Likelihood ratios measure relative evidence. With likelihood ratios, better is bigger.

For goodness of fit, better is smaller

With Type I error, better is smaller LR (less Type I error). Here are several ways to calculate a likelihood ratio.

1. From the explained variance *R2*

*LR = (1 - R2)-n/2*

1. From a goodness of fit statistic G

*G = -2lnLR LR = eG/2*

*G* is distributed as *x2* with *k* degrees of freedom

*G~ x2(k)*

*k* is the change in number of degrees of freedom in the ANODEV table

1. From *∆Dev* the reduction in deviance (improvement in fit) in the ANODEV table

*∆Dev = G*

*G = -2ln(Lm ⁄ Lfull ) Lm* is the likelihood of the reduced model

*Lfull* is the likelihood of the full (unreduced) model

*LR = (Lm ⁄ Lfull ) LR = eG/2*

1. From the *t* statistic

*LR = (1 + t2⁄(n - 2))n/2*

1. From the *F* statistic.

*n/2*

*LR = (1 + F ( dfnumerator ))*

*dfdenominator*

7 From a model term displayed vertically in an ANOVA table.

*LR = (SSterm+SSres*

*SSres*

*n/2*

*)*