

Institute of Education Sciences  
National Center for Education Statistics

## NCES COMPARABLE WAGE INDEX

NISS TECHNICAL EXPERT PANEL • FEBRUARY 2011

### EXECUTIVE SUMMARY

The National Institute of Statistical Sciences (NISS), at the request of the National Center for Education Statistics (NCES) convened a Panel of Technical Experts to review and make recommendations concerning the NCES' statistical tool: Comparable Wage Index (CWI). The CWI was developed by NCES to provide a geographical adjustment of local-level or state-level expenditure data (e.g., per-pupil expenditures) in allow comparisons across geographic units.

The Panel was charged specifically to identify the use cases and communities that already provide geographically adjusted education expenditure data and then to derive specifications for such indices based on these use cases. The Panel was then asked to evaluate how well the CWI meets these specifications and to propose (feasible) modifications or alternatives to improve or replace the CWI.

The Panel's initial deliberations outlined several research questions that were then undertaken by NISS with results referred to the Panel for further consideration. This research addressed the validity of a salary-based index as the basis for adjustment, the feasibility of constructing an index from public (compared to restricted access) data files and several technical issues in the model construction (variance estimation, selection of predictor variables, use of sampling weights).

Following discussion of research findings, the Panel's principal recommendation is that:

NCES annually produce geographical adjustment factors for educational expenditures:

- Using as input the internal, confidential microdata files from the American Community Survey, available only on a restricted-access basis subject to the U.S. Census Bureau's statutory mission requirements (U.S. Code Title 13).
- Employing modeling methodology based on the extant CWI *base year* methodology, with minor modifications to address technical issues.

The Panel included a number of more specific recommendations that address specific technical issues related to the formulation of geographical adjustment factors to ensure desirable statistical properties:

- Support cross-sectional and temporal comparisons;
- Document data sources, methodology and statistical uncertainties;
- Use one-year fine-scale data files and be reported promptly;
- Account for state-level random effects;
- Include industry and occupation classifications related to education and include field of degree as predictor variable; and
- Properly incorporate weights in model specification and all calculations.

Finally, the Panel indicated issues for future consideration by NCES.

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