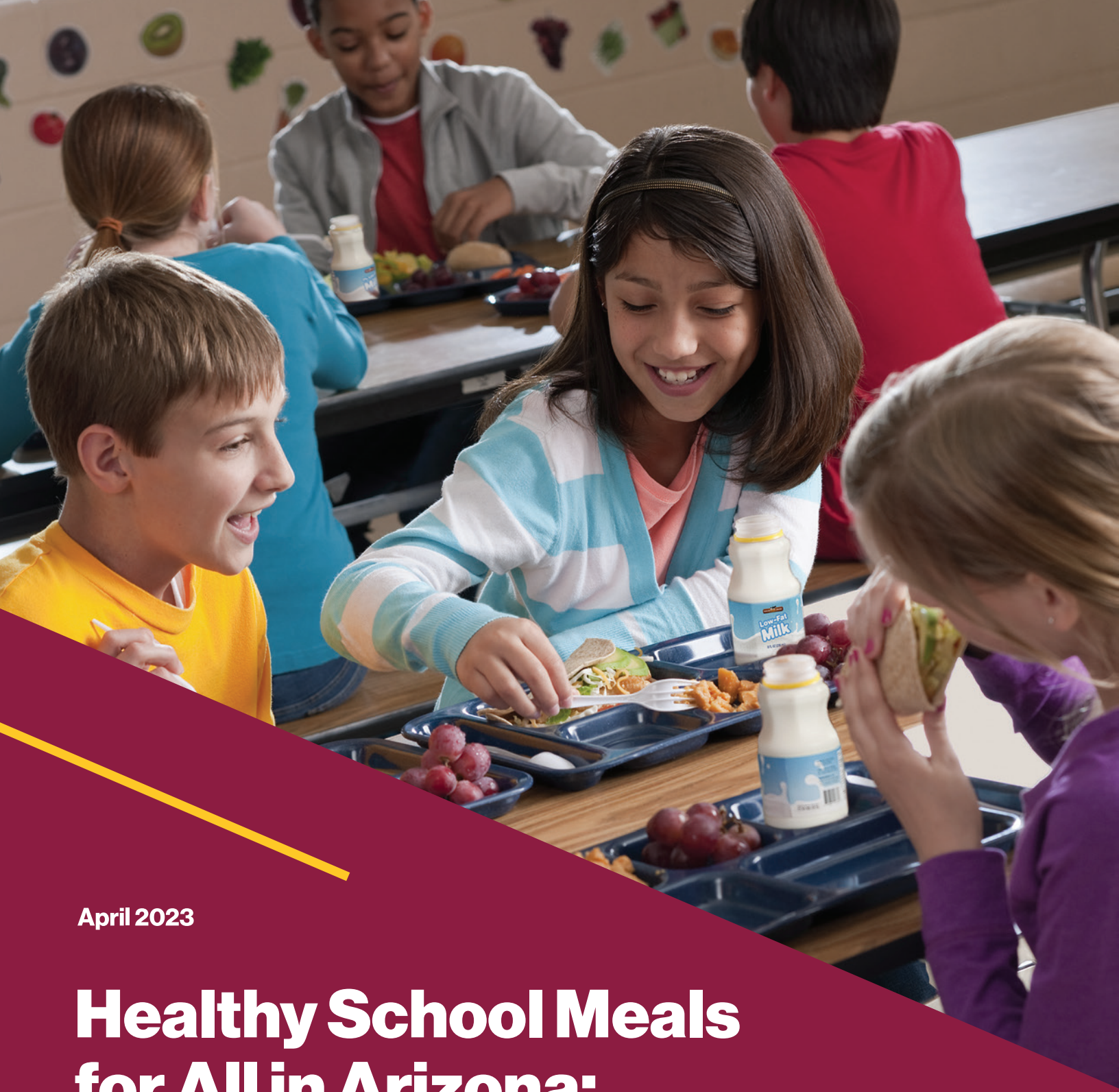

April 2023

Healthy School Meals for All in Arizona:

A Comprehensive Assessment of Benefits, Cost Scenarios, and Community Perspectives

NO KID HUNGRY by SHARE OUR STRENGTH
Arizona Food Bank Network
ASU College of Health Solutions
Arizona State University
ASU Food Policy and Environment Research Group

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A Comprehensive Assessment of Benefits, Cost Scenarios, and Community Perspectives

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We would like to thank the school food service directors and school community members across Arizona, who made this project possible by dedicating their time to participate in interviews, sharing our survey instruments, and for sharing their thoughts and opinions in the survey itself.

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Table of Contents

List of Tables

List of Figures

Glossary

ADE	Arizona Department of Education
AZFBN	Arizona Food Bank Network
BATB	Breakfast after the bell – an alternative service model where students are able to get breakfast after school starts, often in the classroom.
CEP	Community Eligibility Provision, an alternative funding model of the NSLP/SBP, allows schools to offer free meals to all students. Schools are federally reimbursed for meals served based on their ISP. The ISP is multiplied by a factor of 1.6 and that percent of meals is reimbursed at the free rate and the remaining meals are reimbursed at the paid rate. For example, if a school has an ISP of 50%, then 80% (50*1.6=80) of total meals served are reimbursed at the free rate and 20% of all meals served are reimbursed at the paid rate. In this funding model, schools are not required to collect annual FRPM applications from families.
Direct Certification	Direct certification is a process conducted by schools to certify eligible children for free meals without the need for household applications. Direct Certification relies on reports that identify families that are enrolled in other programs like Supplemental Nutrition Assistance Program.
FRPM	Free and Reduced-Price Meal
HEI	Healthy Eating Index
HHFKA	Healthy Hunger-Free Kids Act
HSM4A	Health School Meals for All
ISP	Identified Student Percentage. This is the percent of enrolled students who are categorically eligible for FRPM due to their family's enrollment in other programs such as SNAP or TANF.
NCES	National Center for Education Statistics
Paid Lunch Equity Tool	This is a tool provided by the USDA that guides schools on if and by how much the cost of paid meals should be increased each year.
SBP	School Breakfast Program
SFA	School Food Authority is the governing body that is responsible for the administration of the NSLP/SBP in one or more schools.
SNMCS	School Nutrition Meal Cost Study
3-tiered system	The most common method used by the USDA to reimburse schools for meals offered through NSLP and SBP. Based on reported family income students are placed into one of three categories: free, reduced-priced or paid. Families that are not directly certified are required to submit an income application each year.
UFM	Universal Free Meals
UFSB	Universal Free School Breakfast
USDA	United States Department of Agriculture

Executive Summary

The National School Breakfast Program (SBP) and the National School Lunch Program (NSLP) provide low-cost or free nutritious meals to students and are critical for student health and academic achievement. During the COVID-19 pandemic, the importance of these school meals became even more evident when millions of children and families suddenly lost access to meals due to school closures. The repercussions on child hunger as well as family financial, physical, and psychological well-being were immediate. To curtail increased food and nutrition insecurity, the USDA allowed schools to serve meals to all students at no cost during pandemic-related school closures (referred to as the Universal Free Meal program (UFM) or Healthy School Meals for All (HSM4A). This federal policy was a critical part of the food safety net that helped keep many families from experiencing food insecurity and brought the importance and value of school meals to the forefront of the anti-hunger and anti-poverty debate. The USDA ended this policy in September 2022, and schools in most states had to revert to charging for school meals in a tiered system based on household income. A number of states, however, created provisions to continue offering meals at no cost to all students. As of the writing of this report, many states are considering legislative action that would allow all students attending schools that operate the SBP or NSLP to receive no-cost meals.

This project aims to summarize current literature on UFM, assess perceptions of Arizonans about school meals, and estimate the potential cost to the state for expanding school meals to more students in Arizona. Key findings from the five components of the project are highlighted below.

Review of Literature

Building on a recent systematic review of literature published in 2021, we reviewed more recent studies and summarized their contribution to the knowledge base about the impacts of UFM. The current body of scientific literature provides unequivocal evidence of the benefits of UFM programs, highlighting improvements in meal participation, diet and meal quality, attendance, academic performance, children's weight status, and school finances. Moreover, identified benefits of UFM programs are often greatest among low-income students, which may contribute to reducing health disparities and improve health equity. Further research is needed to understand the impact of UFM programs on family food security status.

School Community Perspectives Survey

A survey was distributed in several districts in Arizona to school community members including principals, teachers, and parents, assessing their perspectives on school meals. Survey respondents (n=3,685) represented the full political spectrum and came from diverse racial/ethnic, income, and education backgrounds. Overall, there was overwhelming support for HSM4A during the COVID-19 pandemic, with 96% of respondents supporting the policy. An equally large number (93%) of respondents were in favor of implementing a similar policy in Arizona in the future. Most respondents agreed or strongly agreed that school meals help save families money (79%), lower family stress (85%), and are beneficial for student academic success (77%).

Qualitative Interviews with Food Service Directors in Arizona

We interviewed five public and charter school food service directors from urban, rural, and tribal school districts. All food service directors reported strong support for increased access to school meals. Directors felt confident in their school's ability to successfully provide no-cost meals to all students. The consensus among directors was that their schools

could handle potential increases in participation and the school community (superintendents, principals, and teachers) were also in support of providing school meals to all children at no cost.

Non-NSLP Food Access Survey

While NSLP is offered in the vast majority of schools in Arizona, a small number of schools do not participate in the program. We reached out to non-NSLP schools to better understand whether and how these schools were providing access to food resources during pandemic-related school closures. Some schools offered meals to students during school closures, others did not offer meals but advertised meals offered at nearby locations to families, and some did neither. Further research is needed to understand food access for students in non-NSLP schools, especially during periods of emergency.

Cost Analyses

We conducted analyses to estimate the number of additional meals that would be served and the overall cost to the state if access to no-cost meals was expanded in four scenarios.

1. Offering free school meals to all students (i.e., Healthy Schools Meals for All – HSM4A): Under this scenario, an additional 17 million meals would be served each year in Arizona, with a total anticipated cost of approximately $120,499,368 to the state per school year. This estimate would drop to approximately $101,958,554 annually if Arizona were to simultaneously require eligible schools to participate in the national Community Eligibility Provision.

2. Offering no-cost meals to students that are eligible for reduced-price meals: If Arizona covered the co-pays for families that qualify for reduced-price meals, approximately 1.5 million additional meals would be served each year with an estimated average annual cost to the state of $4,465,416.

3. Estimating the level of federal reimbursement that would come into Arizona if eligible schools were required to participate in the Community Eligibility Program (CEP): Under this scenario, Arizona would receive approximately $8.7 million and approximately $22.7 million in additional federal reimbursement if eligible schools participated in the CEP program for breakfast and lunch respectively.

4. Offering free school meals to most students (i.e., schools with an identified student percentage (ISP) of 25% or higher): We estimate an additional 10.5 million meals will be served each year at an approximate cost of $51,921,355; the total cost would be lower (approximately $41,210,587) if Arizona were to simultaneously require eligible schools to participate in the national CEP.

Conclusion

Our report highlights the benefits associated with expanding the reach of no-cost school meals for students in Arizona. Community surveys and interviews show broad support for increasing access to school meals in Arizona from community members. There are several options that Arizona legislators could consider for increasing access to school meals, each with varying costs to the state, but all with well-established benefits.

Introduction

The United States Department of Agriculture (USDA) supports the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). These programs serve nutritious meals to approximately 30 million school children nationally and to over 600,000 children in Arizona each school day.[1] School meals are associated with several health benefits for children, including improved dietary consumption and weight outcomes.[2] This has been particularly true following the implementation of the Healthy Hunger-Free Kids Act (HHFKA) in 2010, which put in place enhanced nutrition standards for school meals.[3] As a result of these improved standards, school meals are typically more nutrient-dense than packed lunches brought from home, and the nutritional quality of foods consumed at schools is higher compared to foods consumed from other locations such as grocery stores and restaurants.[3]

Given these nutritional benefits, all children would benefit from participating in school meals provided through NSLP and SBP. Participation in school meals is particularly beneficial for children who qualify for free or reduced-price meals (FRPM) based on family income, as children from lower-income families are more likely to experience food and nutrition insecurity.[4–6] Unfortunately, school meal participation rates remain relatively low. Even among children who qualify for FRPM, only about 40% of students participate in SBP and 79% participate in NSLP.[7] A few known barriers to participation include application-related burden and stigma related to program participation.[8]

The importance of school meals became all too clear at the start of the COVID-19 pandemic, when school closures contributed to a considerable increase in food insecurity rates both nationally and in Arizona.[9–11] This increase in food insecurity was particularly high for families with children early in the pandemic (from 36% in 2019 to 56% in April-July 2020).[11] This trend continued into 2021 with 45% of Arizona families with children reporting being food insecure in January-April 2021.[12]

To help support children and families during the pandemic, the USDA implemented a number of initiatives, including allowing schools to offer meals at no-cost to all students regardless of family income, through a program commonly referred to as the Universal Free Meals (UFM) program or Healthy School Meals for All (HSM4A).[13] This policy initiative was well-received by parents and caregivers in Arizona; 78% of Arizonans surveyed reported that free meals were helpful to their families during the pandemic.[14] Despite the benefits of the UFM program and the fact that many Arizona families have not yet fully recovered from the economic disruptions of the pandemic, UFM expired at the end of June 2022.[13]

Several studies conducted prior to the onset of the pandemic examined the impact of making school meals available to all students through programs like the Community Eligibility Provision (CEP), which allow schools in low-income communities to offer all enrolled students meals at no-cost.[15] These studies have shown that providing no-cost meals to all students can help reduce the stigma associated with participation in programs that serve meals for free to only certain students. Further, providing no-cost meals to students irrespective of family income reduces the administrative burden on school districts by eliminating the need to collect meal applications and track student eligibility status.

This timely project conducted by the ASU Food Policy and Environment Research Group at Arizona State University's College of Health Solutions with support from the Arizona Food Bank Network explored various policy options to expand school meal

access in the state of Arizona following the end of the federal UFM policy that guaranteed free meals for all students during the COVID-19 pandemic.

The goal of this project was to gather information about the costs and benefits of, as well as stakeholder perceptions about, expanding school meal access in Arizona. The main policy options we explored were (i) a Healthy School Meals for All (HSM4A) policy, which would provide free meals for all students in the state, (ii) allowing students who qualify in the reduced-priced meal category to eat for free, and (iii) expanding the reach of the CEP program. To achieve our project goal, our project aims included: (1) identify the impacts of HSM4A on participating student outcomes through a systematic review of the relevant literature; (2) examine perceptions of HSM4A policies through a survey distributed across the state of Arizona to parents, school personnel, and community members; (3) assess school food service directors' perceptions of HSM4A policies through in-depth interviews; (4) assess perceptions of HSM4A policies among personnel at schools not implementing the NSLP or the SBP; and (5) assess the cost to the state if various expanded meal access policies were to be implemented and assess projected changes in student participation in NSLP and SBP associated with expanded meal access policies. This research report provides findings from each of these project aims.

Section 1: Review of Literature

Objective

Our goal was to summarize literature examining the impacts of HSM4A/UFM-related policies on participating students' health, school attendance, and academic performance, as well as impacts on school culture and financial viability.

Methods

Search Strategies

A search for relevant peer-reviewed studies was conducted using online databases PubMed, Education Resources Information Center (ERIC), and Thomson Reuters' Web of Science. Keywords entered into these databases to identify relevant studies included: school, universal, free, community eligibility provision, reimbursement, access, poverty, hunger, meal, breakfast, and lunch. All terms were entered into the search all at once, the operator "AND" was used after "school" followed by each remaining term with "OR" between them. Search strategies and keywords used were derived from a recent systematic review on this topic published in March of 2021.[2]

We also conducted a review of the non peer-reviewed literature, by searching for government reports on USDA websites and searching websites of organizations undertaking research and advocacy related to school meal policies (e.g., Food Research & Action Center, Healthy Eating Research) using similar keywords. The non-peer-reviewed literature review did not identify any new studies that had not already been identified in the formal peer-reviewed database searches; therefore, this process is not included in the methods and results sections below.

Inclusion Criteria

A systematic review of universal school meals and student and school outcomes was published by Cohen and colleagues in 2021[2] and included articles that were published in peer-reviewed literature up to December 2020. To update this review, our literature search inclusion criteria was limited to articles published from January 2021 through May 31, 2022.

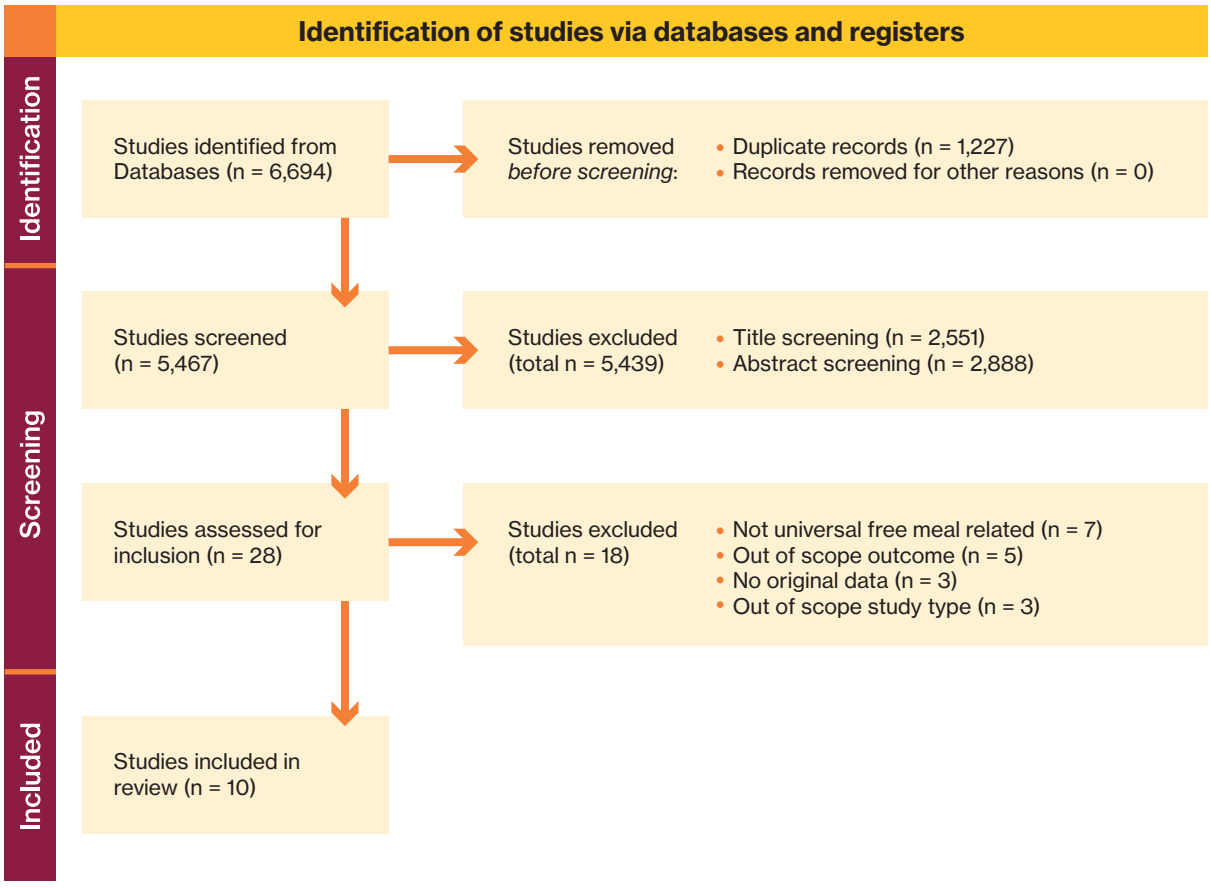
Articles presenting quantitative or qualitative results of the association between universal school meal programs and childhood health outcomes or impacts on school environments or finances were eligible for inclusion. Because universal school meal programs can be delivered through multiple provisions and mechanisms, we ensured our inclusion criteria was broad enough to capture all the different scenarios in which meals were served at no cost to all students. Therefore, studies examining outcomes of the Community Eligibility Provision (CEP), Provision 1, 2, or 3, universal free school breakfasts, universal free school meals, and/or USDA pandemic waivers that allowed all meals to be served free of charge to all students, were included. To be included, studies needed to have measured student health (weight, BMI, BMI z-score, BMI percentile, overweight, obesity, adiposity, dietary intake, food security, nutrition security) or student academic-related outcomes (e.g., academic performance such as reading or math scores, attendance, absenteeism) or school-related outcomes (e.g., school finances, school culture, behavior, school meal participation, parents, teachers, students, or staff's perceptions of the overall school environment and/or meals programs).

Studies not available in English language or that took place outside of countries that are not members of the Organization for Economic Co-Operation and Development were excluded.[16] In addition, we excluded articles that did not focus on universal free breakfast or lunch (e.g., focused on milk or snack programs), focused on programs offered outside of the school day or school year (e.g., afterschool snack programs or summer feeding), focused on programs delivered outside the K-12 environment, only compared across two universal school meal program modalities (e.g. comparing breakfast after the bell to breakfast in the classroom), or that did not present original data (e.g., systematic reviews or metanalyses).

