Reviewer’s report

Title: The Box-Cox power transformation on nursing sensitive indicators: Does it matter if structural effects are omitted during the estimation of the transformation parameter?

Version: 1 Date: 17 May 2011

Reviewer: Mohamed Shoukri

Reviewer’s report:

1- Major compulsory revisions:

This paper has several objectives:

1- Contrast the effect of obtaining the Box-Cox power transformation and subsequent analyses with or without a priori knowledge of predictors with simulation

2- Illustrate such effects with two examples of nursing-sensitive indicators from the National database of Nursing Quality Indicators.

The work seems to be straight forward with no major or significant contribution. There are many skewed distributions, for example the Johnson’s family that can be applied to the data. Likelihood based inference can be obtained without resorting to the normal distribution, or even employing the transformation.

The problem that I have with this paper is that the assumption of correlated errors when ignored, the analysis may not be valid. In fact the employment of the Box-Cox transformation might be affected by the presence of correlations among the error terms.

It is not difficult to hypothesize the presence of such correlation because the sampling units are hospitals, not individuals. The between hospitals variation will create such correlation. Note that, the problem of estimation of such correlation is closely related to the problem of variance components estimation (as documented in the literature). Therefore, the data used to exemplify the methodologies of this paper may not be appropriate.

2- Minor essential revisions:

None

3- Discretionary revisions

Adequate data summary should be described in the paper. For example, the number of hospitals, and the number of units in each stratum, means and standard deviations of the response variable should be adequately described.