SNAP Generosity and Healthy Food Choices: Quasi-Experimental Evidence from Geographic Variation in Food Prices

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PROJECT SUMMARY

Title: SNAP Generosity and Healthy Food Choices: Quasi-Experimental Evidence from Geographic Variation in Food Prices

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Objectives: Whether Supplemental Nutrition Assistance Program (SNAP) benefits lead to healthy food choices for eligible households is an important and timely policy question. While the nominal value of SNAP benefits is fixed across states (except for Hawaii and Alaska), variation in food prices across geographic areas is dramatic, and therefore the real value (or "generosity") of SNAP benefits varies widely across the U.S. Our proposed research uses new evidence on the significant geographic variation in the adequacy of SNAP benefits to estimate the relationship between benefit adequacy and the nutritional quality of food purchased by SNAP households.

Methods: We compare the nutritional quality of SNAP households' food purchases to the real generosity of SNAP benefits, using a dataset of geographic variation in the adequacy of SNAP benefits to purchase the Thrifty Food Plan (TFP), which we constructed previously using FoodAPS-GC data. To measure healthful food purchases, we employ several outcome measures from the FoodAPS household- and individual-level data: self-reported dietary nutrition; the USDA's Healthy Eating Index score; quantity and percentages of spending on foods such as fruits and vegetables and sugar sweetened beverages; and spending on food at home versus food away from home. To measure SNAP benefit adequacy, we rely on our previous work, which uses the FoodAPS-GC data to compare SNAP benefits to the estimated cost of the TFP in each respondent's county, as well as at the stores at which each respondent shops (Bronchetti, Christensen, and Hansen, 2015). Our primary empirical results will be based on regressions of measures of the nutritional quality of food purchases on measures of SNAP adequacy, household characteristics such as income and demographics, and factors such as geographic access to stores.

Policy Implications: With the exception of Alaska and Hawaii, SNAP benefit levels are fixed, despite striking geographical variation in the cost of food. We have previously used FoodAPS data to provide evidence that benefit levels are inadequate in certain areas and relatively generous in others. A crucial follow-up question for policymakers is the extent to which this variation in (real) benefit generosity impacts SNAP recipients' health and wellbeing. Our proposed research studies the link between the adequacy of SNAP benefits and outcomes related to the nutritional value of SNAP recipients' food purchases.

RESEARCH QUESTION AND POLICY RELEVANCE

The extant literature demonstrates positive impacts of the food stamp program on health. These include, for example, short-run improvements in the birth weight of those exposed to food stamp benefits in utero (Almond et al. 2010); medium-run improvements in childhood health status (East 2015) and BMI (Schmeiser 2012) for those receiving SNAP between ages 0 and 5; and even longer-run improvements in adult health and labor market outcomes (Hoynes et al. forthcoming) for those exposed to the program during early childhood. Recent evidence also shows that the current food stamp program (Supplemental Nutrition Assistance Program, or SNAP) helps to reduce food insecurity in recipient households (Nord and Golla 2009; Mykerezi and Mills 2010; Yen et al. 2008). Nonetheless, food insecurity amongst recipient households remains high (Coleman-Jensen et al. 2015), and program participation among eligible households is far from 100% (Currie 2003), raising the question of whether SNAP benefits are adequate.

Importantly, SNAP benefits are *not* indexed to the regional price of food, with the exception of Alaska and Hawaii, even though the price of food varies significantly across the country. Data from the Quarterly Food at Home Price Database (QFAHPD) show that regional food prices vary from 70 to 90 percent of the national average at the low end to 120 to 140 percent at the high end (Todd et al. 2010; Todd, Leibtag, and Penberthy 2011). Our earlier work using the FoodAPS household-level, individual-level, and geography component datasets shows that only 70-80% of households can afford the Thrifty Food Plan (TFP)--the basis for legislated SNAP benefit levels--with the SNAP benefits they receive (Bronchetti, Christensen, Hansen 2015).