Study Selection

As a first step, title screening was conducted by one reviewer to exclude obviously irrelevant articles. Next, the same reviewer screened study abstracts to see if they met inclusion criteria; any articles that were not clearly eligible or ineligible were flagged and then screened by the study PI (Martinelli) to determine eligibility for the next step, the full-text screening. The screening of the full text was completed independently by two reviewers. In the case of any conflicts, the article was reviewed by the full research team (4 members) and a discussion occurred to determine eligibility for study inclusion. The screening process was completed using Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia).

Figure 1. *Study selection flowchart using PRISMA guidelines.*



Results

The database search resulted in 6,694 total articles, from which 1,227 duplicates were removed. Articles were then reviewed by title, where 2,551 were removed. The remaining 2,916 articles underwent a full abstract screening, where another 2,888 articles were removed. A total of 28 total articles were left for full review. Of those, 18 did not meet our inclusion criteria (Figure 1). The main reason studies were excluded was that they were not specifically examining a universal school meal program. After all screening steps, a total of 10 articles were identified for inclusion. In this project report, we describe the 5 studies that were conducted in the US, since these are the most relevant to the present project.

Key themes from the 5 articles meeting the inclusion criteria are summarized below together with summary of research findings from the previously completed systematic review by Cohen and colleagues.[2] Table 1 also summaries the five articles included in the current review.

School Meal Participation

The primary goal of implementing UFM programs is to increase access to school meals for more students. As such, increased school meal participation rates are a primary indicator of program success.

Previous literature included in Cohen et al. (2021) review: Prior studies have shown that the introduction of CEP or other universal meal programs is associated with increased meal participation. In most cases, increases in participation occurred across all three meal eligibility categories, with somewhat larger increases in participation in the paid group, which includes children who were previously not eligible for free or reduced-price meals. However, it is important to note that while participation does increase with universal access to free meals, still not all students participate. Participation rates vary, with high school students less likely to participate in breakfast[17] and higher participation among minority[18] and food insecure students.[19]

Recent literature identified in the current review: Four out of the 5 studies meeting review inclusion criteria examined meal participation as an outcome.[20–23] Schneider et al. (2021) assessed meal participation rates within K-12 schools in Texas that participated in CEP at any point between SY 13-14 and SY 18-19. Overall meal participation increased by 4.6 ($p<0.001$) and 4.3 ($p<0.001$) percentage points among participating schools in breakfast and lunch, respectively.[20] Another study, conducted within a large urban school district, similarly found that participation in the school breakfast program increased immediately following the implementation of a district-wide USBP, and these increases were sustained over time.[21] This study also identified slight differences in the initial participation jump based on FRPM eligibility, where schools with a higher proportion of students previously eligible for FRPM saw smaller increases in participation compared to schools with lower proportions eligible for FRPM. Ferris et al. (2022) examined changes in SBP participation in schools that operated CEP and in those that operated CEP together with alternative meal service models, such as breakfast after the bell (BATB), within Missouri schools between 2016 and 2020. Findings demonstrated that SBP participation increased by 7 percentage points in schools operating CEP only and 14 percentage points in schools that operated both CEP and BATB; these findings suggest that the method of meal delivery is associated with meal participation rates in schools that offer universal school meals to students.[22] Lastly, Andreyeva et al. (2021) examined school meal participation rates using data from the Early Childhood Longitudinal Study – Kindergarten Cohort. Their analytic sample included students from 41 states, including CEP pilot states, who attended schools that participated in CEP between 2011 and

2016. Findings indicated that school CEP adoption was associated with an increased probability (9.3% increase) of parent-reported child participation in the school lunch program. This increase was much higher (40.7% increase) if children did not receive FRPM prior to school CEP adoption.[23] This differential increase is likely due to the fact that prior to school participation in CEP, the participation rate among students who did not receive FRPM was like lower than the participation rate for students who did.

Diet Quality and Food Insecurity

While the nutritional quality of foods served in school meal programs as well as the diet quality of students who participate in school meals have been the topic of previous studies,[24–26] the impact of participation in school meals on overall food insecurity rates has been less studied.

Previous literature included in Cohen et al. (2021) review: Most of the studies included in the Cohen et al. review examining diet quality focused on USBP programs. Studies indicated that USBP programs were positively associated with eating nutrient-dense breakfasts with more fruit and dairy[27] as well as eating breakfast rather than skipping breakfast.[28,18,29] Kleinman et al. examined students' dietary intake as well as participation in a newly implemented USBP and found that students with improved nutrient intakes also had a significant increase in SBP participation; however, not all SBP participants showed improvement in their diet.[30] School participation in CEP was also found to be associated with added sugar consumption levels at lunch that fell within the Dietary Guidelines for Americans (approximately 2.5% of total calories from added sugar out of the 10% recommendation).[31]

The impact of UFM programs on student and family food insecurity is less studied; only two studies examining this outcome were described in Cohen et al. One study used simulation models with national data to estimate the impact that participation in CEP has on families and found that just under 4% of students who attended a CEP school would no longer be food insecure as a result of the increased purchasing power their parents had to buy food outside of the school day.[32] Another study compared student food security in CEP schools versus schools that were not participating in the program and found that students attending non-CEP schools had increased odds of living within a food-insecure household, compared to students attending CEP schools.[33]

Recent literature identified in the current review: No new studies specifically examined the diet quality of students as an outcome measure. However, Long et al. examined the nutritional quality of meals served in CEP participating schools using data from the School Nutrition Meal Cost Study. Healthy Eating Index (HEI) scores of school meals were compared between CEP and non-CEP schools. There were no significant differences in HEI scores for schools offering CEP, indicating that even when more meals were served, the nutritional quality of meals did not suffer.[34]

Studies examining the impact of UFM on food security continue to be limited. One recent study did not identify a significant impact of CEP on household food security.[23]

Attendance

Improved student attendance is another identified potential benefit of UFM programs. Hypothesized pathways are that free meals may serve as an additional incentive for children to attend school, and/or that increased food access may improve child health and therefore result in lower absenteeism.

Previous literature included in Cohen et al. (2021) review: Prior studies examining this outcome have been mixed. The impact of UFM on attendance seems to be stronger in certain sub-groups; for

example, Bartfeld and colleagues (2019) found that USBP was associated with an increase in the percent of days attended (0.24 percentage point increase; p=0.023) and a decrease in the percent of students with low attendance (3.5 percentage point decrease; p<0.001) for low-income students only.[35] When USBP was introduced in NYC, a small increase in attendance among low-income Black students and higher-income Asian students was observed, but no significant association was identified for the full sample of students.[36] Similarly, CEP was associated with a reduction in low attendance in low-income students[35] and with improved attendance among elementary school students but not among middle school students.[37] Kleinman et al. (2002) also found that attendance did improve with the implementation of a UFBP within the subset of students whose nutritional status also improved.[30] Finally, Riber et al. (2013) found that when elementary schools stopped offering UFBP, there was no change in attendance.[38]

Recent literature identified in the current review: School attendance was examined as an outcome in two identified studies, one examining attendance in CEP schools[23] the other in schools offering UFBP.[21] Andreyeva and colleagues (2021) found that attending a CEP school was associated with an increase in daily attendance of 0.24 percentage points.[23] In contrast, another study reported that attendance did not change after the implementation of USBP within a large school district in the Southern US.[21]

Academic Performance

Like attendance, improved academic performance is a commonly identified potential benefit of participation in school meals programs. The proposed mechanism is that children who are hungry will not perform as well as students who are well-fed. Thus, access to school meals for students who might be experiencing food insecurity at home could contribute to less hunger and therefore improved academic performance.

Previous literature included in Cohen et al. (2021) review: Similar to attendance, the impact of UFM programs on academic performance was observed only among certain subsets of students. For example, the implementation of UFBP resulted in significant improvements in academic performance (i.e., math test scores), but only among students with improved nutrient intakes.[30] Similarly, in another study, improvements were identified in math and reading scores in 6 schools implementing USBP, but among only higher income students.[35] Other studies found no associations between USBP and academic performance.[28,29,36,38] CEP participation was associated with improvements in math scores, but not reading scores, among elementary school students, and was not associated with improvements in either math or reading scores among middle school students.[37] Finally, Taylor et al. reported improved teacher perceptions of academic performance and readiness to learn when CEP was implemented.[39]

Recent literature identified in the current review: One newly identified study examined associations between CEP and academic performance. Using the Early Childhood Longitudinal Study: Kindergarten Class of 2010-2011 which included data on students in CEP schools from 41 states, Andreyeva (2021) examined several potential outcomes potentially associated with CEP participation.[23] In the context of academic performance, the study did not find any measurable improvements in the full sample, though a subsample of Hispanic children showed a marginally significant CEP-attributable increase in reading scores.[23]

Body Mass Index

One concern that is sometimes expressed related to increasing access to school meals is that it might lead to increases in body weight if students are doubling-up on meals (for example, eating breakfast at home and then again at school).

Previous literature included in Cohen et al. (2021) review: Two studies examined the relationship between UFM programs and body mass index (BMI).[29,40] These studies found no overall association between UFM or USBP implementation and BMI. In a subgroup analysis of students with access to free lunch, there was a 2.5% reduced probability of obesity among higher-income students.[40]

Recent literature identified in the current review: Since the publication of Cohen et al., two additional studies have examined the relationship between UFM programs and BMI.[21,23] Neither found any association between the implementation of CEP or a USBP and weight outcomes in the full sample. However, children from low-income families had a reduction in the probability of being overweight by 3.1% if they attended schools participating in CEP.[23]

School Finances/Meal Cost

One important benefit often cited by the proponents of UFM programs is the reduction of per meals costs for school food operations due to increased economies of scale, increased federal reimbursement for meals, and less money and time spent on eligibility form collection and administration of the 3-tiered system (i.e., tracking student eligibility status for each meal and the time required to distribute, collect, and process meal applications).

Previous literature included in Cohen et al. (2021) review: The scientific study of school finances in UFM programs supports these benefits. All studies included in the Cohen et al. review that were conducted in the U.S. reported either lower per meal costs when measured and/or increased revenues from federal reimbursement that offset any increased costs associated with producing more meals.[29,39,41–44] One government report found that 21 of the 35 districts that removed the reduced-price co-pay, saw an increase in the number of meals served and a concurrent increase in federal reimbursement sufficient to cover any additional costs to prepare and serve those meals. Three of those districts indicated that cost to produce and serve meals were only partially offset. However, it is important to note that this policy removed the reduced price-copay for families but did not include any additional funding to support the loss of family-paid co-pay income schools were previously collecting.[41]

Recent literature identified in the current review: One newly identified study, Long et al., examined school meal costs within schools participating in CEP using data from the School Nutrition Meal Cost Study.[34] The study found that, overall, participation in UFM was associated with a marginal decline in school lunch costs ($p=0.062$) and a significant decline in school breakfast costs ($p=0.025$). Their study also examined these associations by school size. There were no per lunch cost differences between small schools (<500 students) offering UFM and small schools not offering UFM. However, large schools (>500 students) that did not offer UFM spent 13.9% more per lunch than schools that did offer UFM. No differences by school size were found for breakfasts.

Discussion

The current body of scientific literature provides unequivocal support for the implementation of UFM programs, highlighting improvements in meal participation, diet and meal quality, attendance, and academic performance with no negative, and even some positive, impacts on children's weight status and school finances. Moreover, identified benefits of UFM programs are often greatest among low-income students, whom these programs were particularly designed to support. Further research is needed to understand the impact of UFM programs on family food security.

USBP programs were introduced years before programs like as CEP and other provisions that allow for all meals (and not just breakfast) to be served

to all students at no cost.[45] As a result, a large proportion of the studies examining the impact of UFM programs focus on USBP programs. While these programs have documented benefits, CEP and other UFM programs appear to have a stronger impact on child and school-level outcomes. This is likely because these programs generally provide access to both free breakfast and lunch and can therefore contribute to a greater proportion of the student's overall diet. Also, the school breakfast participation rate is consistently lower than that of school lunch.[1] Future research investigating outcomes from programs that supply both free breakfast and lunch to all students is warranted.

Literature reviewed overwhelmingly shows that the introduction of UFM programs is associated with increased participation in school meals. Participation increases tend to be particularly high among students who were previously not eligible for free or reduced-price meals. However, even with these programs in place, not all enrolled students participate in school meals. In particular, participation in SBP remains lower than participation in lunch, even when free breakfast is available. Barriers to school breakfast participation beyond cost include bus schedules and early start times. One study confirmed that service model matters; when students were offered a free breakfast that was served after the bell, participation was higher. These findings highlight the need for schools to not only be able to serve free meals to all students but also have the flexibility and support to provide those meals through alternative service pathways.

The majority of studies identified in this review showed that the cost of implementing school meals when UFM programs are in place are generally offset by increased income from more participation. However, this may not be true in all cases. Smaller schools and rural schools may not be able to serve enough meals to capitalize on the economies of scale seen in larger schools. Future research should explore these differences and identify relevant tradeoffs.

Table 1. *Summary of studies included in the current review.*

Author, Year	Location; Participant Characteristics	Study Design	Year(s)	Meal Provision	Outcome Measure(s)	Results
Andreyeva, 2021	ECLS, Kindergarten class of 2010-11. Includes students from 41 states from public and private schools who attended CEP schools	L SDA	SY11/12 – SY15/16	CEP	(1) Participation - Lunch (2) Attendance (3) Academic achievement (4) Student's weight status (BMI) (5) Household food security	(1) Lunch participation increased by 2.4 percentage points (2) Daily attendance increased by 0.24 percentage points (3) No measurable changes in the full sample; sub-sample of Hispanic children showed a marginally significant CEP-attributable increase in reading scores (4) No measurable changes in BMI in the full sample, children from low-income families had a reduction in the probability of being overweight by 3.1% (5) No significant effect on household food security
Bullock, 2022	Urban school districts including 146,000 total students from 150 schools, 91 elementary, 30 middle schools and 31 high schools from the Southeastern US	L SDA	SY12/13 – SY13/14	USBP	(1) Student weight status (BMI) (2) Participation -Breakfast (3) Attendance	(1) BMI did not increase after implementation of universal SBP (2) Participation increased by 4.1% overall (3) Attendance did not change after implementation of universal SBP
Ferris, 2022	Statewide data from Missouri schools	L SDA	Sept 2016 – March 2020	CEP	Participation - Breakfast	Schools participating in only CEP were associated with a 7-percentage-point increase in the proportion of FRP breakfasts served; schools participating in both CEP and BATB were associated with a 14-percentage-point increase when compared to schools that participated in neither
Long 2021	A subsample of 310 SFA's or 972 schools from the nationally representative sample of schools that were part of the SNMCS. Schools with FRPM eligibility < 40% were removed.	CS	SY14/15	CEP	Meal cost	Lower per-meal costs in the SBP and meaningful, but marginally significant, lower costs in the NSLP among medium and large schools (over 500 students) Small schools did not see cost savings in 1st year No negative impacts on dietary quality of school meals
Schneider, 2021	All K-12 schools in Texas participating in NSLP/SBP who were eligible for CEP in at least 1 year and choose to opt into the program in at least 1 year (n=2797 unique school)	QE	SY13/14 – SY18/19	CEP	Participation - Breakfast and Lunch	Estimated participation increase in schools opting into CEP was 4.59-4.64% for breakfast and 4.32-4.61% for lunch

CS – cross sectional, **QE** – quasi experimental, **L** – longitudinal, **SDA** – secondary data analysis

Section 2: School Community Perspectives Survey

Objective

The goal of the community perspective survey was to collect opinions and perceptions about 1) school meals in general and 2) offering HSM4A to all students in Arizona from members of the Arizona school community.

Methods

To collect the opinions and perspectives of school community members (i.e., parents, teachers, food service staff, school administrators, and other school staff), we developed and distributed a survey using the Qualtrics online platform. Survey questions were derived from previous research that collected similar data in different states.[46–50] The survey instrument used for data collection is available in Appendix A1 and on the ASU Food Policy and Environment Research Group website. All respondents were asked questions within multiple domains, including how favorably they view school breakfast and lunch programs (very favorable to very unfavorable), their level of agreement with statements on a variety of topics related to school meals, such as their healthfulness and if they help save families time and money (strongly disagree to strongly agree), their level of concern about federal spending on school meals (extremely concerned to not at all concerned), their level of support for the policy offering free meals to students during the COVID-19 pandemic and for the potential extension of such policy in the future (strongly support to strongly oppose), as well as questions about reasons to either support or oppose HSM4A legislation. In addition, respondents were asked to select the top 3 most important benefits of making school meals available to all students at no charge. They were also asked to choose what they considered to be the best approach for funding school meals in the future, selecting from a list of 5 different funding approaches; specifically, (1) all meals should be free regardless of income; (2) the household income level should be increased so more families qualify for free meals; (3) no change to the current policy; (4) household income requirements should be decreased so fewer families qualify for free meals; and (5) no student should receive free or reduced-price meals. All respondents had the opportunity to respond to these questions.

A small set of additional questions were developed and asked of each group of respondents to capture their distinct experiences with school meals and any potential concerns they may have about a policy offering free school meals to all students in Arizona in the future. Finally, the survey asked respondents to report demographic information (e.g., race and ethnicity, annual family income, and education level) and their political leanings by asking "In terms of your views on political issues, how would you describe yourself? [very or somewhat conservative, middle of the road, very or somewhat liberal, or not sure]". The survey took an average of 13 minutes to complete. Respondents were given the option to provide their email address at the end of the survey to be entered to win one of five gift cards worth $100.

To facilitate survey distribution, only one survey was designed and included skip patterns that allowed different school members to answer questions most pertinent to them. The survey was distributed primarily through school districts in Arizona. Distri-

bution methods varied slightly according to district policies and procedures. The most common distribution methods were emails to all parents, staff, and teachers, or emails to only certain groups within their school community, and posts on school-managed social media platforms. In addition, the Arizona School Nutrition Association shared the survey link to its members via email. Study team members also shared the survey on their social media platforms (e.g., Twitter, Instagram).

In total, there were 5,431 responses collected. Prior to analyses, the study team completed steps to ensure the quality and integrity of the data. First, we identified and removed responses from locations that were outside of Arizona using geographic information systems (GIS) software, based on the latitude and longitude data for each response provided by Qualtrics. In this step, a total of 1,534 responses from locations outside of Arizona were removed from the sample. Next, the median completion time was calculated, and surveys completed in less than half the median time were removed from the sample (n=212). The final sample consisted of 3,685 completed responses.

Results

Sample Description

The sample included respondents with a wide range of income, education, and political affiliations (Table 2). The majority of respondents (64%) were parents, 34% were school staff, and 2% were community members. About half of respondents self-identified as non-Hispanic White (44%) and 43% identified as Hispanic. About one-third (31%) of respondents reported having an annual income of less than $34,999, 30% reported having an income ranging between $35,000 and $64,999, 20% reported having an income ranging between $65,000 to $99,999, and 19% reported having an income above $100,000. Varying levels of education were also

Table 2. *Sociodemographic characteristics of survey respondents. (N=3,685)*

Role	N	%
Teacher	449	12.2
Lunch Staff/Manager	84	2.3
School Admin	106	2.9
Other School Staff	616	16.7
Parent	2,347	63.7
Community Member	80	2.2
Race/ethnicity		
Hispnanic	1,572	43.3
Non-Hispanic White	1,610	44.3
Non-Hispanic Black	108	3.0
Non-Hispanic AIAINs	114	3.1
Non-Hispanic Other/Multiple	230	6.3
Annual Household Income		
<$34,999K	1,102	30.8
$35K–$64,999K	1,075	30.0
$65K–$99,999K	715	20.0
$100K+	692	19.3
Education		
HS grad or less	619	16.9
Some College + 2-year degree	1,285	35.0
4-year degree	802	21.8
Professional/PhD/Dr	968	26.4
Political Affiliation		
Very conservative	237	6.5
Somewhat conservative	444	12.2
Middle of the road	1,121	30.8
Somewhat liberal	708	19.4
Very liberal	654	17.9
Not Sure	481	13.2
County		
Maricopa	297	8.3
Pima	3,286	91.2
Other	19	0.5

represented in the sample, with the largest group of respondents reporting completing some college or a 2-year degree (35%), followed by those with a professional or doctorate degree (26%), and 17% of the respondent reported high school or less education. The sample also included a wide range of political views. For example, 19% of respondents reported their political views would be best characterized as somewhat or very conservative and 37% reported their views to be somewhat or very liberal. Finally, the majority of the respondents lived in southern Arizona (e.g., Tucson).

Opinions on School Meals

Three-quarters of respondents reported favorable views about school meals (i.e., school breakfast and school lunch); these favorable views were consistent across all stakeholder and demographic groups (Figures 2 and 3).

