

Education of Homeless Students: Towards a Prospective Approach

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Introduction: A Prospective Approach

The National Center for Homeless Education (NCHE), funded by the US Department of Education, collects and publishes data on the homeless students and education.

These excellent resources are, however, retrospective in nature, requiring education executives to plan programs based reporting on the conditions during previous years.

In this prospective approach, statistical modeling is used to develop and verify a forecast of future numbers and characteristics of homeless students by state, allowing programs to be based on current conditions.

Methodology

NCHE data by state for the 2009-2010 and 2010-2011 schools years, along with socio-economic data, is used to create two linear regression models – one projecting the number of homeless students and one forecasting in percent change by state in the following school year.

The performance of these models is validated by comparison to the actual numbers for 2011-2012.

The factors in these models are analyzed as key drivers of homeless student levels and changes in the population.

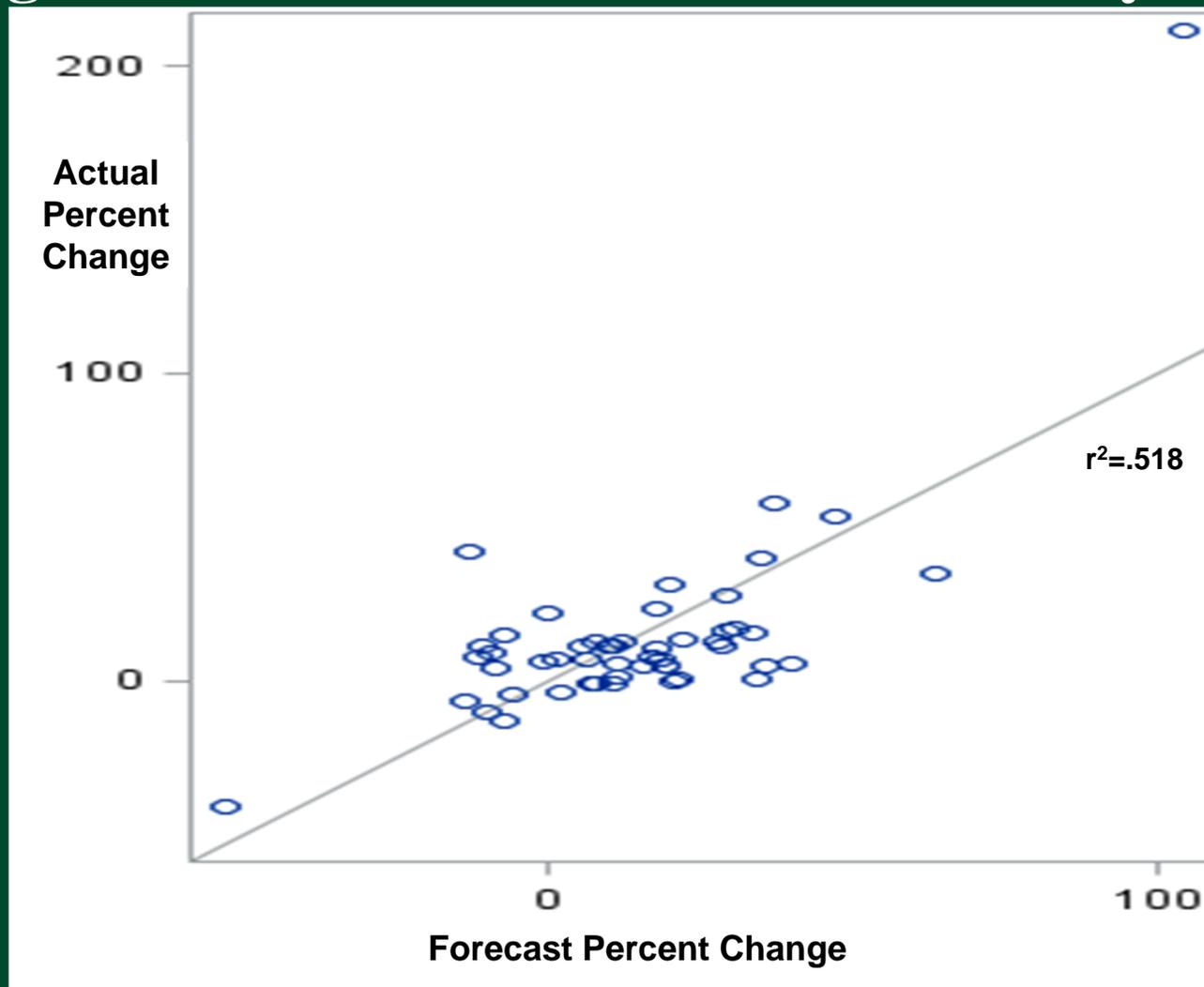
Key Findings

- **The model forecasts homeless student levels by state for the 2011-2012 school using socio-economic data and NCHE data from previous years**
- **Key drivers of changes in homeless student levels are income disparity (GINI Index), % of two-parent households, household size, median household income and housing cost**
- **Model performance is moderate ($r^2=0.518$), likely reduced by variation in reporting standards from state to state**
- **Model Performance increases accuracy over carrying over the rate of change from the previous year by 39.7%**
- **No forecast is possible for Bureau of Indian Education (BIE) due to lack of complete socio-economic data for Indian Reservations; these areas have the second highest homeless student rate in the nation at 4.9%**

