Reviewer’s report

Title: Migration and Child Immunization in Nigeria: Individual- and community-level contexts

Version: 4 Date: 21 September 2009

Reviewer: Stella Babalola

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Essential Minor Revisions

1. My Initial Comment: The age groupings are not equal. It is not clear why the authors decide to use these groupings as opposed to the more conventional ones;

Author’s response: Mother’s age was grouped as: 15-18, 19-23, 24-28, 29-33, and 34 years and older. The DHS survey only includes women 15 – 49 years. Apart from the age groups 15-18, which is a 4-year interval, and 34 years and older, the age groups 19-23, 24-28, and 29-33 are made up of 5-year

Additional comments: The author should provide references where this type of age grouping has been used in literature. The fact that the age groupings are unequal could have introduced some unknown bias into the analysis

2. Initial Comments: The community contextual variables are actually compositional variables aggregated upwards. There are two potential problems with this approach:

i. The same variables that were used to derive the “contextual” variables were also included as individual variables. This could result in multi-collinearity. Using the non-self mean might lessen this problem;

ii. The approach is subject to atomistic fallacy or the problem of making inference at a higher level with data collected at a lower level; iii. At a minimum, the authors should mention these problems as limitations;

Author’s Response: The author couldn’t disagree more! The simultaneous inclusion of both individual- and neighbourhood-level predictors in regression equations with individuals as the units of analysis, permits: i) the examination of neighbourhood or area effects after individual-level confounders have been controlled; ii) the examination of individual-level characteristics as modifiers of the area, effect (and vice versa); and iii) the simultaneous examination of within-and between neighbourhood variability in outcomes, and of the extent to which between-neighbourhood variation is “explained” by individual- and neighbourhood-level characteristics. (Please see last paragraph under “Community-level explanatory factors” on page 8, and references 31 & 32 below).

Additional Comments: The author has not addressed my concerns about multicollinearity and atomistic fallacy. I have no problem with including community and individual level variables in the same model. The problem here has to do with the way the community-level variables are operationalized.

3. Initial Comments: One wonders why the authors did not consider using incremental models (for models 3 to 5).

Author’s Response: The analyses and interpretation have been simplified as the reviewer indicates. However the 5 models are needed to clearly test the theoretical framework and draw inferences as the reviewer indicates. Model 1 tests the perspective of migrant disruption; models 2 & 3 test migrant selectivity; model 4 tests migrant selectivity; and model 5 assesses the effect of community-level characteristics. Incremental models would be testing the association between each individual variable and the likelihood of full immunization. This is not the aim of the study. The study aimed to examine the effects of individual- and community-level characteristics of migrant groups (i.e. migrant disruption, selectivity, adaptation perspectives, and community characteristics) on the likelihood of their full immunization uptake.

Additional comments: Why does the author need three models(models 2, 3 and 4) to test migrant selectivity?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests: I declare that I have no competing interests