Respondents largely agreed that school meals provided multiple benefits for families and for students (Figure 4). The vast majority (85%) agreed or strongly agreed that school meals reduce stress for families by saving time in preparing and packing meals, 80% agreed or strongly agreed that school meals save families money, and 76% agree or strongly agreed that school meals benefit students academically. A little more than half (57%) of respondents agreed that school meals provide nutritious, well-balanced meals. Contrary to our hypotheses based on historical perceptions and other literature, few respondents thought that participation in school meals embarrassed children or that school meals were only for low-income children.

Most respondents (59%) reported not having any concerns about the money the federal government spends on school meals (Figure 5). Those with conservative political affiliations were more likely to be extremely or moderately concerned (19%), compared to those with liberal political affiliations (11%).

Parents of children who participated in school meals were asked to select the main reasons for their child's participation (Figure 6A-C). The most frequently selected reasons included help with saving families' time (59%) and money (58%), as well as children liking meals (52%). School meals saving families' time was most frequently selected by families with higher income (70%) and with higher education (72%), while school meals saving money was most frequently selected by families with lower income (65%) and with lower levels of education (62%).

Parents of children not participating in school meals were asked to identify reasons why their children did not participate. The most frequently selected reasons related to school meal quality and preferences. Almost half (46%) reported that their child did not like the taste of the food offered, 28% reported that their child gets tired of the same foods, and 21% reported that they were concerned about the healthfulness of school meals. Other reasons identified by parents were the high cost of the meals when not served for free (18%), the child not having enough time to eat school meals (15%), and challenges with completing school meal applications (13%).

Opinions on Healthy School Meals for All (HSM4A)

Among all respondents, there was unequivocal support (96%) for the policy put into place during the COVID-19 pandemic that allowed schools to serve meals at no cost to all students; this overwhelming support was consistent across all subgroups (Figure 7).

Figure 2. *Opinions on school breakfast by respondent type and demographics.*

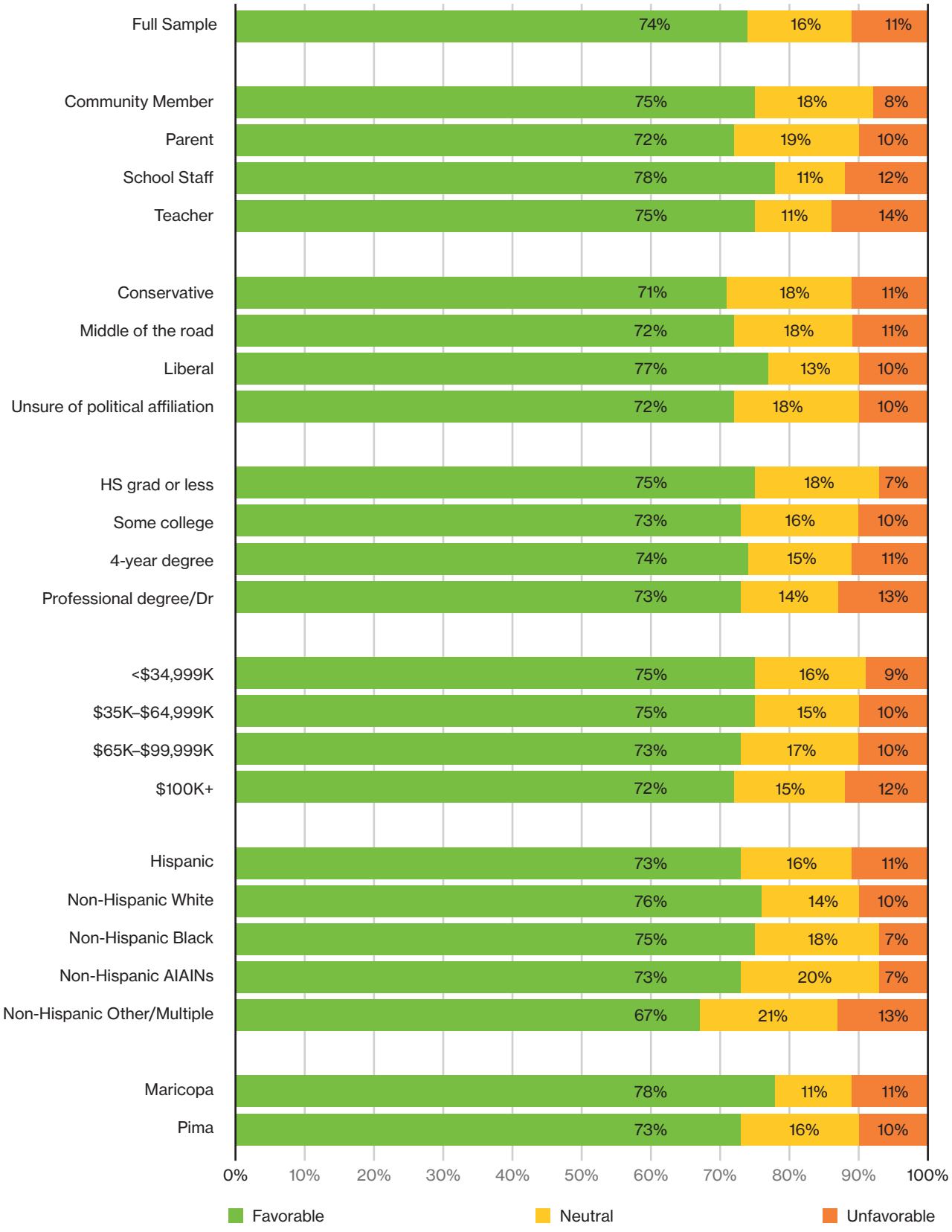


Figure 3. *Opinions on school lunch by respondent type and demographics.*

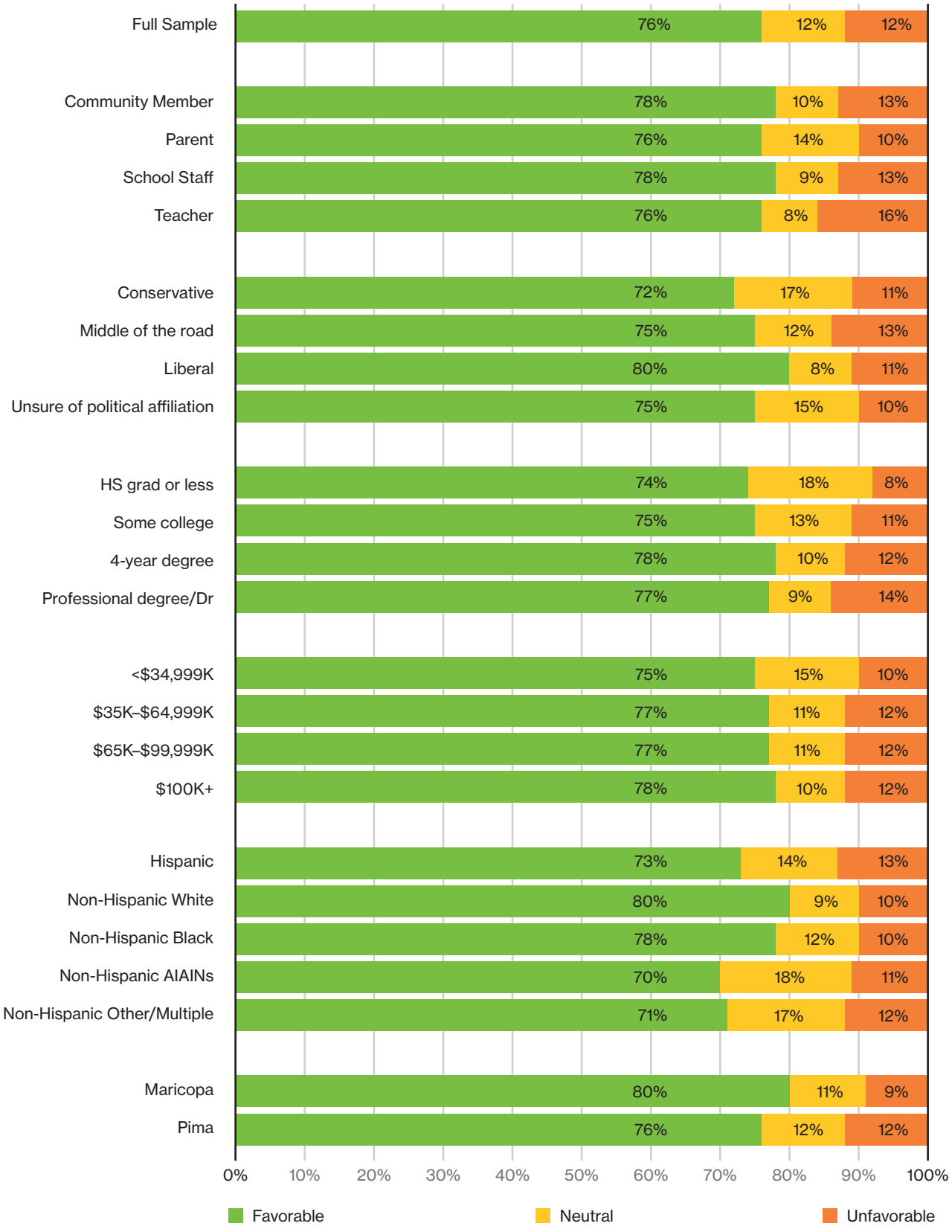
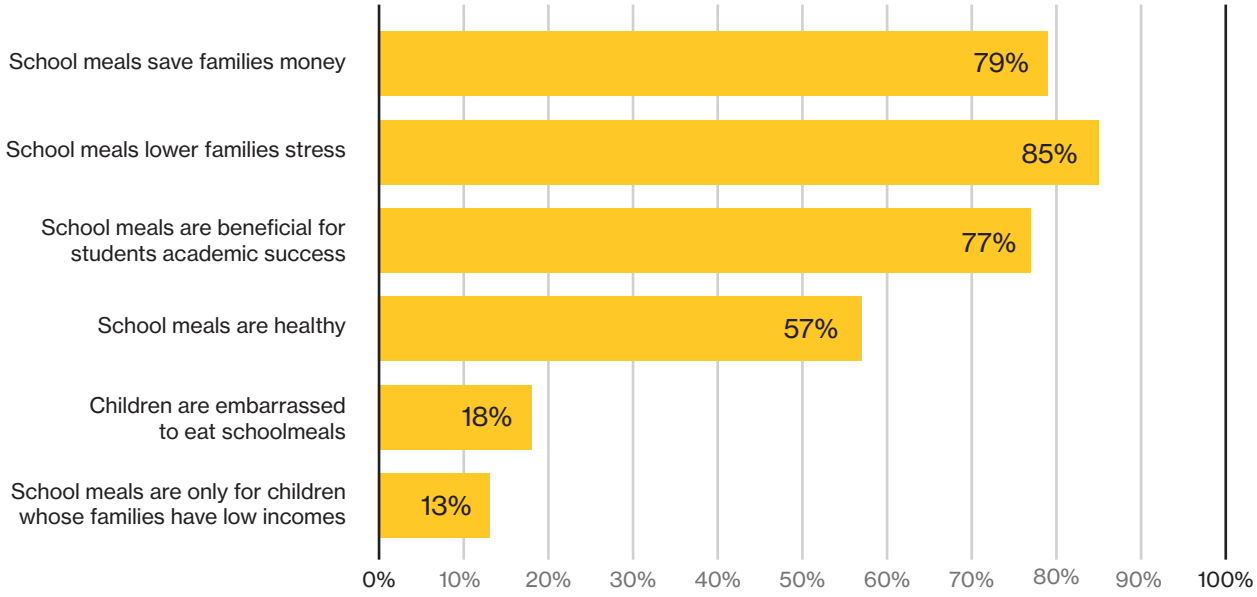


Figure 4. *Percent of respondents that agreed or strongly agreed with statements about school meals.*



"[School meals] save time and money esp. when you have to work 2 jobs and have 3 kids." – AZ Parent

"We cannot offer the variety and healthy option[s] available by packing a lunch that will be lunch bag stable." – AZ Parent

Figure 5. *Level of concern about the amount the federal government spends to provide free and reduced-price meals to students, by political affiliation.*

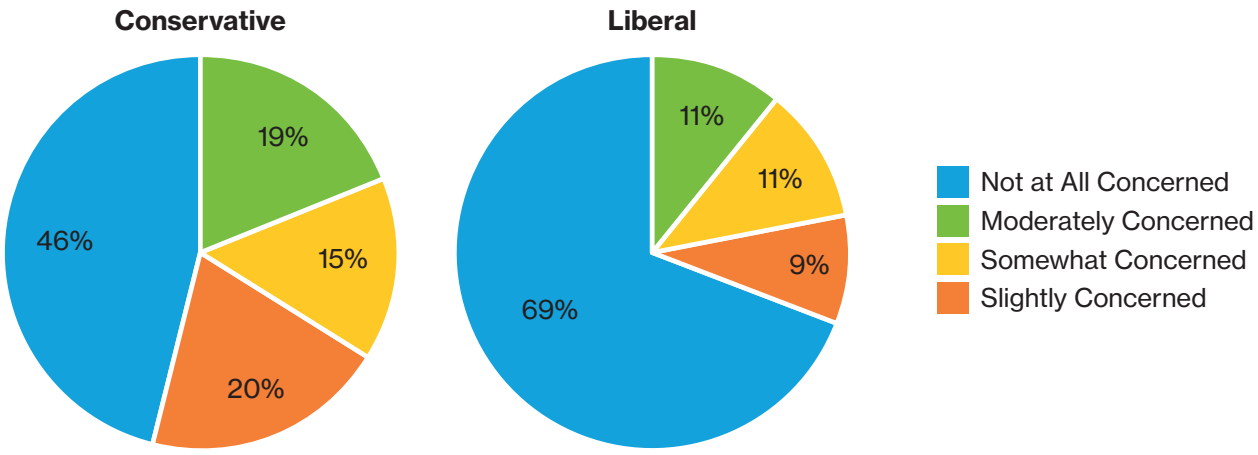


Figure 6 A-C. *The top 3 reasons for participation in school meals identified by parents with children participating in school meals.*

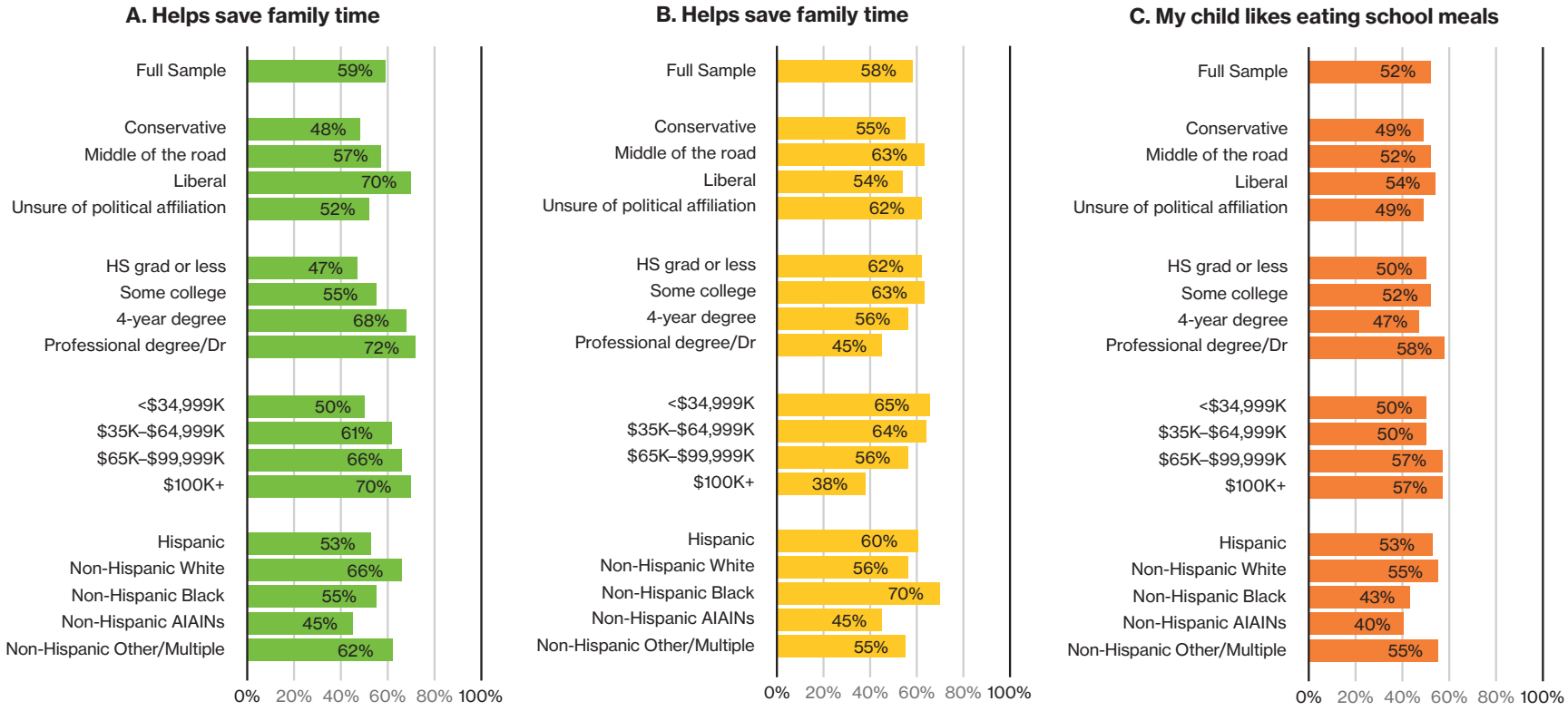
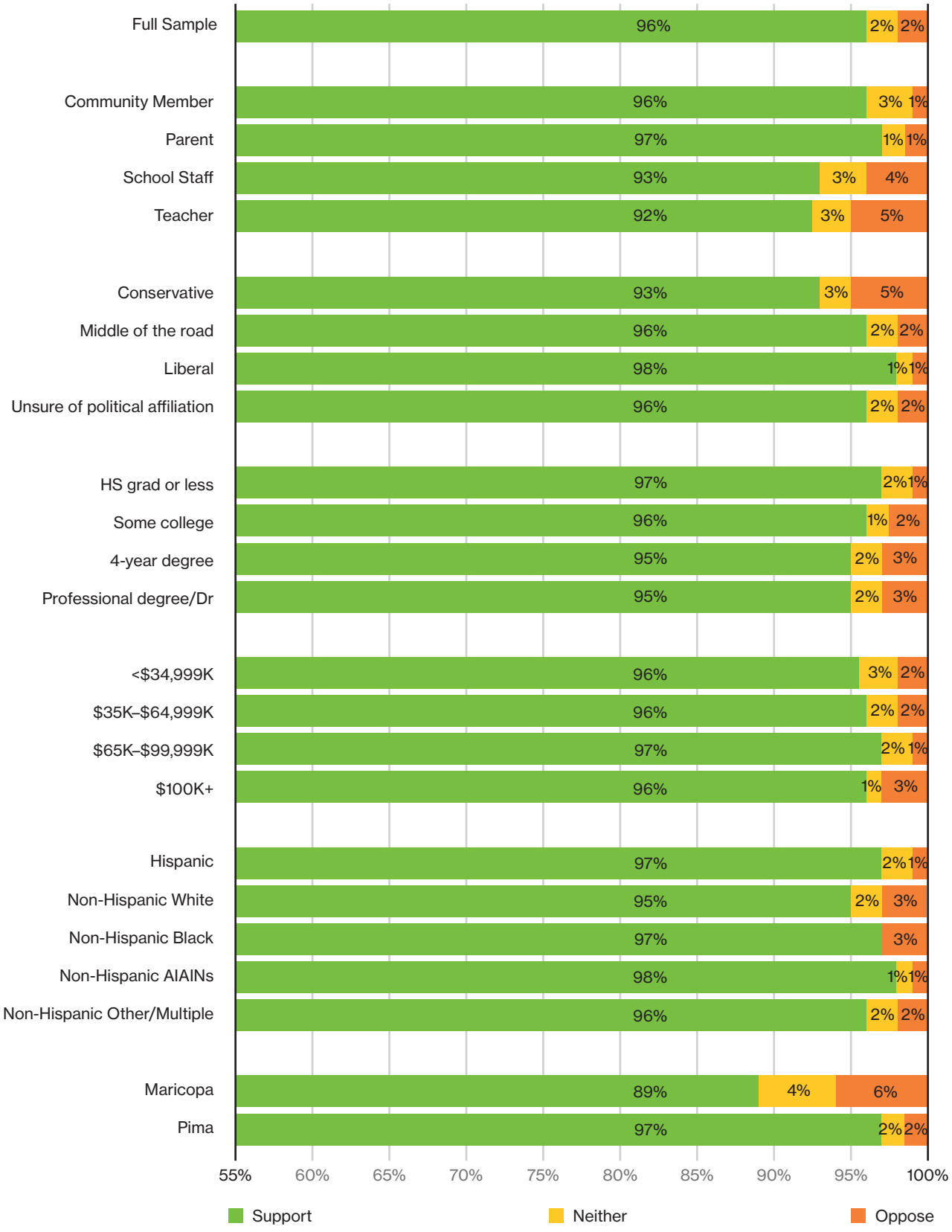


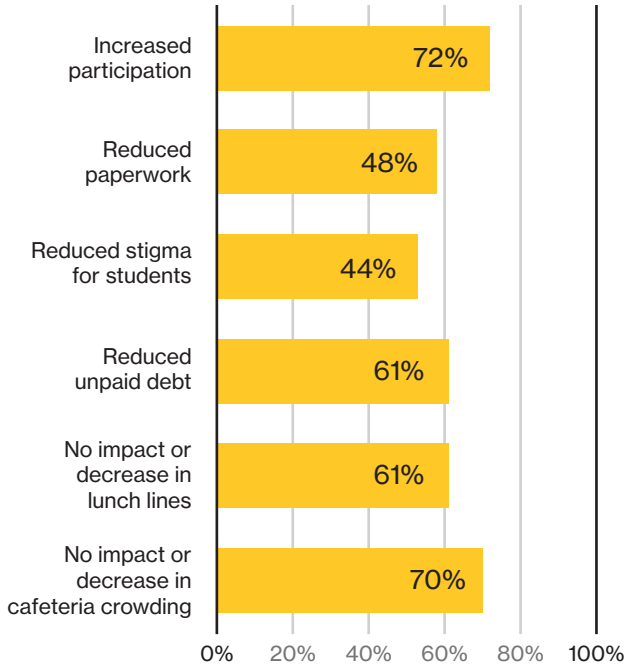
Figure 7. *Reported support for the policy that was put in place during the COVID-19 pandemic that allowed public schools to serve school meals at no charge to all students*



Food service professionals reported many benefits of providing school meals to all students at no charge during the COVID pandemic. The most commonly selected benefits included increased participation (72%), reduced paperwork (48%), reduced stigma for students (44%), and reduced unpaid meal debt (61%). The majority of food service professionals (61%) also reported not seeing any increase in lunch lines or crowding in the cafeteria (70%) (Figure 8).

