

Sue Henly's responses dated 2-8-06 (IN ALL CAPS) regarding Gigliotti ms. (#2005/027):

a. Please clarify the relationship, if any, between the 489 women >studied in the 2002 article and this study. If the 294 women in >this study are among the 489 on whom you reported earlier, you must explain this relationship under procedure. If there is NO overlap, no change is needed. <?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

>  
**Authors' Response:** There is no overlap between the 2002 sample and the present sample. This is entirely new data set and participants were not only nursing majors but all majors within the college. The 2002 data set did not use situation specific questions at all.

ALRIGHT THEN. I THINK IT IS CONFUSING BECAUSE THE AUTHOR SAYS THIS REPORT IS PART OF A LARGER STUDY, BUT THE ONLY LARGER STUDY FOR WHICH THERE IS INFORMATION IS THE 2002 REPORT. BUT I AM SATISFIED WITH THIS EXPLANATION.

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b. If the samples overlap, you must cite the 2002 article under >Procedures and Samples and draw the readers' attention to the similarity in the sample here and in the 2002 article.

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**Authors' response:** See a.

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c. On page 12, 1st paragraph, sentence beginning with "Critical N was 60.774..." - please check this sentence.

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**Authors' response:** Changed to: The sample size of 154 was adequate given the >Critical N of 60.774; acceptance of the model required a lower sample size.

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MY VIEW OF THE SAMPLE SIZE ISSUES IN COVARIANCE STRUCTURES ANALYSIS ARISES FROM STATISTICAL ESTIMATION THEORY AND IS QUITE DIFFERENT FROM HOELTER (1983). FOR THAT REASON, I DON'T FIND THE CRITICAL N STATISTIC VERY USEFUL. FOR THOSE WHO DO, THE SENTENCE SHOULD BE OK.

HOELTER, J.W. (1983). THE ANALYSIS OF COVARIANCE STRUCTURES. GOODNESS OF FIT INDICES. SOCIOLOGICAL METHODS AND RESEARCH, 11, 325-344.

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d. On page 13, Model Two paragraph, last sentence - please check this sentence.

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**Authors' response:** Changed to: The sample size of 154 was adequate given the Critical N of 70.266 and this one-factor model rejected.

SEE C ABOVE

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e. On page 14, 1st complete paragraph, line 6 - change the ".000" >to a number other than 0.

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>Changed to: The Root Mean Square Error of Approximation was .065; the lower bound of the 90% confidence interval was < .001 which is below Browne and Cudeck's (1993) recommended value of < .05.

OK

>

I REALIZE THAT THIS PAPER HAS BEEN ACCEPTED AND THAT THE VERSION YOU SENT IS NEAR READY TO GO. HOWEVER I HAVE THESE SUGGESTIONS:

#### ABSTRACT

METHODS: USING DATA (N=154) COLLECTED FOR A LARGER STUDY, THE PARAMETERS OF 3 CONFIRMATORY FACTOR ANALYSIS MODELS WERE ESTIMATED BY THE gENERALLY wEIGHTED IEAST sQUARES METHOD IMPLEMENTED IN LISREL.

RESULTS: note: use  $p < .12$ , not  $p < .1166$

p 7 line 14

delete "through LISREL" Lisrel is just one of many computer programs that estimate confirmatory factor analysis models

p 12 para 1 comment

THE SOLUTION FOR MODEL 1 IS INADMISSABLE BECAUSE PARAMETER ESTIMATES ARE OUT OF BOUNDS. tHE UNIQUENESS PARAMETERS ARE VARIANCES AND SHOULD BE  $\geq 0$ .

THE ROOT PROBLEM FOR OUT OF BOUNDS PARAMETERS IS SMALL SAMPLE SIZE, AND THIS SHOWS UP CLEARLY IN SAMPLING EXPERIMENTS USING SIMULATED DATA. tHE PROBLEM CAN BE CIRCUMVENTED BY CONSTRAINING THE MINIMIZATION ALGORITHM TO ALWAYS STAY WITHIN THE DEFINED PARAMETER SPACE RATHER THAN USing ALL THE REAL NUMBERS. LISREL DOES NOT USE THIS CONSTRAINT IN ITS NUMERICAL ALGORITHM. IT IS VERY HAPPY TO ESTIMATE NEGATIVE VARIANCES, IF THAT'S WHAT IT TAKES TO FIND THE SMALLEST WEIGHTED DIFFERENCE BETWEEN THE DATA AND MATRIX ESTIMATED BY THE MODEL. NOT ALL PROGRAMS WILL ALLOW THIS TO HAPPEN. THE ESTIMATION PROBLEM CAN BE AVOIDED IN LISREL IF A REPARAMETERIZATION OF THE CFA MODEL IS USED whereby the square roots of the uniquenesses are estimated rather than the uniquenesses themselves. fOR THESE REASONS, I THINK THE EXPLANATION FOR THE NEGATIVE VARIANCES ('OVERESTIMATION OF THE VARIABLES' COVARIANCES) IS WRONG, WITH ALL DUE RESPECT TO KARL AND DAG who are cited in support of this interpretation.

Let me know if you have other questions. As always, I appreciate the opportunity to support the work of Nursing Research.

Sue