Tractable and Intractable Factors

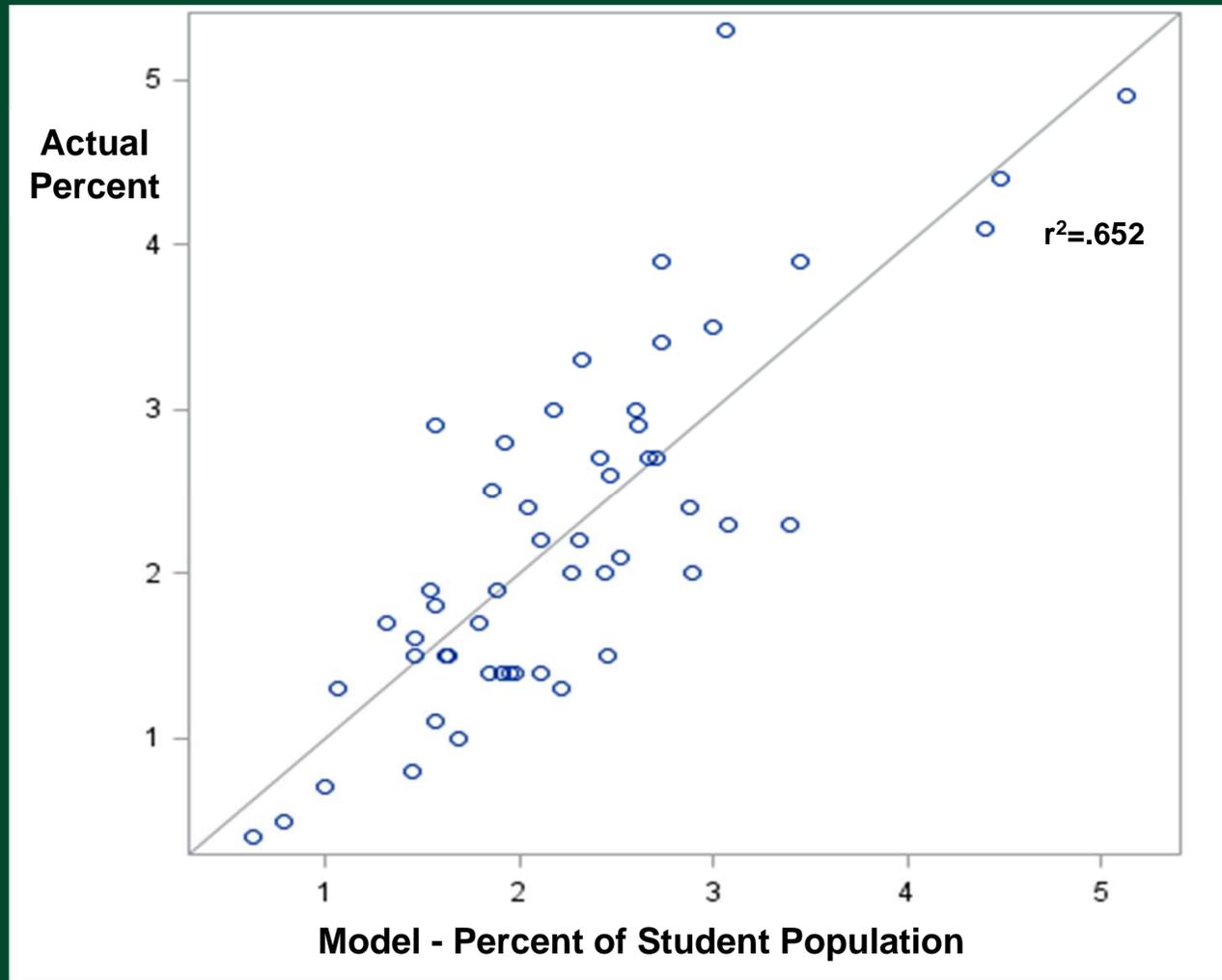
- *Intractable* factors are those contributing to the number of homeless students, such as poverty levels, that are relatively difficult to change.
- One group of tractable factors include those associated with recently acquired poverty: foreclosures, bankruptcy and medical care costs, which are often linked to bankruptcy. These economic events need to be addressed as important contributors to new homelessness.
- Income disparity, as measured by the GINI index, may be addressed by programs that develop local businesses in high-poverty areas

Plot of 2011-2012 Forecast Performance Change in Number of Homeless Students by State



The model uses NCHE data by state for the 2009-2010 and 2010-2011, in addition to 14 demographic and economic factors, to forecast homeless student levels in 2011-2012

Model: Homeless Students by State (Percent of Total Student Population)



Solid performance of the model across the range from low to high homelessness states indicates consistency of factors correlated with the number of homeless students