Teachers were specifically asked to share their classroom experiences during the previous two school years when school meals were available at no charge to all students. A large majority (70%) reported seeing fewer hungry students in the classroom, and about one-third (29%) reported less disruptive behavior.

Figure 8. *School food service employees' reported impacts of serving meals to all students during the COVID-19 pandemic.*



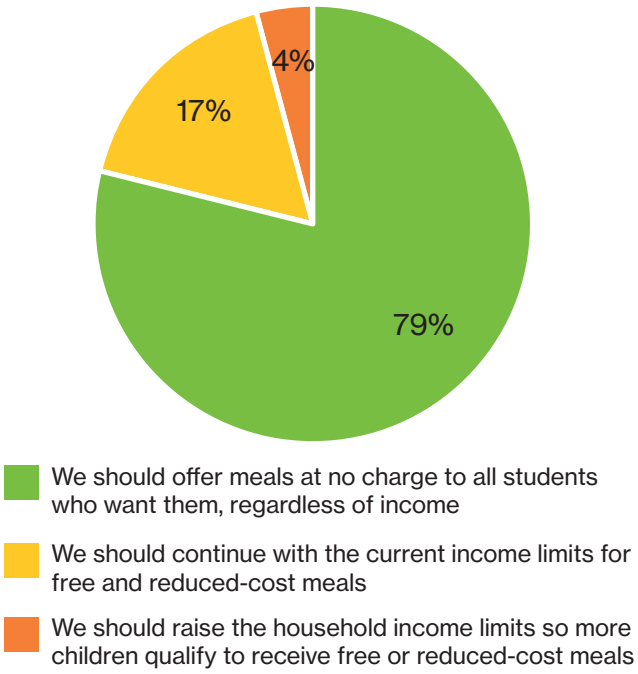
"I have heard from my own middle school students that they are embarrassed about receiving free lunches because that means they are poor. If food was provided for all children they will not hear in the lunch room about who paid for lunch and who didn't. Many of my students avoid eating at school because they do not want to have others hear it is free for them. They do not bring food to school since they do not have any at home. This means they get a handful of Takis from friends in the classroom. I cannot begin to explain the negative effects of a highly processed and red food dye covered food being the only thing that a child eats for 8 or 9 hours a day." – AZ Teacher

The Future of School Meals in Arizona

In response to a question asking respondents to select what they thought was the best approach to proving school meals in the future, the vast majority (79%) selected offering meals at no charge to all students who want them, regardless of income. The next most commonly selected option (17%) was changing eligibility criteria so more children can participate (Figure 9). The strong support for no-cost meals for all students as the best approach to offering school meals for all students in the future was consistent across all demographic groups, with minimal differences by income (support ranged between 73-79%), education (support ranged between 72-81%), and political affiliation (support ranged from 71% of respondents with conservative affiliations to 80% of those with liberal affiliations).

Similarly, 90% of respondents expressed support for passing legislation in Arizona to permanently offer school meals at no cost to all students, regardless of income (Figure 10). The support was strongest among parents and community members. This overwhelming support was consistent across political affiliations, with 88% of conservatives and 96% of liberals supporting the proposed legislation.

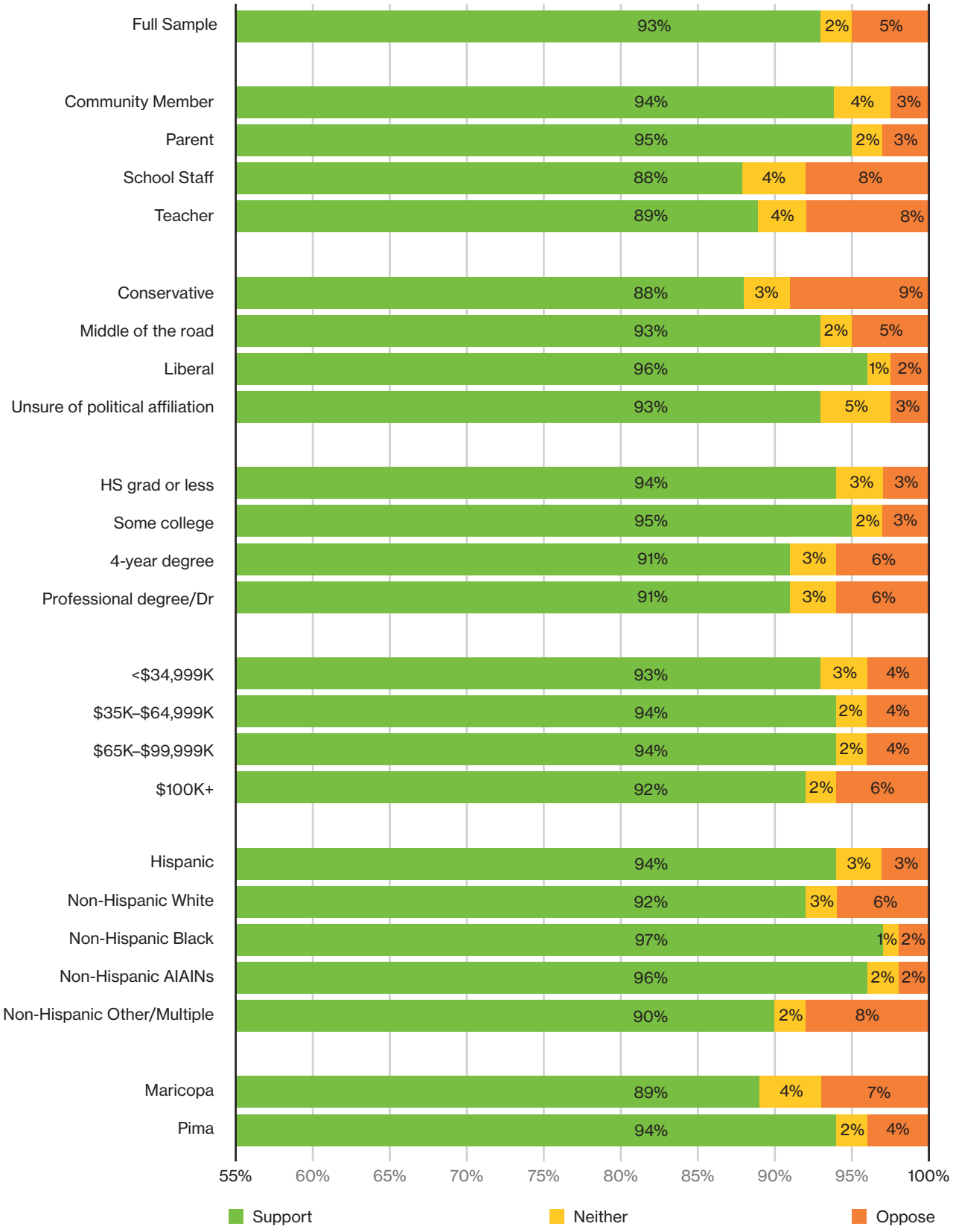
Figure 9. *Opinions about the best approach to provide school meals in the future.*



"With the price of groceries, gas and everything else... we both work full time to support 3 kids and one on the way. It's a huge relief to know my kids will be able to eat if we forget to give them money or make a lunch."

– AZ Parent

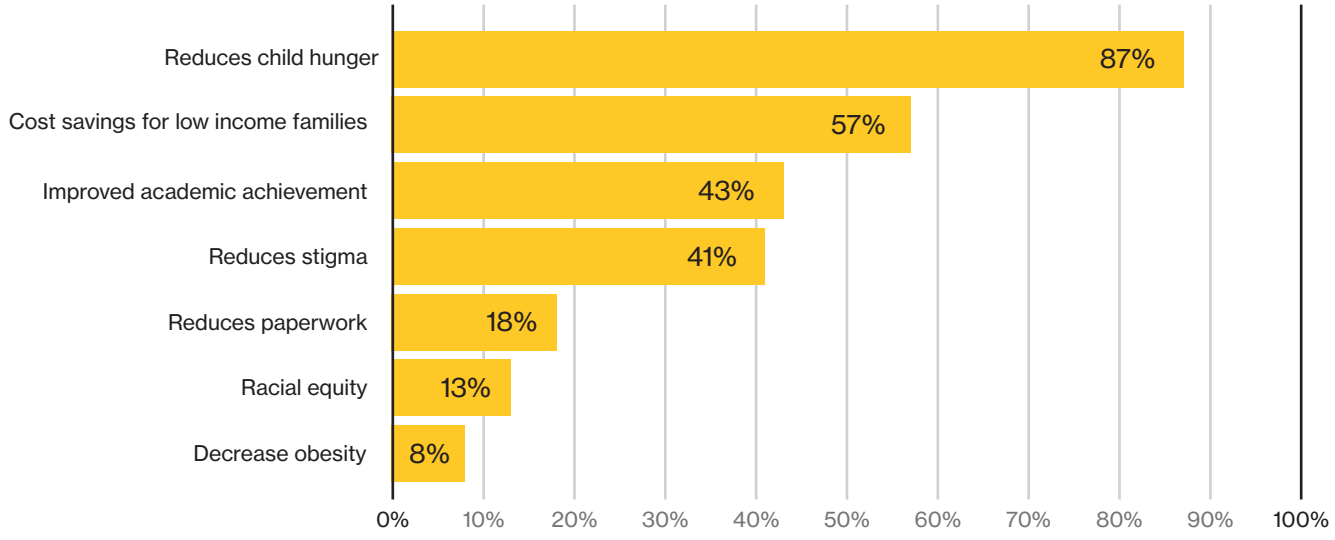
Figure 10. *Support for implementing HSM4A in Arizona by respondent type.*



Respondents identified many benefits of making school meals free for all children regardless of income. The most commonly identified benefit was reducing child hunger (selected by 87%), followed by reduced shame and stigma in the lunchroom (59%), cost savings for low-income families (57%), and improved academic achievement (43%). Fewer respondents identified racial equity (13%), decreased obesity (8%), or reduced paperwork burden (18%) as benefits (Figure 11). Interestingly, when respondents were asked "how much do you agree with the following statement about school meals? Children are embarrassed to eat school meals," most disagreed or strongly disagreed with the statement (Figure 4). Nonetheless, 41% identified reduced stigma as a key benefit to offering free meals to all students. This may be the result of the words used in each question with the word "stigma" resonating more with respondents

"With 4 kids in school, providing lunch is really hard for our family. My husband makes over the amount allowed but that doesn't mean providing lunch is easy for us. We have to have a bigger house for our bigger family and bigger bills. We still live paycheck to paycheck and not having to think about lunches this year was a big relief that we appreciate and really needed it [sic]." – AZ Parent

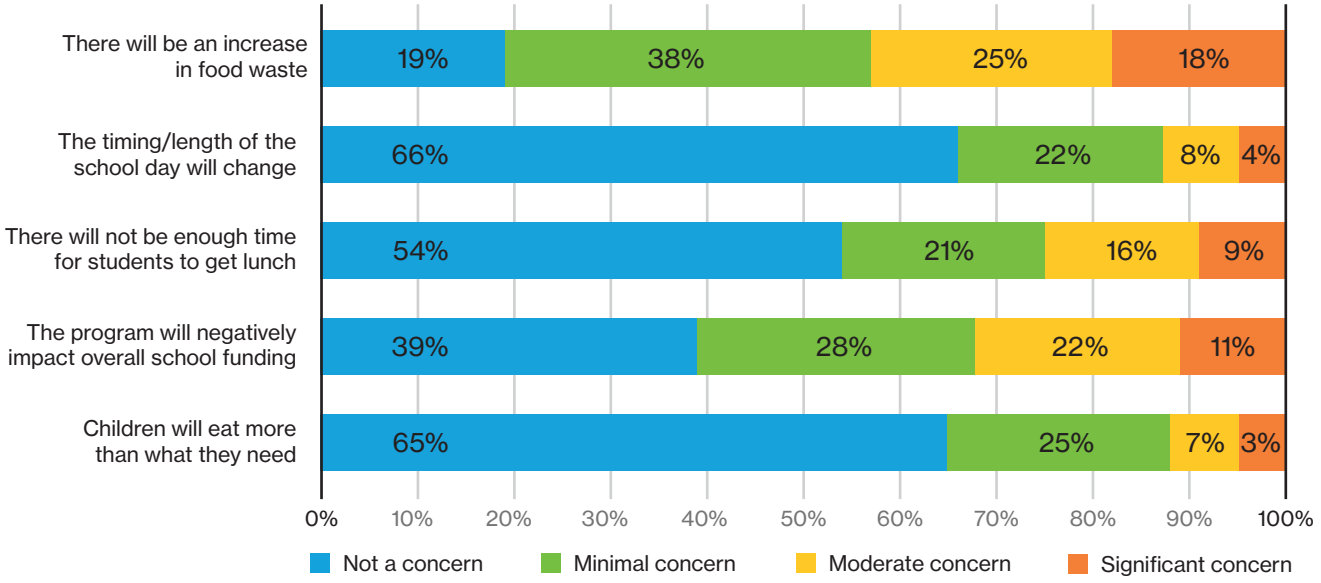
Figure 11. *Identified benefits of making school meals available to all students regardless of income.*



Although 90% of school administrators surveyed supported making school meals available at no charge to all students, some also identified concerns. Over one-third (39%) reported a negative impact on school funding as a significant to moderate concern (Figure 12). Other identified concerns include students not having enough time to eat (54%) and a potential increase in food waste (43%).

Concern over funding is likely due to the fact that FRPM applications are used to classify schools as low-income schools, which makes them eligible for additional funding for certain programs. If schools are no longer collecting FRPM applications, alternative methods for classifying school income will be needed.

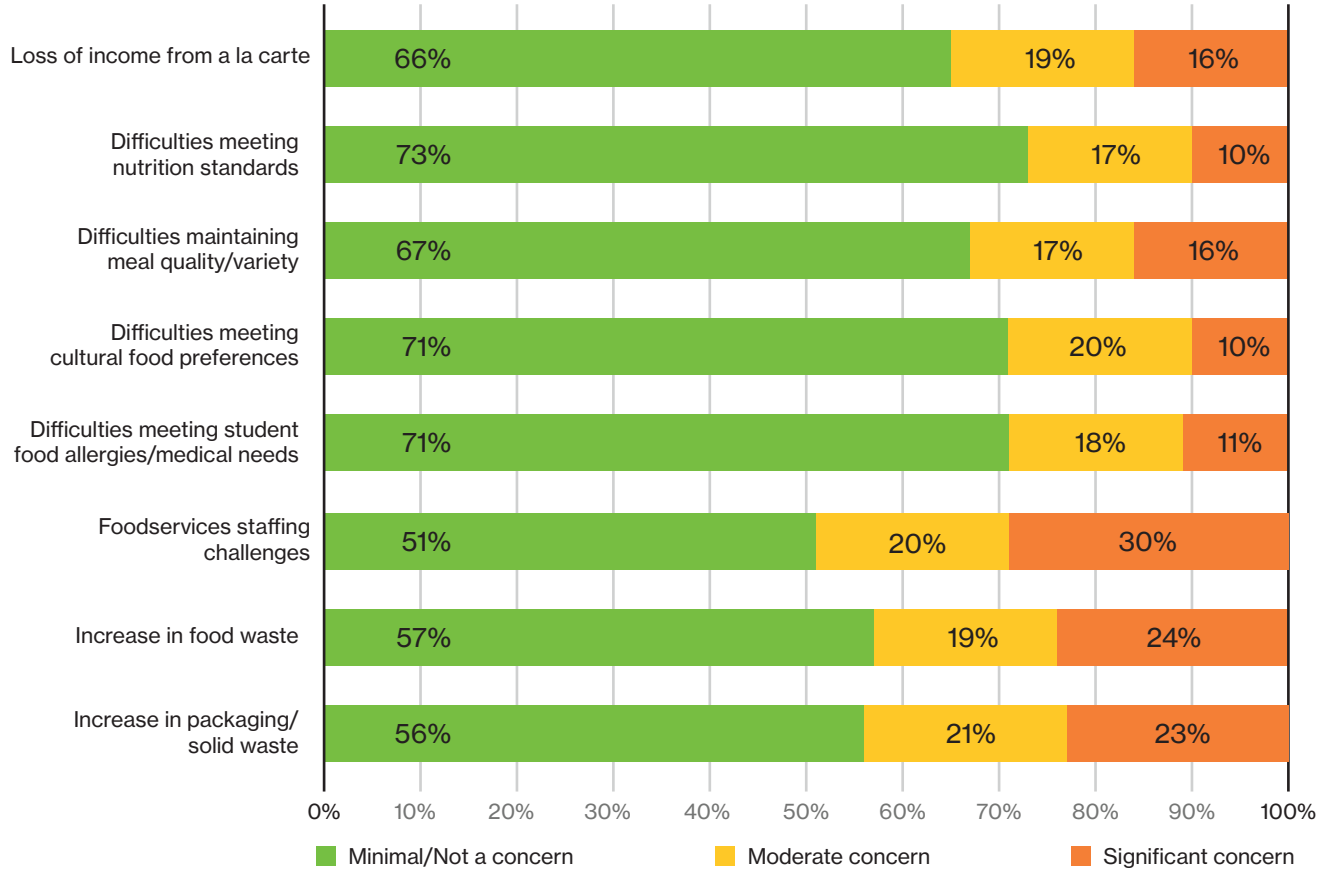
Figure 12. *School administrators' reported concerns about offering school meals to all students regardless of family income.*



When asked about specific concerns related to meal production if school meals were made available to all students at no charge in the future in Arizona, food service personnel did not report concerns related to loss of a la carte income (66% reported minimal or no concern) meeting nutrition regulations (73% reported minimal or no concerns), providing meal variety (67% reported minimal or no concern), or meeting student preferences and medical needs (71% reported minimal or no concerns) (Figure 13). Consistent with current national trends, school food service personnel did report concerns related to staffing challenges (51% reported moderate or significant concern) as well as food packing waste (44% moderate or significant concern).

Finally, teachers did not report significant concerns related to offering school meals at no charge to all students in Arizona in the future. Most of them (ranging from 72-80% for each question) did not foresee any impacts on future school funding, time available to students to eat, or length of the school day.

Figure 13. *Food service staff' reported concerns if school meals were offered to all students regardless of family income.*



Discussion

Overall, members of the school community who participated in our survey reported strong support for offering no cost school meals to all students in Arizona both during the COVID-19 pandemic and in the future. This support was consistent across different socioeconomic and demographic groups, including political affiliation. While our sample was large and included respondents from a wide variety of residence from different race/ethnic, economic and educational backgrounds, most respondents were residences of southern Arizona. Future examination of opinions on school meals should focus on Maricopa County and rural areas of the state.

