

A discrete choice decomposition analysis of racial and ethnic differences in children's health insurance coverage

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Abstract

This paper presents a multivariate decomposition analysis of racial and ethnic differences in children's health insurance using the 2004–2005 Medical Expenditure Panel Survey. We present two methodological contributions. First, we adapt a recently-developed matching decomposition method for use with sample-weighted data. Second, we develop a fully nonparametric approach that implements decomposition through weight adjustments. Accounting for the black–white wealth gap: a nonparametric approach. *Journal of the American Statistical Association* 97, 663–673]. Differences in observed characteristics explain large percentages of racial and ethnic coverage differences. Important contributors include poverty levels, parent education, family structure (for black children), and immigration-related factors (for Hispanic children). We also examine racial and ethnic differences in parent offers of employer-sponsored insurance and in children's coverage conditional on having a parent offer. Comparison of our linear, nonlinear, and nonparametric results suggests researchers may face a trade-off between robustness and precision when selecting among decomposition methodologies for discrete outcomes.

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1. Introduction

Large racial and ethnic differences exist with respect to the insurance of children. In our pooled 2004–2005 data, 70.5% of white (non-Hispanic) children age 18 and under had private coverage, versus only 40.7% of Hispanic children and 30.0% of black (non-Hispanic) children.¹ Public coverage closes much of these gaps, yet 21.3% of Hispanic children

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¹ Authors' calculations using the pooled 2004–2005 Medical Expenditure Panel Survey. See also [Agency for Healthcare Research and Quality \(2005\)](#).

and 11.6% of black children were uninsured the entire year, versus only 8.8% of white children. These coverage patterns mirror large racial and ethnic differences in access to care and utilization among children.² Differences in access and use likely stem from a complex array of causes, yet coverage differences are widely believed to be a contributing factor.³

Racial and ethnic differences in health insurance have received considerable attention from health services researchers. However, systematic decomposition analysis regarding the determinants of these differences has been undertaken only for adults, not for children. The objective of this study is to fill this gap using data from the 2004–2005 Medical Expenditure Panel Survey (MEPS). Factors considered include age, sex, geographic location, family composition, family poverty, parent education, parent employment, child and parent nativity, length of time in the U.S., child and parent citizenship, and the language used to administer MEPS. Because having a parent who is eligible for employer-sponsored insurance is a key factor determining children's private insurance, we also conduct a decomposition analysis of differences in parent offer rates and children's coverage conditional on parent offers.

Although our primary focus is on studying children's coverage, our paper also contributes to the methodology of decomposition. Insurance coverage is a discrete outcome, and conventional Oaxaca (1973)–Blinder (1973) mean replacement methods in linear models have undesirable theoretical properties. Nor are the existing nonlinear methods without drawbacks. For this reason, we present two new approaches. The first applies Fairlie's (1999, 2003) matching method to multinomial logit (MNL) estimation, developing a strategy that accommodates sample-weighted data. The second is a fully nonparametric approach, in the spirit of DiNardo et al. (1996) and Barsky et al. (2002).

We find that a large share – generally 70% or more – of the coverage differences among white, black, and Hispanic children can be explained by differences in the observable characteristics in our models. Important contributors include differences in poverty and parent education, with family structure (for black children) and immigration-related factors (for Hispanic children) also playing important roles. Whereas studies of adults find offers of employer-sponsored insurance to be more important than take-up in explaining racial and ethnic coverage differences, our results for children show that parent offers and take-up both play approximately equal roles. Finally, although our nonlinear and nonparametric estimates are very similar to results from conventional Oaxaca–Blinder decomposition of linear probability models, sensitivity analysis reveals that in our application nonlinear and nonparametric estimates are more robust to the manner in which explanatory variables enter the model. This robustness, however, comes at the cost of lower precision.

2. Background

Numerous studies have documented the existence of large differences in coverage between minorities and whites.⁴ Ku and Matani (2001) examine these differences among both children and adults by estimating multivariate models that control for a range of socioeconomic factors. They find adjusted coverage differences to be less than half as large as unadjusted differences, suggesting that observable determinants, such as income, education, and immigration-related factors, play important roles in racial and ethnic patterns of coverage.⁵ A closely related literature on nativity and immigration status finds citizenship – of children and their parents – to be an important determinant of coverage even after controlling for a range of socioeconomic factors including race and ethnicity.⁶

These papers provide important insights, yet they do not directly answer the question of how much a given characteristic contributes to coverage differences. Detailed decomposition studies can provide additional insights into the determinants of racial and ethnic coverage differences, yet to date such studies have focused only on adults. Most private health insurance in the U.S. is obtained through work, and research has linked racial and ethnic coverage differences among adults not only to socioeconomic factors such as income, education, and family structure, but also to

² One of many sources documenting differences in children's access and use is Agency for Healthcare Research and Quality (2005). For more on the role of insurance coverage in reducing disparities in access and use see Institute of Medicine (2002).

³ See, for instance, Currie and Thomas (1995), Currie (2000), Hargraves and Hadley (2003), Zuvekas and Taliaferro (2003), McGuire et al. (2006), Alegría et al. (2007), Buchmueller et al. (2005), and Selden and Hudson (2006).

⁴ See, for instance, Agency for Healthcare Research and Quality (2005).

⁵ See also Huang (1997), Ojeda and Brown (2005), and Hamilton et al. (2006).

⁶ See, for instance, Gabrielle and Ku (2003) and Capps et al. (2003).

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