required for Binomial errors
prop	Proportion failed out of r trials
r	No. of trials in view at some time
t	Failure times
temp	Temperature in degrees centigrade
time	Life time of motorette insulation in hours
wtl	Weight loss in lbs
x	Failure times