Section 3: Qualitative Interviews with Food Service Directors in Arizona

Objective

Our primary goal was to understand the views and opinions of food service directors in Arizona on serving free meals to all students at no cost, both during the COVID-19 pandemic and in the future.

Methods

To examine perceptions of HSM4A among school food service directors in Arizona, we conducted 6 in-depth interviews (IDIs). To explore the perceptions of varied school communities, our sample included 3 urban public-school districts, 1 school district in a rural area, 1 district in the Navajo Nation, and 1 charter school in an urban area. We leveraged existing relationships our research team and AZFBN have with schools across the state to recruit the food service directors from the 6 schools. Interviews were conducted in June and July of 2022, a period when pandemic related waivers that allowed all students to eat meals at no cost and provided higher reimbursement rates for school meals were scheduled to end.

We adapted an interview guide developed by researchers at Merrimack College and the Nutrition Policy Institute (University of California Division of Agriculture and Natural Resources) to assess perceptions of stakeholders about offering free school meals to all students in California and Maine.[49,50] Domains assessed in interviews included current food operations, current challenges and facilitators, implementation strategies, student/parent perspectives on HSM4A, financial impacts, meal quality, and future needs. The final interview guide used is included in Appendix A2.

Interviews were conducted using Zoom videoconferencing software and lasted about 45 minutes each. An interviewer and a note-taker were present for all interviews with food service directors. Interviews were recorded and digitally transcribed; all transcriptions were reviewed and cleaned by a research team member to ensure accuracy. Interviews were then systematically analyzed using an iterative constant comparative methodology by two researchers trained in qualitative methods using Dedoose qualitative analysis software (SocioCultural Research Consultants LLC, 2021). Researchers developed an initial codebook containing codes that aligned with domains assessed in interviews. The two researchers then independently coded all transcripts and identified comments relative to the domains listed above, as well as any additional emergent themes they noticed. After all transcripts were independently coded, the researchers met to discuss and resolve any discrepancies and agree upon final themes.

Results

Themes and representative quotes from interviews are summarized in Table 3 and described below. Major themes related to COVID-19 challenges included food and paper supply, and staffing challenges. Noted facilitators that enabled districts to be successful in serving meals during COVID-19 included offering breakfast in the classroom, scratch cooking, storage space, and higher reimbursement rates. Themes related to identified benefits of HSM4A included reduced administration bur-

den, reduced stigma, improved child behaviors, and feeding more kids in need. Identified future needs included increased reimbursement and improved/additional equipment. Overall, food service directors reported high levels of stakeholder support for HSM4A and felt confident about their ability to provide high-quality meals to all students.

COVID-19 Related Challenges: The most commonly described challenge was food shortages; this challenge was noted by all respondents. However, they also pointed out that this challenge was not specifically related to offering universal free school meals and would have occurred regardless of changes in meal participation rates. Other described challenges included paper product shortages and staffing issues, such as having trouble filling vacancies, as well as staff calling in sick more frequently compared to pre-pandemic years.

COVID-19 Related Facilitators: Food service directors noted various facilitators that helped their district overcome the challenges they faced. Specific to helping navigate food supply challenges, directors cited the ability to scratch cook and store large amounts of foods as helpful. One food service director said *"Our staff is pretty good about being creative and scratch cooking... We have some skilled labor in the kitchen to where we can say — Well, you know what, we're just gonna make it now and hope that we have the raw material"* in cases in which ordered foods did not arrive. Both a food service director from a school district in the Navajo Nation and a food service director in an urban public school noted that providing breakfast in the classroom boosted breakfast participation numbers. In addition, food service directors from multiple schools specifically noted that the higher reimbursement rates received by the school during the 2021-2022 school year helped their programs financially. One director said, *"As we run summer program and get the SSP reimbursement rate, we've done really well financially this year."*

Identified Program Needs: We asked food service directors what resources and information would be most helpful for their district/school to support a successful HSM4A program. Half of the food service directors interviewed reported that they did not need any additional support. This may be because these districts had prior experience participating in the Community Eligibility Provision (CEP) and were therefore already used to offering free meals to all students.

Among the other three food service directors, one identified need was an increase in reimbursement rates. A food service director from a large urban district reported that they were concerned about the financial state of their food program once USDA waivers expired and reimbursement rates returned to their pre-pandemic levels, while labor and food costs are rising. Similarly, another food service director noted that it will take more work to balance food, labor, and utility costs to make sure their program remains financially solvent when the reimbursement rates return to pre-pandemic levels.

Another identified need was additional equipment. A food service director from a large urban district said, *"I think capital needs are a huge limitation right now for many of us... We have to make decisions on our menu that are impacted because by the type of equipment or the capacity we have in our kitchens. So that's definitely an area that I know is greatly needed, and not necessarily equipment. I mean carts are great... But I'm talking like reach ins, walk-ins, holding cabinets. So, you know, the actual nitty-gritty stuff to prepare the food, not necessarily how we're serving it. That's a huge challenge for a lot of districts because... especially when we're faced with food and labor costs, which are our biggest chunks of our budget. So, being hit with both of those at the same time doesn't leave anything left for capital investments. So, that's a huge area of concern."* On the other hand, a food service director for a district within the Navajo Nation reported that the state of

Arizona makes available needed equipment supports to schools: *"The programs are out there. You know the equipment grants, stuff like that, are out there. They have a ton of grants that are available out there to all school entities and I believe Arizona does a good job at, you know, marketing those programs and allowing districts to take advantage of them."*

Opinions about offering HSM4A: Overall, food service directors interviewed felt confident about their ability to provide free meals to all students and voiced support for HSM4A. A food service director from a district in the Navajo Nation said, *"I think universal free meals would be the best, most ultimate advantage for our students... in our State, and across the nation as well."*

Only one food service director raised a concern specifically related to offering HSM4A across the state, specifically about whether school food manufacturers and delivery services could keep up with heightened demand if all schools in Arizona were serving free meals to all students: *"I think that the biggest concern right now is manufacturers, and being able to produce at that level, and also... vendors [being] ready to take a shipment and ship it right back out to the districts. So, I think it just really comes back to the manufacturers, and whether they're able to keep up and keep up variety as well."*

Corresponding to the high levels of support food service directors themselves expressed for offering HSM4A, all those interviewed also reported high levels of school administrator and teacher support for expanded meal access. For example, a food service director in a rural district said, *"They all understand the importance of a hot nutritious meal on a daily basis."* Another said, *"Our district realizes that the opportunity for every child to have a meal is super important and beneficial."*

Discussion

Overall, food service directors in Arizona agreed that offering meals to all students at no cost was a benefit to their program and the broader school community. Directors reported that these views were supported by school stakeholders (principals, superintendents, teachers, etc). All respondents felt confident in their ability to provide meals to all students who want them should Arizona return to offering no cost meals to all students. Directors expressed concerns about supply chain and labor challenges, however these challenges are not due to serving meals to all students but rather are an ongoing results of the COVID-19 pandemic. Finally, directors did express a need for meal reimbursement rates to keep up with rising food and labor costs.

Table 3. *Summary of themes and quotes from qualitative interviews with food service directors in Arizona (n=6).*

Theme	Representative Quotes with School Location/Type in Parentheses
COVID-19-Related Challenges	
Food supply	*"The largest challenge we had was the shortage of food, being able to get our hands on school nutrition food... you know, 100% whole wheat and less sugar, those kind of products"* (Navajo Nation) *"Supply chain issues for sure was something that we navigated the entire year with products being discontinued, unavailable, delivery delays"* (urban #1) *"The meal quality went down because items we ordered were being subbed constantly. So, we weren't exactly sure what we were getting"* (urban #2)
Paper product supply	*"With all different restaurant entities using papers and to-go products, we had a hard time getting ahold of different products to get meals put into a box or into a bag to get to the families."* (Navajo Nation) *"The other thing that was challenging was* [obtaining] *paper products"* (rural)
Staffing	*"Staffing obviously continues to be a challenge. We typically have a 15% vacancy rate. We started last school year* [2021-22] *at about 20-25% vacancy rate."* (urban #1) *Our main issues were staffing and employees calling out sick a lot, not being able to hire staff"* (urban #2)
COVID-19-Related Facilitators	
Breakfast in the classroom	*"Allowing the students to eat in the classrooms definitely increased the participation for breakfast"* (Navajo Nation) *"I think breakfast in the classroom has really helped us in like financially staying afloat and doing pretty well."* (urban #3)
Storage space	*"We have a centralized warehouse, so we obviously had a huge advantage over a lot of districts that don't have that. We were able to maintain inventory levels that didn't put us in a position where we were scrambling to have food available."* (urban #1)
Scratch cooking	*"Our staff is pretty good about being creative and scratch cooking... We have some skilled labor in the kitchen to where we can say - Well, you know what, we're just gonna make it now and hope that we have the raw material."* (urban #3)
Higher reimbursement rates	*"With the higher reimbursement rate, that definitely allowed us to look at different avenues for our program and be able to invest in our program overall."* (Navajo Nation) *"The increased reimbursement rates definitely positively impacted our food service financially, as far as being able to maintain our expenses and revenue in a positive, carry forward balance, which was something that was very challenging prior to COVID. So this past year has definitely helped tremendously as far as the financial impacts being able to sustain our program, deal with increased labor costs, obviously increased food costs, and then address some of our much needed equipment needs in our kitchens. They have been very essential to our livelihood."* (urban #1)

Identified Benefits of HSM4A	
Reduced administration burden	*"[HSM4A] eliminates a lot of behind the scenes work and activities that need to go on in a daily basis. And time can be shifted to focus on other areas of increasing participation, marketing and promotion, training, and food quality, you name it. When we're not having to have staff processing applications, completing verification, collecting money, accounting money, and you know all these things that are eliminated when we offer free meals. I think that's a really important component because a lot of times we get bogged down in some of those administrative pieces."* (urban #1)
Feeding kids in need	*"[HSM4A] lessens the stress to the parents of like how am I going to pay for my child's school meals? It increases participation, it encourages students to eat. The guidelines that we have for the free and reduced eligibility... a lot of our families are caring for other [family] members, you know there's a lot that goes into it. Yes, they're technically paid according to the State but that doesn't mean that they have extra cash laying around where they can put $100-$150 a month for school meals. So that was a big benefit of allowing the free meals"* (charter) *"In the rural community where we are, the kids can't get to stores. I mean any store is gonna be 12 to 18 miles away. For our rural school districts, that's a huge deal that these kids get offered breakfast and lunch"* (rural)
Reduced stigma	*"At the older ages, oftentimes, unfortunately, there still could be that stigma, right? If more kids are participating... school lunch is the cool thing to do"* (urban #1) *"[Offering HSM4A reduces] stigma associated with it. I think it probably helps more so the kids that were free be more comfortable because everybody who's participating is treated the same way at the point of sale."* (urban #3)
Improved child behaviors	*"I hear from teachers that they're more attentive. They're more interactive."* (Navajo Nation) *"Behavior is a big key is that [teachers] notice that if kids eat the breakfast or lunch, some of the kids are better behaved. Then when they don't eat, we'll have disruptive behavior."* (charter)
Identified Program Needs	
Increased reimbursement	*"I'm definitely greatly concerned for our budget impact. When faced with continued increases in our labor costs for our district... that's a huge concern when coupled with increased food costs... So, I think that in combination with reduced reimbursement rates, yeah, it's a daunting pathway that we're headed down for sure financially."* (urban #1) *"[Operating with lower reimbursement rates] you really have got to keep your lunch cost down to like $1.10 for the whole meal. Because there's labor cost, the electricity, and everything else that you're doing. So that will take a little bit more work because for the past 2 years we haven't had to really worry too much about [finances] because it's been at such a high payout."* (rural)
Equipment	*"Capital needs are a huge limitation... We have to make decisions on our menu that are impacted by the type of equipment or the capacity we have in our kitchens... I'm talking like reach ins, walk-ins, holding cabinets... The actual nitty-gritty stuff to prepare the food. That's a huge challenge for a lot of districts... especially when we're faced with higher food and labor costs... So, being hit with both of those at the same time doesn't leave anything left for capital investments."* (urban #1) *"The equipment grants... are available out there to all school entities and I believe Arizona does a good job at, you know, marketing those programs and allowing districts to take advantage of them."* (Navajo Nation)

Opinions about Offering HSM4A	
Overall, districts felt confident about their ability to provide free meals to all students	*"I really don't see any hindrance from anybody being able to provide meals to all students at all."* (Navajo Nation) *"We welcome it. Bring it on. While we might have some challenges or some hurdles to jump over, I don't really have major concerns about serving more students."* (urban #3) "*The benefits outweigh any extra workload.*" (charter)
High levels of stakeholder support	*"Our superintendent is very, very adamant about food insecurity in Navajo Nation families, and in their households. So, he has our back 110%, our school board the same thing."* (Navajo Nation) *"The general consensus in our district is very supportive of [HSM4A]. [School stakeholders] are definitely upset to see [HSM4A] go away and have to face with negative meal accounts, meal charge policy, and all that.* (urban #1) *"Our district realizes that the opportunity for every child to have a meal is super important and beneficial."* (urban #3) *"The superintendent is very supportive and wants to make sure that we're providing as many meals as possible."* (urban #2)

Section 4: Non-NSLP Food Access Survey

The US Department of Agriculture's (USDA) National School Lunch Program (NSLP) and School Breakfast Program (SBP) have provided a key food safety net for Arizona families both before and during the COVID-19 pandemic, serving more than 600,000 Arizona students each day in school year 2018-2019. During the pandemic, the USDA granted schools the ability to serve meals to all students at no cost to the families. While these meals were available to all children 18 years or younger, it is not clear if children who attended schools that did not offer the NSLP and SBP prior to the pandemic had access to these free school meals.

Objective

To assess if schools that, according to data from the National Center for Education Statistics (NCES), did not participate in the NSLP or SBP in SY 2020-2021, offered no-cost meals to students during the pandemic, and if they were communicating with families of enrolled students about the availability of no-cost meals served by other nearby schools or organizations during the pandemic.

Methods

We developed a short survey, requiring no longer than 5 minutes, to ask 1) basic information about the school (school type and location); 2) if the school served meals to students prior to the pandemic and, if so, how those meals were funded; 3) if meals were served during COVID-19 related school closures and, if so, 3b) what types of meals were served, 3c) how meals were funded, and 3d) how meals were advertised. Finally, administrators were asked to 4) rate their level of agreement on five statements about the impact of free school meals on children, families, and the community during COVID-19 related school closures. The full survey can be found in Appendix A3.

A total of 701 schools in Arizona were identified as not participating in the NSLP, based on NCES data for SY 2020-2021. Of those, 312 (44.5%) were alternative, special education, or vocational schools; thus, they were not included in our sample. For the remaining 389 non-participating schools, internet searches were conducted to locate contact information for school administrators (e.g., principals or front office staff). An email address was located for 155 schools. The study team sent the survey via the Qualtrics platform to all 155 schools. Seven identified email addresses were invalid, leaving a final sample of 148 schools that received the survey. To encourage responses, 3 email reminders were sent approximately 7-10 days apart. Each survey invitation and reminder informed participants that they would be entered into a drawing to win one of 6 $20 gift cards upon survey completion. Completed surveys were received from 11 schools, for a response rate of 7%.

Results

Respondents were primarily school principals or vice-principals (n=7; 63.6%), followed by front office staff (3; 27.3%) and one (9.1%) food service director. Eight responses were from charter schools and 3 from public schools. Notably, even though these schools were listed as not participating in the NSLP

in SY 2020-2021 in the NCES database, 4 schools reported providing meals through the NSLP at some point prior to the pandemic.

Schools Serving Meals During COVID-19

Seven (63.3%) schools did not offer meals or food pick-ups during COVID-19 related school closures. The other 4 schools, which reported serving meals during COVID-19 related school closures, were asked questions about meal service, including how meals were funded, what types of meals were served, and how meals were advertised. Three of these schools utilized federal food program subsidies to pay for meals (including NSLP, Seamless Summer Option, Summer Food Service Program) and one worked with a local community organization and/or food bank to provide meals. All 4 schools served breakfast and lunch, 2 schools also served snacks, and 1 school provided bulk food distributions to families. Schools communicated with families about meals in a variety of ways, but the three most common methods were via social media, school websites, and onsite signage.

Awareness of Other Sites Offering Meals

Respondents from schools not offering meals during the COVID-19 period (n=7) were asked about their knowledge of other sites offering meals during school closures. Six indicated that they were aware of meals being served at other sites and 4 of them knew whether these sites were available to their students. Only two schools informed their student population about these meals via automated emails and text messages.

Opinions of Meals During Covid

The majority of respondents (n=7) either strongly agreed or somewhat agreed with the statement that meals during COVID-19 helped ensure food security for students, provided essential nutrition (n=8), helped reduce stress for parents (n=7), and provided financial assistance to parents (n=8). Reactions varied to the statement, “Free meal distribution to students during Covid-19 related school closures created extra burden on communities in the midst of supply chain problems.” Three neither agreed or disagreed with the statement, 3 strongly or somewhat agreed, and 5 strongly or somewhat disagreed. Finally, 6 respondents strongly or somewhat disagreed that serving meals during COVID-19 increased exposure to the virus for families and employees, 1 respondent strongly or somewhat agreed with this statement, and the remaining 4 neither agreed or disagreed with the statement.

Discussion

Given the small number of responses collected in this survey it is difficult to draw conclusions about access to free school meals during COVID-19 for students attending schools that do not traditionally offer school meals. A variety of responses to COVID-19 school closures were observed, with some schools offering meals, some schools not offering meals but sharing information about nearby locations that were offering meals, and some schools doing neither. Ultimately, to better understand this question additional research is needed to gather information from more schools that do not participate in NSLP and SBP on a regular basis.

Section 5: Cost Analysis

Objective

The goal of this section was to use prior school meal participation data together with estimates of increased meal participation when school meals become available to all students (derived from prior research), to estimate different cost scenarios if the State of Arizona were to expand access to school meals.

Background

Current Funding Methods for School Meals

Under current United States Department of Agriculture (USDA) guidelines, Arizona schools participating in the National School Lunch Program (NSLP) or the School Breakfast Program (SBP) are reimbursed for the meals they serve students through both (1) federal dollars and (2) co-pays from student families. Reimbursement amounts are based on a **3-tiered system** (described in Table 4), where the level of reimbursement from the USDA decreases as the student's family income-based co-pay (i.e., the amount that schools charge families for meals) increases. In this system, families submit applications where they report their annual income to the school. Based on these applications, students are placed into one of 3 categories (those who qualify for free meals, reduced-priced meals, or paid meals). Families that do not submit applications are automatically placed into the paid category. In this system, schools need to (1) track student eligibility category every time they serve a meal, (2) collect family co-pays, and, when needed, (3) collect meal debt incurred by students.

The **Community Eligibility Provision (CEP)** was introduced as part of the Healthy Hunger Free Kids

Table 4. *Eligibility criteria, family co-pays, and USDA reimbursement by school meal eligibility category.*

Eligibility Category	Eligibility Criteria	Family Co-pay – Breakfast	Family Co-pay – Lunch	USDA Reimbursement – Breakfast[4]	USDA Reimbursement – Lunch[4]
Free Meals	≤130% FPL[1,2]	$0	$0	$2.47	$4.34
Reduced-Price Meals	131%–185% FPL[3]	$0.30/meal	$0.40/meal	$2.14	$3.94
Paid Meals	>185% FPL	Set by schools with guidance from USDA Paid Lunch Equity Tool		$0.50	$0.78

1. FPL= federal poverty level. See 2022 Poverty Guidelines, Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines
2. $2,379/month or $28,548/year for a family of 3
3. $2,380–$3,386/month or $28,549–$40,626/year for a family of 3
4. Values are for the most recent year published on the USDA website (SY2022-2023), which includes a pandemic-related increase in per-meal reimbursement of $0.15 for breakfast and $0.40 for lunch. For lunch, the rate for schools with <60% free or reduced-price meals (FRPM) and >60% FRPM were averaged to get one reimbursement value. Similarly, for breakfast, the values for non-severe need and severe need schools were averaged.

Act (HHFKA) as an alternative school meal funding model to the 3-tiered model. The goal of CEP is to increase school meal participation within qualifying low-income schools by allowing all children to receive meals for free, regardless of family income. Schools are reimbursed for meals served based on their Identified Student Percentage (ISP), which represents the proportion of students who are categorically eligible for free school meals due to their families' enrollment in other programs such as the Supplemental Nutrition Assistance Program or The Temporary Assistance for Needy Families program. In this funding model, schools are not required to collect annual income applications from families or track student eligibility at each meal. Instead, the ISP is multiplied by a factor of 1.6 and that percent of meals is reimbursed at the free rate and the remaining meals are reimbursed at the lower paid rate. For example, if a school has an ISP of 50%, 80% of total meals served are reimbursed at the free rate (because 50 x 1.6 = 80) and the remaining 20% of meals served are reimbursed at the paid rate. Under current USDA guidelines, schools with an ISP of 40% or greater are eligible to participate in CEP but eligible schools are not required to participate in the program.

