



Sudan University of Sciences & Technology
College of Graduate Studies



**Dealing with Non-response Error in Longitudinal
Sample Surveys: A comparison Between the Standard
Weighting Approach and Sub-group Tailored Weighting
Approach**

التعامل مع مشكلة عدم الاستجابة في المسوحات الطولية:مقارنه بين طريقة
الترجيح التقليدية وطريقة المجموعات الجزئية للترجيح.

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Abstract:

The standard weighting approach (SWA) for the treatment of unit non-response, being based on general variables for the whole sample, does not take into account possible differences in response propensity in different sub-groups in the sample a thing that may lead to bias in estimates.

In this research, the possibility of reducing bias in survey-based estimates has been investigated by using variables correlated with the non-response propensity in the sub-group on which analysis is to be conducted.

This approach called "Subgroup-Tailored Weighting Approach (S-TWA) " led, in general, to estimates of propensity in sub-groups similar to those obtained for the whole sample by the SWA. However some of the estimates in sub-groups obtained by the S-TWA approach turned out to be superior to those obtained by the SWA approach as reflected in smaller standard errors.

The S-TWA seems to perform best when the sample consist of sub-groups that vary drastically with respect to non-response propensity.

المستخلص:

منهج الوزن التقليدي (SWA) في معالجة عدم إستجابة الوحده، لكونه يقوم على متغيرات عامه لكل العينة لا يضع في الإعتبار الإختلافات المحتملة في الميل للإستجابة في المجموعات الجزئية المختلفه بالعينه مما قد يؤدي لتحيز في التقديرات.

في هذا البحث جرت محاوله لبحث إمكانية تقليل التحيز في مقدرات المسح بإستخدام متغيرات مرتبطه بالميل لعدم الإستجابة في المجموعه الجزئية التي يجرى فيها التحليل.

هذا المنهج والذي يسمى "منهج الوزن المفصل للمجموعه الجزئية" (S-TWA) أدى، بصفه عامه لمقدرات مشابهه لتلك المتحصل عليها للعينة الكلية ب SWA، لكن بعض التقديرات في S-TWA كانت متفوقه علي تلك المتحصل عليها ب SWA.

وهو الشئ الذي إنعكس في أخطأ معيارية أقل. ويبدو أن أداء S-TWA يكون أفضل عندما تكون العينة مكونة من مجموعات جزئية تختلف بدرجة كبيره من حيث الميل لعدم الإجابة.

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