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**TITLE: PRACTICAL RELIABILITY OF RAS METHODS: AN EMPIRICAL ANALYSIS IN CHINA**

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**ABSTRACT:**

Abstract#65306;Among the diversified non-survey techniques, RAS method has had the broadest application because of its good maneuverability. Consequently, the accuracy of RAS method has attracted the attention from many researchers. Though a great deal of achievements have been obtained, there still exists a serious problem that the standard test procedures have a decline of overestimating accuracy. The paper proposes two designs to do a comparative analysis of real accuracy and upper-limit accuracy and addresses the extent of overestimation. In literatures, the comparison between modified RAS and standard RAS were usually made. It concerns the DF-error relationship. In order to draw reliable conclusions, we design 13 groups of pre-identified coefficients that have different number for a matrix. The most important two conclusions are: 1) the reduction of DF is able to decrease overall error reliably but to a large extent the decrease of overall error should be attributed to zero-error of pre-identified coefficients; 2) there exists threshold effect of DF-error relationship. Thus for modified RAS method, the accuracy of those unknown coefficients (excluding pre-identified coefficients) will have not improvement if pre-identified coefficients can not reach necessary number, which at least should account for 50% of the number of all coefficients.