Cost calculation methods

Cost Scenario Descriptions

For this project, we analyzed four different cost scenarios that focus on different funding pathways to estimate the costs and benefits of increased access to school meals in Arizona. In the first two scenarios, we estimated the cost to the state of Arizona if state policies were adopted to modify the current 3-tiered system. Specifically, we examined costs to the state if 1) the state offered free meals to all students at no charge (i.e., HSM4A) and 2) the state covered the co-pay for all reduced-price meals. Scenario 3 was centered around the Community Eligibility Provision (CEP) and estimated the amount of additional federal reimbursement that would come into the state if all eligible schools (i.e., schools with an ISP of 40% or greater) were to participate in CEP. Finally, in Scenario 4, we looked at the cost to provide school meals to most students in Arizona, specifically those attending schools with an ISP of 25% or greater, as opposed to students from all schools as in scenario 1. Because HSM4A policies typically result in increased participation in school meals,[17–19] all 4 scenarios account for different levels of projected increase in participation, calculated from previous studies.[36,41,51,52]

In scenarios 1 and 2 schools would continue to collect free and reduced-price meal applications to place students into the current meal eligibility categories used under the 3-tried system. This would allow schools to continue to receive reimbursement from the USDA based on income eligibility category to maximize federal support of school meals and decrease costs to the state. In scenario 3, CEP participating schools would not need to collect meal applications. Finally, in scenario 4, since the state is covering meal co-pays for students who qualify for reduced-price or paid meals in schools with an ISP of 25%-39.9%, meal applications would be collected to facilitate state reimbursement calculations.

Scenario 1: All students would have access to meals at no cost. The state would cover the co-pays for reduced-price and full-price meals that would otherwise have been paid by families in the current 3-tiered reimbursement system. Because co-pays for paid meals can vary across schools, we used the difference between (a) the federal reimbursement rate for free breakfast and lunch and (b) the federal reimbursement rate for paid breakfast and lunch as a proxy for the paid family co-pay amount in our analyses. This corresponds to the per-meal amount that the state would cover under this scenario. For example, the federal reimbursement rate for free breakfast is $2.47 and the federal reimbursement rate for paid breakfast is $0.50. Therefore, the cost to the

state was estimated to be $1.97 (calculated as $2.47-$0.50) per breakfast served to a student in the paid category.

Scenario 2: The state would cover the co-pays that would otherwise be paid by families within the reduced-price category. Students who do not qualify for free or reduced-price meals would continue to pay the paid meal co-pay set by schools.

Scenario 3: All CEP eligible schools are required to participate in CEP with an opt out option. In this scenario, schools with an ISP of 40% or greater would be automatically enrolled in CEP but will have the option to opt out of the program if they did not find it financially viable (however, our calculations do not account for schools opting out of the program). There is no expected additional cost to the state in this scenario, as the amount estimated is the additional federal funds that would come to Arizona schools if all CEP-eligible schools in Arizona (schools with an ISP of 40 or greater) were to participate in CEP. These additional funds are calculated as the difference between the amount of federal reimbursement from the current 3-tiered system and the amount of federal reimbursement these schools would collect if they participated in CEP.

Scenario 4: Schools with ISP of 25% or greater will provide free meals to all enrolled students. In this final scenario, we looked at the cost to provide school meals to most students in Arizona, specifically those attending schools with an ISP of 25% or greater, as opposed to students from all schools as in scenario 1. The highest-income schools, defined as those with the lowest ISPs (i.e., less than 25%) would not be required to provide no-cost meals to their students. In this scenario, the state would pay the reduced-price and paid meal co-pays that otherwise would be paid by families for schools with an ISP of 25% or greater (that are not participating in CEP), while there would be no change to the reimbursement system for schools with an ISP lower than 25%.

Data Sources

School meal participation data were obtained through a public records request to the Arizona Department of Education (ADE), the agency that manages school meals in Arizona, for SY 2018-19 for all schools in Arizona. We selected this school year because it was the most recent full school year not impacted by pandemic-related school closures and supply chain disruptions, both of which greatly affected school meal participation. The data received from ADE included the total number of meals served each month by meal type (breakfast and lunch) and meal eligibility status (free, reduced, or paid) for each school in the state. The data also included the number of students eligible for free, reduced, and paid meals at each school, school CEP participation status, ISP, and classification (i.e., whether the school was public, charter, or another type of school). Additionally, ADE provided a dataset with all district-level cost and revenue information for SY 2018-19. Finally, relevant school demographic variables (race/ethnicity, urbanicity, and total student enrollment) for all schools in Arizona were obtained from the publicly available National Center for Education Statistics (NCES)[53] database for SY 2018-19.

Data Preparation and Cleaning Steps

We merged all three datasets (school-level meal participation, district-level costs/revenue, and NCES data) into one data file using Stata statistical software (Statacorp LLC, version 15). A total of 234 unmatched schools were dropped in this process. Sixty-four percent of dropped schools were non-traditional schools (such as boarding school, detention centers, etc), leaving a total of 1581 public and charter schools in the final sample used for these cost estimates. All variables were labeled and reviewed to ensure correct coding prior to analysis. For urbanicity-related analyses, we collapsed 3 NCES rural categories into one (fringe, distant, and remote) to create a dichotomous variable (i.e., rural vs. urban).

Cost Calculation Steps

Scenario 1: Healthy School Meals for All

In this first scenario, we used the following steps to calculate the cost to the state to provide no-cost meals to all students in Arizona (i.e., HSM4A), by covering the co-pays for reduced-price and paid meal categories that would otherwise have been paid by families under the current 3-tiered reimbursement system. CEP schools were excluded from this analysis because these schools are already providing meals to all students at no-cost and those meals are reimbursed federally using the CEP model.

Step 1: The USDA provides two different reimbursement rates for lunch in each eligibility category. One rate for schools with greater than 60% FRPM eligibility and another rate for schools with less than 60% FRPM eligibility. For this analysis, those two rates were averaged to generate one USDA reimbursement rate for each eligibility category. We used the same method to calculate the average federal reimbursement rate for school breakfasts, averaging the USDA reimbursement rates for severe need and non-severe need schools.[54]

Step 2: Using the average reimbursement rate calculated in step 1, we calculated a per meal cost that the state would pay to schools to offset both the reduced-priced and paid meal co-pays no longer being paid by families.

Step 3: Once federal reimbursement values were calculated, we calculated the total number of meals served by meal type (breakfast and lunch) and eligibility category (free, reduced, and paid) for all schools not participating in CEP in Arizona using meals data provided by ADE.

Step 4: Next, we estimated increases in the number of school meals that would be served when meals become available to all students and added the additional meals to the meals already being served. Research shows that when school meals are available to all students at no-cost, participation rates go up across all eligibility categories.[36,51,52] To account for these predicted increases, we calculated estimated values for each meal eligibility category based on prior research studies that examined changes in participation when school meal access was expanded.[36,51,52] We present estimated costs separately based on different estimated participation increases.

Step 5: Next, we multiplied the total number of meals estimated to be served in the reduced-price and paid meal categories from step 4 (this includes meals that were already being served plus the estimated increases in participation) by the per-meal costs to the state calculated in step 2. Meals served in the free category were not considered in costs to the state estimates as those meals would be fully reimbursed by the USDA.

Step 6: Finally, we also calculated the cost to the state to provide no-cost meals to all students if the state also required all schools who are eligible for CEP (i.e. have an ISP of 40% or greater) were required to participate in the program. We did this by not including the cost of the meals served in schools that are eligible but currently non-participating in CEP, because if they were required to participate, the meals would be federally reimbursed.

Scenario 2: State Covers Co-pays for Reduced-price Meals

In this scenario, the state pays the reduced-price meal co-pay that otherwise would be paid by families. To calculate costs to the state, we carried out the same steps described in Scenario 1, but only estimated state costs and increase in participation for the reduced-price meal category.

In this scenario, we calculated three cost estimates based on three different estimated increases in par-

ticipation. The first two estimates are identical to those used in Scenario 1. The third estimate relies on a study that specifically examined the change in participation when families no longer had to pay the reduced-price co-pay rather than when all students gained access to free school meals as in the other two estimates.[41]

For both Scenario 1 and 2, we also explored how these costs would be distributed across different subsets of schools (e.g., rural vs. urban areas, charter vs. public schools). A summary of these results can be found in Appendix B2.

Scenario 3: Require all schools with ISP >40% to participate in CEP

The third scenario estimated the difference in federal reimbursement flowing into the state of Arizona if all schools that are eligible for CEP (ISP equal to or greater than 40%) participated in the program. We followed 6 distinct steps to estimate (i) the current reimbursement levels using the 3-tiered model, (ii) the reimbursement levels if the CEP funding mechanism was used, and (iii) the difference between these levels. This analysis was limited to schools with an ISP of 40% or greater in Arizona that were not already participating in CEP (n=412).

Step 1: The total federal reimbursement received by each school was calculated using the standard 3-tiered reimbursement mechanism by multiplying total meals served in each meal eligibility category by the average reimbursement rates calculated in Step 2 in Scenario 1.

Step 2: We then applied the same estimated increase in participation used in Step 4 in Scenarios 1 and 2 to estimate the number of served meals once students have access to no-cost meals.

Step 3: For each school, we calculated the percent of meals that would be reimbursed at the free rate by multiplying their ISP in SY 2018-2019 by 1.6, the multiplier used in the CEP funding model.

Step 4: We applied the percentage calculated in Step 3 to the total anticipated meals served calculated in Step 2 to estimate the total expected number of meals that would be reimbursed in both reimbursement categories (paid and free).

Step 5: These estimated total meals in each reimbursement category were then multiplied by the reimbursement rate for the corresponding category to estimate the total federal reimbursement amount using the CEP funding model.

Step 6: To identify which schools might receive higher or lower reimbursement rates than they currently receive, we compared reimbursement for each school under the current 3-tiered system and reimbursement using the CEP model (accounting for the estimated increase in participation).

Step 7: Finally, estimated school-level reimbursement amounts were aggregated to create one state-level value. This value represents the amount of federal reimbursement dollars that would flow into the state above what is already coming from the standard 3-tiered system.

Scenario 4: Healthy School Meals for Most

In scenario 4, we looked at the cost to provide school meals to most students in Arizona, specifically those attending schools with an ISP of 25% or greater, as opposed to students from all schools as in scenario 1. Therefore, the steps used to calculate scenario 4 mirror those carried out in scenario 1. The only adjustment is that meals served in schools with an ISP less than 25% were excluded from the estimation.

Detailed tables showing calculation for scenarios 1-4 can be found in Appendix B1.

Results

Scenario 1: Healthy School Meals for All

If Arizona were to support Healthy School Meals for All (HSM4A), we estimate an increase in participation across all three eligibility categories, with the largest increase predicted among students who were previously not eligible for FRPM. The meals within this category are expected to increase from 18% to 22% of all breakfast meals served and from 27% to 29% of all lunch meals served. Overall, we estimate that between 16.1-18 million additional meals will be served in breakfast and lunch over a full SY. A summary of the two estimated costs to the state of Arizona using two different estimated participation increases is provided in Table 5. Total anticipated costs per school year are $111,007,029 using Estimate 1 and $129,991,707 using Estimate 2 (average = $120,499,368). Table 5 also presents estimates of the additional number of breakfast and lunch meals projected to be served to students in Arizona.

In states where HSM4A legislation has already been passed, in addition to offering free meals to all students at no cost, states also require that schools that are eligible for CEP participate in the program. This requirement would result in an overall lower financial commitment by the state to pay for meals, as meals offered to all students at no cost under the CEP model would be federally funded. If Arizona were to simultaneously implement HSM4A and require schools with an ISP of 40% or greater to participate in CEP, the overall cost to the state would be between $93,870,400 and $110,046,709 (average $101,958,554) annually, compared to the $111,007,029 and $129,991,707 reported in table 5 below.

A summary of these costs for different subsets of schools, for instance in rural versus urban areas and public versus charter schools, can be found in Appendix B2.

Table 5. *Scenario 1: Healthy School Meals for All (HSM4A).*[1]

	Additional Meals Served to All Students			Total Meals Served to All Students[2]			Annual Cost for All Meals Served in the Reduced-price & Paid Categories[3]		
	Breakfast	Lunch	Total	Breakfast	Lunch	Total	Breakfast	Lunch	Total
Estimate 1[4]	6,795,651	9,359,131	**16,154,782**	55,278,257	106,258,986	**161,537,243**	$22,816,773	$107,174,934	**$129,991,707**
Estimate 2[5,6]	4,290,116	13,713,512	**18,003,627**	52,772,722	110,613,367	**163,386,088**	$18,317,209	$92,689,820	**$111,007,029**

Assumptions and notes:

1. Participation estimates do not consider schools that participate in the Community Eligibility Provision (CEP) as those schools are already able to offer free school meals to all their students and are federally reimbursed for those meals using a different funding model.
2. Includes projected additional meals and current meal participation levels in all meal categories.
3. Projected costs include the cost of co-pays for all meals served in schools, including projected additional meals.
4. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/
5. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
6. Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=27

Scenario 2: State Covers Co-pays for Reduced-price Meals

In this scenario, three estimated costs that take into account the expected participation increases are provided in Table 6 and range between $4,414,351 to $4,645,000 per school year, with the average of three estimates being $4,465,416. We also present estimates for the additional number of breakfast and lunch meals projected to be served to students who qualify for reduced-price meals. Everything else being equal, the meals within this category are expected to increase from 7.9% to 8.6% of all breakfast meals served and from 10% to 11% of all lunch meals served.

Table 6. *Scenario 2: Estimates of cost and number of projected additional meals served per year if Arizona were to provide free school meals to children in the reduced-price eligibility category.*[1]

	Additional Meals Served to Students in the Reduced-price Category			Total Meals Served to Students in the Reduced-Price Category[2]			Annual Cost for All Meals Served in the Reduced-Price Category[3]		
	Breakfast	Lunch	Total	Breakfast	Lunch	Total	Breakfast	Lunch	Total
Estimate 1[4]	497,979	851,187	**1,349,166**	3,710,747	8,252,816	**11,963,563**	$1,113,224	$3,301,127	**$4,414,351**
Estimate 2[5,6]	674,681	1,295,285	**1,969,966**	3,887,449	8,696,914	**12,584,363**	$1,166,235	$3,478,766	**$4,645,000**
Estimate 3[7]	289,149	814,179	**1,103,328**	3,501,917	8,215,808	**11,717,725**	$1,050,575	$3,286,323	**$4,336,898**

Assumptions and notes:

1. Participation estimates do not consider schools that participate in the Community Eligibility Provision (CEP) as those schools are already able to offer free school meals to all of their students and are federally reimbursed for those meals using a different funding model.
2. Includes projected additional meals and current meal participation levels in the reduce-priced category.
3. Projected costs include the cost of co-pays for all meals served in the reduced-price meal category, including projected additional meals.
4. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/
5. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
6. Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277.
7. Estimated increases in participation were informed by a USGAO report that examined 5 states and 35 districts that removed the reduced-price-category. Brown, K. 2010. https://www.gao.gov/products/gao-09-584

Scenario 3: Require all schools with ISP >40% to participate in CEP

In this scenario, we explored the additional reimbursement from the federal government that would come to Arizona schools if all schools with ISP of 40% or higher were automatically enrolled in CEP. Under this scenario, we expect that schools would have the option to opt out of CEP if they would stand to lose money by switching funding models; our estimates do not take opt-out rates into account.

We estimate that schools in Arizona that are eligible but do not participate in CEP would receive an additional $7.5-$9.8 million in federal reimbursement for breakfast and $15.8-$29.4 million for lunch by participating in CEP (Table 7). When considered in aggregate at the state level, more federal dollars would flow in if all schools that were eligible to participate in CEP participated. However, some individual schools would receive lower levels of fed-

eral reimbursement compared to what they receive using the 3-tiered system (approximately 7-19% of schools). Data distributions show that the schools most likely to receive comparatively less reimbursement using the CEP model are those with ISPs closer to the 40% eligibility threshold. The average ISP of schools predicted to receive comparatively less reimbursement was 44%, while schools predicted to receive more reimbursement had an average ISP of 55%.

Table 7. *Scenario 3: Summary of costs if schools with an ISP greater than 40% were required to participate in CEP.*

		Estimate 1[1]		Estimate 2[2,3]	
	Estimated Annual Reimbursement using 3-Tiered Model[4]	Estimated Annual Reimbursement using CEP Model[5,6]	Difference in Reimbursement between the Two Models (CEP - 3 Tier Model)	Estimated Annual Reimbursement using CEP Model[5,6]	Difference in Reimbursement between the Two Models (CEP - 3 Tier Model)
Free Breakfast	$36,310,532	$47,930,904	$11,620,372	$45,808,500	$9,497,968
Red Breakfast	$2,918,972	$0	($2,918,972)	$0	($2,918,972)
Paid Breakfast	$1,131,477	$2,235,315	$1,103,838	$2,128,000	$996,524
Total Breakfast	**$40,360,981**	**$50,166,219**	**$9,805,238**	**$47,936,500**	**$7,575,519**
Free Lunch	$96,952,284	$118,486,158	$21,533,874	$131,562,911	$34,610,627
Red Lunch	$8,269,075	$0	($8,269,075)	$0	($8,269,075)
Paid Lunch	$2,362,227	$4,997,338	$2,635,111	$5,518,274	$3,156,047
Total Lunch	**$107,583,586**	**$123,483,496**	**$15,899,911**	**$137,081,184**	**$29,497,599**

Assumptions and notes:

1. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/
2. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
3. Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277
4. This value was generated using the total number of meals served in schools with an ISP>40% that are not participating in CEP in SY18-19 and the most recent USDA reimbursement rates from SY22-23. SY22-23 reimbursement rates include a pandemic-related increase in per-meal reimbursement of $0.15 for breakfast and $0.40 for lunch. For lunch, the rate for schools with <60% free or reduced-price meals (FRPM) and >60% FRPM were averaged to get one reimbursement value. Similarly, for breakfast, the non-severe need and the severe need were averaged.
5. The CEP funding model multiplies the schools ISP (as reported in SY18-19) by 1.6 to get the percent of meals reimbursed for free.
6. This value is calculated using the percentage of meals reimbursed for free multiped by the total meals served in that school (assuming an increase in participation using the models above) to generate the total meals reimbursed at the free rate. Those meals were then multiplied by the current reimbursement rate for free meals. Similar steps were carried out for paid meals.

Scenario 4: Healthy School Meals for Most

If Arizona were to offer healthy school meals for most (i.e., in all schools with an ISP of 25% or greater), we estimate an additional 3.2 to 5 million meals would be served at breakfast and an additional 3.9 to 8.9 million meals served at lunch. Total anticipated costs to the state per school year are $47,723,837 using Estimate 1 and $56,118,872 using Estimate 2 (average = $51,921,355). A summary of the two estimated costs to the state of Arizona using the two different projected increases in participation is provided in Table 8. This table also presents estimates of the additional number of breakfast and lunch meals projected to be served to students in Arizona under scenario 4.

Similar to scenario 1, we also examined the cost to provide healthy school meals for most if Arizona also requires schools that are eligible for CEP to participate in the program. This requirement would result in an overall lower financial commitment by the state to pay for meals, as meals offered to all students at no cost under the CEP model would be federally funded. If Arizona were to simultaneously implement healthy school meals for most and require schools with an ISP of 40% or greater to participate in CEP, the overall cost to the state would be between $37,995,352 and $44,425,823 (average $41,210,587) annually, compared to the $47,723,837 and $56,118,872 reported in table 8 below.

Limitations

There are limitations to our cost estimates that should be noted. First, we used meal participation data from SY 18-19. We selected this school year because it was the most recently available school year not impacted by pandemic-related disruptions to school attendance and meal participation. One consequence of this is that our participation and cost estimates may be higher because they are based on pre-pandemic participation rates, which were higher than the rates in the following school years. Another limitation based on the use of SY 18-19 data is that estimates assume participation in CEP will be similar to what it was in SY 18-19, even though recent evidence indicates that fewer schools are currently participating in CEP. In esti-

Table 8. *Scenario 4: Healthy School Meals for Most.*[1]

	Additional Meals Served to All Students			Total Meals Served to All Students[2]			Annual Cost for All Meals Served in the Reduced-price & Paid Categories[3]		
	Breakfast	Lunch	Total	Breakfast	Lunch	Total	Breakfast	Lunch	Total
Estimate 1[4]	5,043,208	3,911,591	**8,954,800**	47,164,069	73,154,587	**120,318,657**	$15,978,093	$40,140,779	**$56,118,872**
Estimate 2[5,6]	3,254,761	8,873,561	**12,128,323**	45,375,622	78,116,557	**123,492,180**	$12,850,169	$34,873,668	**$47,723,837**

Assumptions and notes:

1. Participation estimates do not consider schools that participate in the Community Eligibility Provision (CEP) as those schools are already able to offer free school meals to all their students and are federally reimbursed for those meals using a different funding model.
2. Includes projected additional meals and current meal participation levels in all meal categories in schools with an ISP greater than 25%.
3. Projected costs include the cost of co-pays for all meals served in schools, including projected additional meals.
4. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/
5. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
6. Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277

mates 1 and 2, fewer schools participating in CEP would result in more meals being reimbursed in the 3-tiered system and could increase expected costs. On the other hand, in the 3rd scenario, the impact of the change in CEP participation by schools is harder to predict as it depends on whether the non-participating schools have an ISP of 40% or greater or if schools that previously qualified for CEP no longer qualify (i.e., their ISPs dropped below the 40% threshold). Finally, our meal participation estimations do not include non-traditional schools (e.g., boarding schools, juvenile detention centers, residential childcare institutions, etc.). However, these schools make up a very small proportion of overall meals served in the state, and most have very high rates of free meal participation; therefore, impacts on cost estimates would be minimal.

