


# Small Exercise 1

|                             | Model 1                                    | Model 2                                |
|-----------------------------|--|--|
|                             | Parameters not estimated using sample data | Parameters estimated using sample data |
| Degrees of freedom          | $15 - 1 = 14$                              | $15 - 1 - 2 = 12$                      |
| CHI-Square sample statistic | 7.2063                                     | 5.3902                                 |
| Sample likelihood           | 0.6532                                     | 0.4279                                 |

Which of the following statements are true?

 Model 1 is better than model 2 as it has a higher sample likelihood.

 Model 2 is better than model 1 as it has a lower CHI-Square statistic and hence lower difference between observed and model values




 It is not possible to make such comparisons

# Small Exercise 2

In order to test a hypothesis the sample statistic for the Chi-Square ( $\chi^2$ ) goodness of fit test is calculated.

The hypothesis that the measurements support his model is not rejected at the 5% significance level .

Which of the following statements are true?

-  The same hypothesis cannot be rejected at the 2% significance level
-  It is possible that other models may pass the Chi-Square ( $\chi^2$ ) goodness of fit test at the 5% significance level and not be rejected.
-  Both the above statements are true