The Introduction of Bias in Birth Projections in Small Areas near Colleges and Universities: Impacts and Adjustments

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Abstract

A central concern in the preparation of birth projections for small geographical areas near college level educational institutions is the potential bias introduced by the presence of a sizable population of females in the prime reproductive years who are actively deferring fertility behavior. This concern is increased when birth projections are created for the purposes of guided policy development among city planner and hospitals as these groups are typically interested in projections for very small geographic areas, often as small as a zip code or a set of census tracts.

This paper reviews work performed by the authors to develop realistic birth projections for a city with six local colleges and universities within its projection geography. The paper reviews the methodological challenges faced in the development of birth projections in geographies with high proportions of fecund females but low rates of reported fertility and ways to adjust for this bias.

Introduction

Traditional methods of population projection have always faced increased challenges as the target geography becomes more refined. While policy planners, city governments and market researchers have a pressing need for reliable estimates for very

small areas such as zipcodes and census tracks, our ability to provide stable predictors of population change in such small zones is severely limited by their dynamic nature.

With the introduction of zipcode approximation areas as part of the Standard File (SF) releases of the 2000 US Census of Population there are both increased opportunities and pressures for applied demographers to test various methodologies that project population growth in very small geographic market areas. While we will continue to face the same limitations in projecting change in dynamic and potentially unstable residential areas, the new ZCAT areas do provide a invaluable opportunity to test impacts of non-tradition neighborhood on projection assumptions in aggregate.

Methods and Results to be Presented

This paper describes an analysis of birth projections performed at the zipcode level for a New England city with a disproportionate number of colleges and university based residential neighborhoods. The impact of having high concentrations of women in child bearing ages who are actively deferring fertility behavior is illustrated. The potential effects on birth projections for a larger and more stable geography without controlling for these neighborhood effects is discussed and alternative projection scenarios are presented.