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Appendix A1: School Community Perspectives Survey

School Community Perspectives Survey
Assessment of Healthy School Meals for All in Arizona
Conducted by ASU Food Policy and Environment Research Group, College of Health Solutions
Arizona State University

QConsent You are invited to participate in a study sponsored by **XXX** to assess opinions about making school meals available to all students in Arizona at no cost. This short online survey will take approximately 15 minutes to complete. Your responses will help inform decision-makers as they plan for the future of school meal programs in **XXX**.

You must be 18 years or older to participate in the study and there are no foreseeable risks or discomforts to your participation. Your participation in this study is voluntary and you are free to withdraw from the study at any time. Your responses will be confidential. The results of this study may be used in reports, presentations, or publications, but your name will never be used.

At the end of the survey, you will have the option to provide your contact information if you would like to be entered into a drawing to win **X of Y $Z gift cards**.

If you have any questions concerning the research study, please contact the research team at **EMAIL** or **PHONE**. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, **IRB CONTACT INFORMATION.**

If you consent to take part in this study, please click "Yes, I consent" below. You will be automatically directed to the survey. If you do not wish to participate in the survey, simply close the survey page.

- Yes, I consent

QRole_1 Are you an employee of a school or school district?

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Display if QRole_1 = Yes]

QRole_1.2 Which job title best describes your role in your school/district?

Source: ASU Food Policy & Environment Research Group

1. Classroom teacher
2. Lunchroom staff/manager
3. School/district administrator
4. Other school/district support staff

QRole1.3 Are you a parent of a child currently attending a K-12 school?
Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Displayed to all participants]

Main_Text1
Background
The National School Lunch Program provides nearly a million lunches and breakfasts for free or at a reduced-cost to school children in Arizona every day. These meals are financially supported with federal funding. To qualify for funding, school meals must meet nutrition standards, such as providing a variety of fruits and vegetables, and whole grains, limiting the use of salt, and following age-appropriate calorie limits. Prior to the onset of the COVID-19 pandemic, parents were required to submit income applications to determine their children's eligibility for free or reduced-cost meals. In response to the COVID-19 pandemic, schools were able to serve free school meals to all students nationwide using federal resources. This provision will no longer be in place as of the start of the 2022-2023 school year.

Source: KSHFNationalSurvey, modified

Main_Text2
In the following questions we would like your views about school meal programs. There are no right or wrong answers; we are interested in your honest opinion on these issues.

Main_Fav Overall, how favorably do you view each of the following school meal programs?

Source: HART, modified

Answer options: Very favorable, somewhat favorable, Neutral, Somewhat unfavorable, Very Unfavorable

1. The school lunch program
2. The school breakfast program

Main_Gen How much do you agree with the following statements regarding school meals?

Source: Cohen et al - Parent, modified

Answer options: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

1. School meals save families money.
2. School meals reduce stress for families by saving time on preparing and packing meals.
3. Children are embarrassed to eat school meals.
4. School meals are only for children whose families have low incomes.
5. Eating school meals may benefit students academically.
6. School meals are healthy (i.e., meals are nutritious and balanced).

Main_Spend How concerned are you about the amount the federal government spends on providing free or reduced-price school meals to students?

Source: HART, modified

1. Extremely concerned
2. Moderately concerned
3. Somewhat concerned
4. Slightly concerned
5. Not at all concerned

Main_ProFut Which of the following do you think would be the best approach to providing school meals in the future?

Source: HART, modified

For reference, under the current income guidelines, a family of 3 earning more than $30,000 earns *too much* to qualify for free school meals

1. We should offer meals at no charge to all students who want them, regardless of income
2. We should raise the household income limits so more children qualify to receive free or reduced-cost meals
3. We should continue with the current income limits for free and reduced-cost meals
4. We should lower the household income limits so fewer children qualify to receive free or reduced-cost meals
5. No children should receive free or reduced-cost meals

Main_SupFreeCovid How do you feel about the policy that was put into place during the COVID-19 pandemic that allowed public schools to serve school meals at no charge to all students?

Source: HART, modified

1. Strongly support
2. Somewhat support
3. Neither support or oppose
4. Somewhat oppose
5. Strongly oppose

Main_Text_3
Background
To provide relief during the COVID-19 pandemic, federal legislation enabled schools to offer meals at no charge for all students. This policy ended for the current school year and families are again required to submit income applications. Only those children that meet the federal income guidelines will be eligible for free or reduced-cost school meals. The result is that some children, whose families make just over the income guidelines, lose access to these meals. Some states have passed legislation that keeps meals free for all students in their state.

Source:?

Main_Benefits In your opinion, which of the following are the <u>most important benefits</u> of making school meals available at no charge to all students regardless of family income?

Source: HART, modified

1. Choose up to three
2. Reduces child hunger
3. Removes major cost for low-income families
4. Reduces shame and stigma in the lunchroom
5. Improves academic achievement
6. Provides meals that are healthier than meals brought from home
7. Improves classroom behavior and school attendance
8. Decreases childhood obesity
9. Advances racial equity
10. Reduces paperwork burden for schools and families
11. Removes meal debt
12. Other, please specify

Main_Sup Below is a list of potential reasons to <u>support</u> passing legislation to make school meals available to all students at no charge. How convincing are these reasons?

Source: HART, modified

Answer options: Very convincing, somewhat convincing, Neither convincing or unconvincing, somewhat unconvincing, very unconvincing

1. A school meal at no charge often gives low-income children a nutritious meal that they might not otherwise get.
2. Many struggling families, including those with annual incomes as low as $30,000, don't currently qualify for free meals. This policy will help many families and children who are barely getting by.
3. School meals are important for academic success. Studies have shown participation in school meals improves students' attendance, behavior, and academic achievement.
4. School meals enhance child development and school readiness. Giving every child the option to get a healthy meal during the school day will help them be the best student they can be.
5. Offering school meals to all students at no charge will reduce the stigma associated with eating school meals and remove embarrassment due to unpaid school meal debt.

Main_Opp Below is a list of potential reasons to oppose passing legislation to make school meals available to all students at no charge. How convincing are these reasons?

Source: HART, modified

Answer options: Very convincing, somewhat convincing, Neither convincing or unconvincing, somewhat unconvincing, very unconvincing

1. The federal government loses billions of dollars due to improper payments and wasted food that is thrown away rather than eaten. We should fix these problems before expanding the school meal programs.
2. Students from wealthy backgrounds would be able to participate even though they can afford to pay for their lunch. Instead of helping well-off students, the program should be devoted to helping those in need.
3. The program will serve not only low-income children but all children whose parents won't prepare a home-packed meal for their child. It should be the responsibility of capable parents, not the school, to make sure their child is fed.
4. School meals at no charge would be an irresponsible use of taxpayer dollars. While schools around the country are already struggling to operate, we can't afford to give meals at no charge to every student.
5. Low-income children are already eligible for meals at no charge, but many don't participate. Instead of giving meals at no charge to students who can afford to buy lunch, the government should make school meals more nutritious and appealing.

Main_SupOpp Review each statement below. In your opinion, is this a reason to support OR oppose making school meals available to all students at no charge in Arizona?

Source: HART, modified

Answer options: Reason to support, not a reason either way, reason to oppose

1. Studies show that students who receive school meals eat more fruits, vegetables, and other healthy foods.
2. In Arizona, almost 65,000 children live in food insecure households and are not eligible for federal food assistance.
3. In schools that have made free school meals available to all students, the number of breakfasts served increased by approximately 10% and lunches by 5%.
4. Most students with family incomes above $30,000 do not currently qualify for free meals.
5. Before the COVID-19 pandemic, millions of students who qualified for free and reduced-cost meals did not participate because of stigma, administrative errors, and other barriers.

Main_SupFreeAZ Would you <u>support or oppose</u> passing legislation in Arizona to permanently offer school meals at no charge to all students regardless of income?

Source: HART, modified

1. Strongly support
2. Somewhat support
3. Neither support or oppose
4. Somewhat oppose
5. Strongly oppose

PARENTS ONLY BLOCK

[Display if QRole1 = No and QRole1.3 = Yes]

Parents_SchType What type of school does your child attend?

If you have more than one child attending a K-12 school, please think of the child who had the most recent birthday when responding to these questions.

Source: ASU Food Policy & Environment Research Group

1. Public school
2. Charter school
3. Private/Parochial school
4. Other _____

Parent_SchLevel Which of the following best describes the grades your child is in?

If you have more than one child attending a K-12 school, please think of the same child who had the most recent birthday when responding to this question.

Source: HART, modified

1. Preschool/kindergarten
2. Elementary schools
3. Middle school or junior high
4. High School

Parents_EatPre In a typical week <u>prior to the COVID-19 Pandemic, when schools were completely in-person (e.g., Fall of 2019)</u>, how often did your child eat school lunch (i.e., a lunch prepared in the school cafeteria and NOT a lunch brought from home)?

Source: Cohen et al - Parent, modified

If you have more than one child attending school, please think of the same child who had the most recent birthday who is in grade K-12 when responding to this question.

1. Never
2. One day per week
3. Two days per week
4. Three days per week
5. Four days per week
6. Five days per week
7. Not sure
8. My child was not school-age during the 2019 - 2020 school year

Parents_EatPost In a typical week, during the previous school year (2021-2022) when school meals were offered at no charge to all students, how often did your child eat school lunch (i.e., a lunch prepared in the school cafeteria and NOT a lunch brought from home)?

Source: HART, modified

If you have more than one child attending school, please think of the same child who had the most recent birthday who is in grade K-12 when responding to this question.

1. Never
2. One day per week
3. Two days per week
4. Three days per week
5. Four days per week
6. Five days per week
7. Not sure
8. My child was not school-age during the 2021 - 2022 school year

[Display if Never is NOT selected in Parents_EatPre OR Never is NOT selected in Parents_EatPost]

Parents_PartY What are the main reasons that your child eats school meals?

Source: ASU Food Policy & Environment Research Group

Please select all that apply.

1. Most children in my child's school eat school meals.
2. My child likes eating school meals.
3. School meals help my family save money.
4. School meals help me and my family save time.
5. School meals are healthy.
6. School meals provide enough food for my child to feel full.
7. Other, please specify

[Display if Five days per week is NOT selected in Parents_EatPre OR Five days per week is NOT selected in Parents_EatPost]

Parents_PartN What are the main reasons that your child may not eat school meals?

Source: ASU Food Policy & Environment Research Group/used answer options for Cohen et al - Parents

Please select all that apply.

1. The meal application process is time-consuming and/or confusing.
2. My child does not like the taste of school meals.
3. My child gets tired of the same foods being served in school meals.
4. I have concerns about the healthfulness of school meals.
5. Prior to the COVID-19 pandemic, the cost of meals was too high.
6. My child does not have time to eat school meals.
7. My child does not get enough food in school meals to feel full.
8. My child is embarrassed to eat school meals.
9. School meals are for low-income children only.
10. Other, please specify

FOODSERVICE BLOCK

[Display if QRole_1= YES and QRole_1.2 = 2]

FS_SchType What type of school do you work for?

Source: ASU Food Policy & Environment Research Group

1. Public school
2. Charter school
3. Private/Parochial school
4. Other _____

FS_Impact In your opinion, what was the impact on your school meal program as a result of providing school meals to all students at no charge during the 2021-22 school year?

Source: Cohen, et al & Zuercher, et al – FSD

Answer options: Decreased greatly, decreased slightly, no effect, increased slightly, increased greatly

1. Student meal participation
2. Paperwork/administrative burden (e.g., collecting Meal Application forms, tracking student eligibility in line, etc.)
3. Time in line for students to get meals
4. Crowding in student dining areas
5. Stigma for students eating school meals
6. Unpaid meal charges/debt
7. School food waste
8. School meal packaging/solid waste
9. Foodservice staffing challenges
10. Scratch/modified scratch cooking
11. Parent satisfaction with meals offered

FS_Con1 If Arizona were to make school meals available to all students at no charge in a future school year, how concerning, if at all, are the following?

Source: Cohen, et al & Zuercher, et al – FSD

Answer options: Significant concern, Moderate concern, Minimal concern, Not a concern

1. Loss of sales from a la carte
2. Inadequate product or ingredient availability
3. Difficulties meeting school meal nutrition standards
4. Difficulties maintaining meal quality and variety
5. Staffing shortages
6. Lack of time for staff training
7. Inadequate kitchen equipment
8. Inadequate kitchen facility and/or storage space
9. Increases in school meal food waste
10. Increases in school meal packaging/solid waste
11. Increased time in line for students to get meals
12. Inadequate meal service space
13. Inadequate dining space
14. Not enough time for students to eat

FS_Con2 If Arizona were to make school meals available to all students at no charge in a future school year, how concerning, if at all, are the following?

Source: Cohen, et al & Zuercher, et al – FSD

Answer options: Significant concern, Moderate concern, Minimal concern, Not a concern

1. Increase in student and parent complaints
2. Difficulties in meeting student cultural/ethnic food preferences
3. Difficulties in meeting student food allergies/medical nutrition needs
4. Difficulty obtaining income information from families
5. Lack of support from district administration (school board, superintendent)
6. Lack of support from school administration (principals/vice principals)
7. Lack of support from nutrition services staff
8. Lack of support from classroom teachers, school nurses, and other school personnel
9. Lack of support from school or district wellness committees

FS_Part Thinking about the students who did NOT regularly eat the reimbursable school meals last year (SY 2021-22), how common are the following barriers for the students you serve?

Source: Cohen, et al & Zuercher, et al – FSD, modified

Answer options: Not at all common, slightly common, somewhat common, moderately common, extremely common

1. Students do not like the taste of the food
2. Students or parents do not think the food is healthy
3. Students prefer to eat a la carte options
4. Students get tired of the foods served at lunch
5. Meals do not meet students' cultural preferences
6. Portions are not big enough / not enough food provided
7. Students prefer to eat meals from home or elsewhere
8. Students often skip meals (e.g., do not eat any breakfast or lunch)
9. Students are unable to get to school on time for breakfast
10. Students don't have enough time to get and eat the lunch
11. Students or parents think only low-income kids eat school meals
12. Students' friends don't eat the school meals
13. Other, please specify

FS_Benefits In your opinion, which of the following would be the most important benefits to your food service program if school meals were available at no charge to all students regardless of family income?

Source: ASU Food Policy & Environment Research Group

Choose up to two

1. Increased revenue due to more student participation
2. Reduced time spent tracking student eligibility status at mealtimes
3. Reduced time spent tracking and collecting meal debt
4. Faster meal service
5. More time to focus on meal quality
6. Other, please specify

TEACHER BLOCK

[Display if QRole_1= YES and QRole_1.2 = 1]

Teach_SchType What type of school do you work for?

Source: ASU Food Policy & Environment Research Group

1. Public school
2. Charter school
3. Private/Parochial school
4. Other _____

Teach_1 Over the past two school years, when school meals were available to all students at no cost regardless of family income, did you see more, less or about the same of the following?

Source: ASU Food Policy & Environment Research Group

Answer options: more, less, about the same, this has never been an issue in my classroom

1. Disruptive classroom behavior
2. Hungry students in the classroom
3. Children seeking food from alternative sources (such as out of the trash, seeking food from classmates or teachers, etc)

Teach_2 If school meals were available at no charge to all students in your school regardless of family income, how concerning, if at all, are the following issues?

Source: ASU Food Policy & Environment Research Group

Answer options: Significant concern, Moderate concern, Minimal concern, Not a concern

1. Children will eat more than what they need
2. The program will negatively impact overall school funding
3. There will not be enough time for students to get lunch
4. The timing/length of the school day will change
5. There will be an increase in food waste

ADMINISTRATOR OR OTHER SUPPORT STAFF BLOCK

Admin_SchType What type of school do you work for?

Source: ASU Food Policy & Environment Research Group

1. Public school
2. Charter school
3. Private/Parochial school
4. Other _____

Admin_Concern If school meals were available at no charge to all students in your school or district regardless of family income, how concerning, if at all, are the following issues?

Source: ASU Food Policy & Environment Research Group

Answer options: Significant concern, Moderate concern, Minimal concern, Not a concern

1. Children will eat more than what they need
2. The program will negatively impact overall school funding
3. There will not be enough time for students to get lunch
4. The timing/length of the school day will change
5. There will be an increase in food waste

[Displayed to all participants]

Open Please provide any additional thoughts, opinions, or experiences you may have about offering school meals at no charge to all Arizona students regardless of family income.

Demo_Text_1: Now we are going to ask you a few questions for statistical purposes only.

Source: KSHFNationalSurvey

Demo_EDU What is the highest level of education you have completed?

Source: Cohen - Parents

1. Less than high school
2. High school graduate
3. Some college
4. 2-year degree
5. 4-year degree
6. Professional degree
7. Doctorate

Demo_Political In terms of your views on political issues, how would you describe yourself?

1. Very conservative
2. Somewhat conservative
3. Middle of the road
4. Somewhat liberal
5. Very liberal
6. Not sure

Demo_ZipCode What is your zip code?

Demo_Age What age group do you belong to?

1. 18-34
2. 35-54
3. 55 or older

Demo_Eth What is your Ethnicity:

1. Hispanic/Latino
2. NOT Hispanic/Latino

Demo_Race What is your race (check all that apply):

1. White
2. Black/African American
3. American Indian/Alaska Native
4. Asian/Asian American

5. Native Hawaiian/ Pacific Islander
6. Other (please specify)

Demo_HHA How many people are in your household?

1 2 3 4 5 6 7 8 9+

Demo_HHC How many total children under 18 years old live in your household?

0 1 2 3 4 5 6 7 8 9+

Demo_Income What was your household income before taxes in the past 12 months? It is ok to make your best guess.

1. Less than $19,999
2. $20,000 - $24,999
3. $25,000 - $34,999
4. $35,000 - $49,999
5. $50,000 - $64,999
6. $65,000 - $79,999
7. $80,000 - $99,999
8. $100,000 - $149,999
9. $150,000 or more

Drawing_YN Thank you for taking the time to complete this survey.

Would like to be entered into the drawing for a chance to win a $100 gift card?

- Yes
- No

[Display if Drawing_YN Yes is selected]

Drawing_EM Please enter your email address to be entered into the drawing for the gift card.
We will only use this email address to contact you if you are selected as a winner of the gift card.

Email:

Interview_YN Would it be ok to contact you for a brief (online) interview after you complete this survey so that we can learn more about your opinions of school meals? In addition to having the chance to win a $100 gift card for the current survey, you will automatically receive a $50 gift card for your time (and interviews can be scheduled at a day and time that you choose).

- Yes
- No

[Display if Interview_YN YES is selected AND if Drawing_YN NO is selected]

Interview_EM Please provide your email address. We will only use this email address to contact you to schedule an interview and to email the gift card as a thank you for your participation in the interview

Email:

[Display if Interview_YN YES is selected]

Interview_Phone Please provide your phone number.

We will use this as a backup to contact you about a) scheduling an interview, and/or winning the gift card for your survey participation and/or for brief reminders before your scheduled interview. Your phone number will not be shared with anyone and will only be used for the reasons noted above. You can opt out of SMS text reminders at any time.

If you do not want to receive SMS text reminders, you may leave this space blank.