Importantly, SNAP adequacy may also affect nutrition by impacting the purchases of healthful and unhealthful foods. Using FoodAPS and FoodAPS-GC data, we propose to investigate the relationship between the relative generosity of SNAP benefits *at the local level* and the nutritional quality of the food purchased by SNAP recipients. Policy makers should consider this relationship when adjusting legislated SNAP benefit levels or tying benefit levels to geographic variation in food costs.

RESEARCH DESIGN

We are currently working on a project with FoodAPS and FoodAPS-GC data that links county-level and store-level cost of the TFP to FoodAPS households to determine the adequacy of SNAP benefits to purchase the TFP. We link several measures of TFP cost to individual respondents, and then use each respondent's income and SNAP benefit level to determine adequacy of benefits. We have found that, at most, 70-80% of SNAP recipient households can afford to buy the TFP locally with the intended 30% of their net income. (SNAP benefits are defined and set at exactly the level to enable this, but using the *national average TFP cost*, so recipients in areas with higher-than-average TFP prices will not be able to afford the bundle.)

We now propose to relate our multiple measures of benefit adequacy (including a binary measure of sufficiency, the dollar amount of any shortfall, and the percentage of income above 30% required to purchase the TFP) to nutritional quality of SNAP households' food purchases. We will measure nutritional quality of food purchases with several FoodAPS variables: self-reported assessment of dietary nutrition, the Healthy Eating Index (which assesses conformance to the USDA dietary guidelines), purchases of sugar sweetened beverages and fruits and vegetables, and the proportion of food prepared at home versus away from home. We will also examine if SNAP generosity influences SNAP participation among households that are (imputed to be) eligible.

Of course, these outcomes are also impacted by a number of factors related to socio-economic status, demographics, and geography. Some of the relevant factors, including income, family size, and the concentration of certain types of stores near each household, are included in the FoodAPS data, and we will control for these in a multivariate regression. As FoodAPS is a cross-sectional dataset, we will be unable to perfectly identify the causal effect of SNAP generosity on nutritional quality. However, by using the method of comparing potential selection on unobservables to selection on observables from Altonji, Elder and Taber (2005) we can put reasonable bounds on our estimates. Given that previous information on geographic variation in food prices has been very limited (e.g., at the level of the census region or geographic market group), we feel that these reduced-form, individual-level correlations between real food stamp generosity (measured at a *local* level) and nutritious food purchasing will reflect a significant contribution to both the academic literature and the policy discussion.

EXPECTED RESULTS AND IMPACT

Our study will quantify the relationship between SNAP generosity, local food prices, and purchases of healthful foods. This issue is a core policy question for determining the potential benefits of increasing SNAP payments to individuals on the margin. If healthy food is a normal good, then we would expect healthy food purchases to increase as SNAP benefits become more generous. This also depends on whether households face binding time constraints, making it important for us to examine the heterogeneity of impacts by household size, structure and labor force participation. Given that legislated SNAP benefits are based on the Thrifty Food Plan, our results will also speak to whether food purchases approach the suggested TFP bundle as generosity increases. Finally, our data and methodology allow us to shed light on a secondary, but related, question - the relationship between the *real* generosity of SNAP benefit levels and program take-up among eligible households.

PROJECT STAFF

Principal Investigators Erin Bronchetti (Associate Professor, Economics, Swarthmore College), Garret Christensen (Assistant Project Scientist, Berkeley Initiative for Transparency in the Social Sciences and Data Science Fellow, Berkeley Institute for Data Science), and Benjamin Hansen (Associate Professor, Economics, University of Oregon) have previous experience with the FoodAPS data based on a grant funded through the USDA and UKCPR. The proposed research staff have already presented preliminary findings at a conference for those using the FoodAPS, as well as APPAM, demonstrating the effectiveness of the team and the likely success of the proposed research. Garret Christensen will focus on the empirical analyses of the data, while Professors Bronchetti and Hansen will focus on writing, background research, and considering alternative identification strategies for bounding of the causal effect of SNAP generosity on food choices.

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