

**Factors Associated With
School Meal Participation and
the Relationship Between
Different Participation
Measures**

Contractor and
Cooperator
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EXECUTIVE SUMMARY

This report investigates three important aspects of student participation in the National School Lunch Program (NSLP) and School Breakfast Program (SBP) using recently collected data on a large, nationally representative sample of students certified for free and reduced-price meals during the 2005–2006 school year. First, we examine the factors that influence students’ participation decisions (here and throughout the report we use “participation” to refer to the number of school meals that students receive and “certification” to refer to whether or not students are certified for free or reduced-price meals). Second, we examine the relationship between school meal certification status and participation using meal certification error as a natural experiment. Finally, we explore the extent to which parent reports of their children’ participation accurately represent actual school meal participation as determined from school administrative records. Our methodology and the findings related to these three sets of analyses are summarized in the sections that follow.

A. FACTORS ASSOCIATED WITH SCHOOL MEAL PARTICIPATION

A key objective of the NSLP and the SBP is to ensure that children have access to nutritious meals. However, many students who are certified for school meal benefits do not participate consistently in the school meal programs. Learning more about the factors related to participation in the NSLP and SBP is a step toward increasing the number of students who receive needed nourishment through the school meal programs.

Our primary analysis focuses on a school meal participation measure based on student-level administrative records data. The strength of this measure is that it is more likely to reflect students’ actual school meal consumption during the school year than are self-reports or parent reports of participation, which are subject to reporting error and typically have a short time reference.

Using these data, we estimate a multivariate regression model of the relationship between school meal participation and student demographics, family characteristics, attitudes toward school meals, school characteristics, and school meal program characteristics. Our key findings from this analysis are:

- School type is the factor most strongly associated with both school lunch and school breakfast participation among students certified for free and reduced-price meals. For example, compared to otherwise similar elementary school students, middle school students are 5 percentage points less likely to obtain a school lunch at a given eating occasion, while high school students are 28 percentage points less likely.

- Students who are satisfied with the taste of school meals are much more likely to obtain a school lunch or a school breakfast than students who are not. The relationship between satisfaction with taste and school lunch participation is particularly strong for high school students.
- School use of electronic point-of-sale (POS) technology is strongly associated with student's school lunch participation. This may be because electronic POS technology increases the convenience or decreases the stigma of receiving school lunch. This relationship is strongest for high school students.
- Students from households with an employed adult obtain school lunches more often than otherwise similar children who do not have employed adults in their household. One reason for this relationship may be that low-income employed parents have less time to prepare meals for their children at home than parents who are not employed. This relationship is strongest for elementary school students.

B. CERTIFICATION STATUS AND SCHOOL MEAL PARTICIPATION

The extent to which school meal programs can affect student nutrition depends directly on the extent to which these programs increase school meal consumption. We take advantage of a natural experiment to make inferences about the causal effect of student's school meal certification status on school meal receipt by exploiting the fact that students who are eligible for a certain certification status (for example, free meals) are sometimes misclassified into another certification status (for example, reduced-price meals). The results of this analysis have several important policy implications. Most fundamentally, they enable us to assess how successful school meal programs are at increasing low-income student's receipt of school meals, which is necessary for the programs' success in improving nutrition among disadvantaged school-aged children. Additionally, our findings have implications for the debate on the effects of eliminating the reduced-price certification category because we can assess the increase in school meal receipt that would result from providing free meals to students eligible for reduced-price benefits under current program rules.

There are two reasons a student may receive the wrong school meal certification status: reporting error (parents did not report correct information on their application) and administrative error (school or district administrators did not correctly process the application). Because administrative error is not likely to have occurred systematically, we can consider the application process as a natural experiment in which some students who would otherwise be eligible for a particular certification status are assigned to a different certification status. In other words, the reason that a student who was eligible for a particular certification status was not certified for that status is fairly random from the student's perspective. As a result, any differences in participation between, say, free-eligible students who were correctly certified and free-eligible students who were

certified for reduced-price meals can be attributed directly to differences in certification status.

This experiment allows us to answer the following research questions:

- *What is the effect of certification for free meals relative to certification for reduced-price meals?*
 - From the perspective of free-eligible students
 - From the perspective of reduced-price-eligible students
- *What is the effect of certification for free meals relative to no certification for free or reduced-price meals?*
 - From the perspective of free-eligible students
 - From the perspective of students not eligible for free or reduced-price meals
- *What is the effect of certification for reduced-price meals relative to no certification for free or reduced-price meals?*
 - From the perspective of reduced-price-eligible students
 - From the perspective of students not eligible for free or reduced-price meals

Our key findings related to these questions are:

- Reduced-price-eligible students who are certified for free meals because of administrative error obtain significantly more school lunches than otherwise similar reduced-price-eligible students who are properly certified, but they do not obtain more school breakfasts.
- These findings suggest that eliminating the reduced-price certification category would increase lunch participation among students eligible for reduced-price meals under the current program rules, but that it would not increase breakfast participation.
- Among free-eligible students, there is strong evidence that free certification increases breakfast participation compared to not being certified for free or reduced-price meals, and no strong evidence of an increase in lunch participation.

C. COMPARISONS OF PARENT-REPORTED PARTICIPATION AND ADMINISTRATIVE RECORDS

A reliable measure of participation is critical for any study examining student participation in the NSLP or SBP. Because collecting detailed student-level

administrative data on actual daily participation can be prohibitively expensive,¹ researchers have often relied on parent- or student-reported data to measure student participation, though these types of measures are likely subject to greater error than are measures based on administrative data. This study uses data from a nationally representative sample of students that included parent surveys and administrative records to examine how closely estimates of NSLP and SBP participation developed from parent-reported data for a day or week match actual participation among students certified to receive free and reduced-price meals over a longer period of time. Because the administrative data are not sufficiently detailed to determine whether the report of participation on the previous day (or week) for a given child is accurate for that day (or week), these comparisons of parent-reported measures to administrative records measures confound two possible sources of differences: (1) reporting error and (2) actual participation differences between time periods. Thus, discussions of how closely estimates of participation for the month or year based on parent reports for a day or week match actual participation for the month or year should not be misinterpreted as the accuracy of parent reports for the specific time period for which they were reporting.

We conducted three types of comparisons of estimates of participation based on parent reports to actual participation based on administrative records data: (1) comparisons of different measures of aggregate participation rates, (2) comparisons of different measures for individual students, and (3) comparisons of factors associated with different measures of participation. Our key findings related to these comparisons are:

- Measures of NSLP and SBP participation based on parent reports for a short time period overstate actual monthly and annual participation over longer periods among students certified to receive free or reduced-price meals. These differences might be due to differences in the data source or the time period of the measures.
- Parent reports are better estimates of longer-term participation in the NSLP than in the SBP.
- Parent reports on school meal program participation for a day or week provide better estimates of participation during the relevant month than of annual participation.
- Compared to parents of middle and high school students, parents of elementary school students report NSLP participation rates for a week that are closer to their children's actual annual participation.

¹ Other reasons researchers do not collect administrative data on participation are that some schools or districts do not collect and store data on participation at the individual level, or some schools or districts that do so might not release the data because of student confidentiality.