Phone number:

Source Citations

HART	Molyneux, Guy. Building Momentum for Healthy School Meals for All. Panel presentation at: National Anti-Hunger Policy Conference: March, 2022, Virtual. **Guy Molyneux co-presented with Dr. Janet Poppendieck – CUNY Urban Food Policy Institute and Maria Martiosayn – Office of Rep. Ilhan Omar Questions were taken from the slides Guy presented during this session
Cohen, et al – Parents	Parent survey provided by Healthy School Meals for All work groups. The survey was used to survey parents in Ca and Me with the goal to assess parent perceptions of UFSM and barriers/motivators to completing school meal application forms The original survey can be found at: https://www.childnourishlab.org/healthy-school-meals-for-all
Cohen, et al & Zuercher, et al – FSD	Food service directors survey provided by the Healthy School Meals for All workgroup. The survey was used to document the district foodservice director's perspectives about the opportunities and challenges presented by FSMFA to inform initial implementation Cohen, J.F., Polacsek, M., Hecht, C.E., Hecht, K., Read, M., Olarte, D.A., Patel, A.I., Schwartz, M.B., Turner, L., Zuercher, M. and Gosliner, W., 2022. Implementation of Universal School Meals during COVID-19 and beyond: Challenges and Benefits for School Meals Programs in Maine. *Nutrients*, 14(19), p.4031. Zuercher, M.D., Cohen, J.F., Hecht, C.E., Hecht, K., Ritchie, L.D. and Gosliner, W., 2022. Providing school meals to all students free of charge during the COVID-19 pandemic and beyond: Challenges and benefits reported by school foodservice professionals in California. *Nutrients*, 14(18), p.3855. The original survey can be found at: https://www.childnourishlab.org/healthy-school-meals-for-all
ASU Food Policy & Environment Research Group	Original questions developed by researchers in the ASU Food Policy & Environment Research Group at ASU's College of Health Solutions
KSHFNationalSurvey	Kids' Safe and Healthful Food Project. The Kids' Safe and Healthful Foods Project provides nonpartisan analysis and evidence-based recommendations on policies that affect the safety and healthfulness of school foods. The project is a collaboration between The Pew Charitable Trusts and the Robert Wood Johnson Foundation. Original survey/survey results can be found at: https://www.pewtrusts.org/-/media/assets/2014/09/kshfnationalsurvey_raw.pdf

Appendix A2: Interview Guide Food Service Directors

Interview Guide: Food Service Directors
Assessment of Healthy School Meals for All in Arizona
Conducted by ASU Food Policy and Environment Research Group,
College of Health Solutions Arizona State University

Technical notes:
Give note-taker co-host ability
The note taker should turn on the transcript function in zoom and is responsible for starting recording AFTER consent.

Interview notes:
Interviewee:
Interviewee District/school:
Interviewer:
Note taker:
Date:

Hi, my **name** is **XXX** and I'm from **XXXX**. **Thank you** for agreeing to participate in this interview today. Before we get started, we will share the study consent with you and give you a chance to review it, ask any questions and sign it.

[Provide link via zoom chat or via email if on zoom phone]
Consent link:

[If written consent is received, start recording interview.]

We are conducting a research project to assess perceptions of serving Universal Free Meals for All in Arizona. During this interview, we will ask you to think about your experiences serving Universal Free School Meals for All during the COVID-19 pandemic in the 2021-2022 school year. We know that the past couple of years have been extremely challenging for school food service operations due to the pandemic, and we'd like to hear about your experiences. Then we will ask similar questions but considering what operations *might* look like if Arizona were to start serving Healthy School Meals for All in future school years.

Questions:

Let's get started with the interview. For this first set of questions, we'll focus on the 2021-2022 school year and how you think serving free school meals to all students has impacted your operations.

1. Thinking about your school food service operations during the 2021-2022 school year. **[Domain: current operations]**
    a. How did you serve lunch (for example, traditional lunch lines or pre-packaged option)?
    b. Where did students typically eat lunch (such as in the cafeteria, gyms, outdoors or in classrooms)?

2. Can you tell me about the challenges or difficulties you faced serving free school meals for all students in the 2021-2022 school year? Consider challenges such as staffing issues, facility capacity, food sourcing etc. **[Domain: current challenges].**

Probe for the following if they were not already mentioned:

- Labor capacity (like staffing issues)
- Facility capacity, including kitchen equipment, storage and cold storage
- Food sourcing or supply chain issues, including vendors/local foods/farm-to-school, as well as paper goods, utensils, etc.
- Meal quality and menu variety
- Food waste
- Were there other challenges serving school meals this year that I didn't mention?

a. Which of these has been the biggest challenge?

Now let's talk about factors that helped your food service program to be successful in the 2021-2022 school year.

3. Can you talk about anything that your district/school has done that has made serving free school meals for all students more successful? **[Domain: current facilitators]**

   a. Were there schools within your district for which feeding students was easier? ([If Yes] What's different about those schools?) **[Domain: different implementation]**

   b. Were there schools within your district that experienced more challenges with feeding students? ([If Yes] What's different about those schools?) **[Domain: different implementation]**

   c. What methods did your food service division or district come up with to address these challenges that could also be used for meal service if universal free meals were to continue?

   d. Are there methods that you've heard of other school districts using that can be used for meal service if universal free meals were to continue?

We realize that recent school years have included many disruptions and challenges for school meal programs. We want to be sure we understand how this is affecting people's experiences with school meals. First, I'll ask about parents, then students.

4. What did you hear most from parents about school meals in the 2021-2022 school year?

   a. How did you get this feedback from parents (e.g., emails, surveys, calls, etc)?

5. Continuing to think about the 2021-2022 school year, what did you hear most from **students** about school meals? **[Domain: student/parent perspectives]**

6. What do you think are the most important factors that drive students to participate in school meals in your district?

   Probe: If the response is that meals are free, probe if they think participation is due to actual cost or to reduced stigma [or if there is something else about free meals that impacted participation]).

   a. Are there differences for breakfast and lunch?

7. What do you think are the main reasons students **do not** participate in school meals?

a. Are there differences for breakfast and lunch?

b. Are there differences in the reasons students don't participate among different student populations within your district?

8. School food operations need support from various stakeholders. How supportive are school administrators and teachers in your district?

   a. How do they see school meal programs benefiting students?

   Probe for details, including academic and behavioral benefits

9. Do you have a sense of what stakeholders think about continuing to serve meals to all students at no cost?

   Specficlaly ask about:
   a. Principal and administrators
   b. Teachers
   c. Your foodservice staff

   Probe: Are there differences by grade level, i.e., elementary vs. middle vs. high school

10. I also want to talk a little bit about universal free meals for all authorized via the USDA waivers. Can you tell me how your meal program finances have been impacted this year while you are providing free school meals for all students with the USDA waivers in place?

    a. How do you expect your school meal program finances to be impacted in the NEXT school year when the USDA waivers are no longer in place? **[Domain: financial impact]**

Now let's talk about your thoughts about offering healthy school meals for all in Arizona in future school years.

11. If the state of Arizona were to implement Healthy School Meals for All, do you think you would be able to provide the kinds and quality of meals that you would like to all students? [Domain: meal quality]

    a. [If yes] What will allow you to do that?

    b. [If no] Why not?

       Probe: What are the potential challenges that you would be concerned about for your service program if Healthy School Meals for All were in place? How do you think you would address those issues?

12. If the state of Arizona were to implement Healthy School Meals for All, does your SFA have the capacity to serve two full meals (breakfast and lunch) to all interested students?

    Probe about storage, staff, service space, kitchen equipment, meal service logistics such as time to eat, anything else that limits the ability to achieve full participation

    a. [If no] What would it take?

13. If Arizona were to offer Healthy School Meals for All, what do you think is needed to make free school meals for all students as successful as possible for your schools?

    a. What resources and information do you think would be most helpful for your district/school to support a successful program? **[Domain: future needs]**

    b. What are your overall concerns about providing free school meals to all students?

14. Is there anything else you would like to discuss? I want to give you a chance to share any comments or ask any questions you might have.

15. Thank you so much for your time and for sharing your ideas. My final question is about potential methods of collecting future data from stakeholders in your district. We hope to send a very quick survey out to other stakeholders (including parents, teachers, administrators, and food service staff) to gather basic opinions about Healthy School Meals for All.

    a. In your district, what is the best way to reach these stakeholders? **Probe for specifics:** is there a certain person, department, email address, etc that we should reach out to? To your knowledge, do these methods have a cost?

Wrap up:
That was the last question I have for our interview today.
Again, thank you so much for your time and for sharing your ideas.

This interview guide was adapted from:

Cohen, J.F., Polacsek, M., Hecht, C.E., Hecht, K., Read, M., Olarte, D.A., Patel, A.I., Schwartz, M.B., Turner, L., Zuercher, M. and Gosliner, W., 2022. Implementation of Universal School Meals during COVID-19 and beyond: Challenges and Benefits for School Meals Programs in Maine. *Nutrients*, 14(19), p.4031.

Zuercher, M.D., Cohen, J.F., Hecht, C.E., Hecht, K., Ritchie, L.D. and Gosliner, W., 2022. Providing school meals to all students free of charge during the COVID-19 pandemic and beyond: Challenges and benefits reported by school foodservice professionals in California. *Nutrients*, 14(18), p.3855.

The original survey can be accessed at: https://www.childnourishlab.org/healthy-school-meals-for-all

Appendix A3: Non-NSLP Schools Food Access Survey

Non-NSLP Schools Food Access Survey
Assessment of Healthy School Meals for All in Arizona
Conducted by ASU Food Policy and Environment Research Group,
College of Health Solutions Arizona State University

QConsent You are invited to participate in a study sponsored by **XXX** to understand how meals were provided to students during the COVID-19 related school closures. This short online survey will take approximately 5 minutes to complete.

You must be 18 or older to participate in the study and there are no foreseeable risks or discomforts to your participation. Your participation in this study is voluntary and you are free to withdraw from the study at any time. Your responses will be confidential. The results of this study may be used in reports, presentations, or publications, but your name or the name of your school/district will never be used.

At the end of the survey, you will have the option to provide your contact information if you would like to be entered into a drawing to win **X of Y $Z gift cards.**

If you have any questions concerning the research study, please contact the research team at **EMAIL** or **PHONE**. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through **IRB CONTACT INFORMATION**.

If you consent to take part in this study, please click "Yes, I consent" below. You will be automatically directed to the survey. If you do not wish to participate in the survey, simply close the survey page.

- Yes, I consent

BASIC SCHOOL INFO
Role1 Which job title best describes your role in your school/district?

Source: ASU Food Policy & Environment Research Group

1. School principal/vice-principal
2. Front office staff
3. Social worker or other school support staff
4. School food service staff
5. Classroom teacher
6. District level staff
7. Other, please specify

SchName What is the name of your school or district?

Source: ASU Food Policy & Environment Research Group

SchAdd What is the physical address of your school or district office?

Source: ASU Food Policy & Environment Research Group

SchType What type of school or district is this?

Source: ASU Food Policy & Environment Research Group

1. Public school
2. Charter school
3. Private/Parochial school
4. Other please specify

Meals_Prior Prior to the COVID-19 pandemic, how did students in your school or district get their lunch meals?

Source: ASU Food Policy & Environment Research Group

Select all that apply

1. USDA reimbursable meals (NSLP/SBP)
2. Privately run meal service (not reimbursable)
3. Students brought lunch from home
4. Other, please specify

PANDEMIC ACTIONS

CovidMeals_YN During COVID-19-related school closures, did your school offer any free on-site meal or food pick-up options for your enrolled students? (If you work at the district level, please think of the majority of schools in your district when responding.)

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Display if CovidMeals_YN is YES]

CovidMealsY_Sub Were the meals or food pick-ups offered during COVID-19 related school closures federally subsidized (i.e., NSLP, SSO, SFSP)? (If you work at the district level, please think of the majority of schools in your district when responding.)

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Display only if CovidMealY_Sub No is selected]

CovidMealsY_Pay How were the meals or food pick-ups offered during COVID-19 related school closures supported? (If you work at the district level, please think of the majority of schools in your district when responding.)

Source: ASU Food Policy & Environment Research Group

Select all that apply

1. We accepted donations from the community to pay for meals
2. We applied for a government-funded grant to pay for meals
3. We applied for an industry or privately funded grant to pay for meals
4. We worked with a community organization and/or food bank to be a meal delivery site
5. Other, please specify

[Display if CovidMeals_YN is YES]

CovidMealsY_Type What types of meals or food pick-ups did your school or district provide to students during the COVID-19 pandemic? (If you work at the district level, please think of the majority of schools in your district when responding.)

Source: ASU Food Policy & Environment Research Group

Select all that apply

1. Breakfast
2. Lunch
3. Snack
4. Supper
5. Bulk food distributions
6. Other, please specify _____

CovidMealsY_Com How were you informing families about the food distribution programs offered by your school or district?

Source: Share our Strength

Select all that apply

1. Signage outside of school and in community settings
2. Door hanger
3. Radio/TV ads
4. Newspaper
5. Automated calls to families
6. Automated emails to families
7. Automated text messages to families
8. Letters mailed home to families
9. Social media pages
10. Organization/school websites
11. Other (please specify)

[Display if CovidMeals_YN is NO]

CovidMealsN_Aware Were you aware of other schools/districts or organizations in your community that offered free on-site meal or food pick-up options to students during COVID-19 related school closures?

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Display if CovidMealsN_Aware is Yes]

CovidMealsN_Avail Do you know if the free on-site meal or food pick-up options offered at other schools or community sites were available to students attending your school during COVID-19 related school closures?

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No
3. I Don't know

[Display if CovidMealsN_Avail is YES]

CovidMealsN_Type To your knowledge, what types of free on-site meal or food pick-up options were available at these sites?

Source: ASU Food Policy & Environment Research Group

Select all that apply

1. Breakfast
2. Lunch
3. Snack
4. Supper
5. Bulk food distributions
6. Other, please specify
7. I don't know

CovidMealsN_ComYN Did your school communicate to students/families about the availability of free on-site meal or food pick-up options available at other schools or community sites during pandemic-related school closures?

Source: ASU Food Policy & Environment Research Group

1. Yes
2. No

[Display if CovidMealsN_ComYN is Yes]

CovidMealsN_Com How were you informing families about these community meal distribution programs?

Source: Share our Strength

Select all that apply

1. Signage outside of school and in community settings
2. Door hanger
3. Radio/TV ads
4. Newspaper
5. Automated calls to families
6. Automated emails to families
7. Automated text messages to families
8. Letters mailed home to families
9. Social media pages
10. Organization/school websites
11. Other, please specify

[Displayed to all participants]

COVIDMeal_Percep Do you agree or disagree with the following statements?

Source: Adapted from Cohen et al – Parent, Cohen, et al & Zuercher, et al – FSD

1. Free meals during COVID-19 related school closures were helpful to ensure food security among students.
2. Free meals during COVID-19 related school closures provided essential nutrition to students to

keep them healthy.
3. Free meals during COVID-19 related school closures helped reduce the stress parents experienced during the public health emergency.
4. Free meals during COVID-19 related school closures provided financial assistance to parents during the public health emergency.
5. Free meal distribution to students during COVID-19 related school closures created extra burden on communities in the midst of supply chain problems.
6. Free meal distribution to students during COVID-19 related school closures increased exposure to the virus for participating families and meal site employees.

Open Please provide any additional thoughts, opinions, or experiences you may have about meals provided to students during the COVID-19 related school closures.

Drawing_YN Thank you for taking the time to complete this survey.

Would like to be entered into the drawing for a chance to win a $20 gift card?

- Yes
- No

[Display if Drawing_YN Yes is selected]

Drawing_EM Please enter your email address to be entered into the drawing for the gift card.

We will only use this email address to contact you if you are selected as a winner of the gift card.

Email:

Source Citations

Cohen, et al – Parents	Parent survey provided by Healthy School Meals for All work groups. The survey was used to survey parents in Ca and Me with the goal to assess parent perceptions of UFSM and barriers/motivators to completing school meal application forms The original survey can be found at: https://www.childnourishlab.org/healthy-school-meals-for-all
Cohen, et al & Zuercher, et al – FSD	Food service directors survey provided by the Healthy School Meals for All workgroup. The survey was used to document the district foodservice director's perspectives about the opportunities and challenges presented by FSMFA to inform initial implementation Cohen, J.F., Polacsek, M., Hecht, C.E., Hecht, K., Read, M., Olarte, D.A., Patel, A.I., Schwartz, M.B., Turner, L., Zuercher, M. and Gosliner, W., 2022. Implementation of Universal School Meals during COVID-19 and beyond: Challenges and Benefits for School Meals Programs in Maine. *Nutrients*, 14(19), p.4031. Zuercher, M.D., Cohen, J.F., Hecht, C.E., Hecht, K., Ritchie, L.D. and Gosliner, W., 2022. Providing school meals to all students free of charge during the COVID-19 pandemic and beyond: Challenges and benefits reported by school foodservice professionals in California. *Nutrients*, 14(18), p.3855. The original survey can be found at: https://www.childnourishlab.org/healthy-school-meals-for-all
ASU Food Policy & Environment Research Group	Original questions developed by researchers in the ASU Food Policy & Environment Research Group at ASU's College of Health Solutions
Share our Strength	http://bestpractices.nokidhungry.org/sites/default/files/national-summer-meals-survey-full-report_0.pdf

Appendix B1: Step by step review of cost scenario calculations

Table B1. *Summary of steps 1-3 of the cost analysis for scenario 1: Healthy School Meals for All (HSM4A) Estimate 1*[a]

	Step 1		Step 2	Step 3			
	Federal Reimbursement Rate for Free Meals[b]	Actual Reimbursement Rate from USDA by Eligibility Category[b]	Difference Between Federal Reimbursement Rate by Category & Free Reimbursement Rate To be Paid by State	Total Meals Served in CEP Schools[c]	Total Meals Served in non-CEP Schools[c]	Total Meals Served in CEP and non-CEP Schools[c]	% of total meals served
Free Breakfast	$2.47	$2.47	$0.00	11,570,709	26,100,403	37,671,112	73.0%
Red Breakfast	$2.47	$2.17	$0.30	0	3,212,768	3,212,768	9.0%
Paid Breakfast	$2.47	$0.50	$1.97	1,180,909	6,417,817	7,598,726	18.0%
			Total Breakfast	**12,751,618**	**35,730,988**	**48,482,606**	**100.0%**
Free Lunch	$4.34	$4.34	$0.00	16,757,782	49,593,838	66,351,620	63.3%
Red Lunch	$4.34	$3.94	$0.40	0	7,401,629	7,401,629	9.4%
Paid Lunch	$4.34	$0.78	$3.56	1,779,149	21,367,457	23,146,606	27.3%
			Total Lunch	**18,536,931**	**78,362,924**	**96,899,855**	**100.0%**

a. Steps 1-3 are identical for estimate 1 and 2 and therefore this table is not repeated.
b. Values come from the most recent year published on USDA website, SY2022-23. The average between the "less than 60%" rate and "more than 60%" rate was used for lunch. For breakfast, "severe need" and "non-severe need" costs were averaged https://www.fns.usda.gov/cn/fr-072622.
c. Meal counts based on data collected from ADE and includes meals from all public and charter schools in AZ for SY2018-2019.

Table B1.2. *Summary of steps 4 and 5 for scenario 1: Healthy School Meals for All (HSM4A) Estimate 1*

	Step 4					Step 5
Estimated Increase in Participation[d]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in non-CEP Schools	Estimated Meals Served in CEP & non-CEP Schools	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals
6.4%	11,570,709	27,770,829	39,341,538	71.2%	1,670,426	$0.00
15.5%	0	3,710,747	3,710,747	6.7%	497,979	$1,113,224
72.1%	1,180,909	11,045,063	12,225,972	22.1%	4,627,246	$21,703,549
Total	**12,751,618**	**42,526,639**	**55,278,257**	**100.0%**	**6,795,651**	**$22,816,773**
1.3%	16,757,782	50,238,558	66,996,340	63.1%	644,720	$0.00
11.5%	0	8,252,816	8,252,816	7.8%	851,187	$3,259,862
36.8%	1,779,149	29,230,681	31,009,830	29.2%	7,863,224	$103,915,072
Total	**18,536,931**	**87,722,055**	**106,258,986**	**100.0%**	**9,359,131**	**$107,174,934**

d. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/.

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.

Table B1.3. *Summary of steps 4 and 5 for scenario 1: Healthy School Meals for All (HSM4A) Estimate 2*

	Step 4					Step 5
Estimated Increase in Participation[f,g]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in non-CEP Schools	Estimated Meals Served in CEP & non-CEP Schools	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals
5.0%	11,570,709	27,405,423	38,976,132	73.9%	1,305,020	$0.00
21.0%	0	3,887,449	3,887,449	7.4%	674,681	$1,166,235
36.0%	1,180,909	8,728,231	9,909,140	18.8%	2,310,414	$17,150,974
Total	**12,751,618**	**40,021,104**	**52,772,722**	**100.0%**	**4,290,116**	**$18,317,209**
17.5%	16,757,782	58,272,760	75,030,542	67.8%	8,678,922	$0.00
17.5%	0	8,696,914	8,696,914	7.9%	1,295,285	$3,435,281
17.5%	1,779,149	25,106,762	26,885,911	24.3%	3,739,305	$89,254,539
Total	**18,536,931**	**92,076,436**	**110,613,367**	**100.0%**	**13,713,512**	**$92,689,820**

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.
f. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
g. Estimate 2: Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277

Table B2. *Summary of steps 1-3 of the cost analysis for scenario 2: State Covers Co-pays for Reduced-price Meals*[a]

	Step 1		Step 2	Step 3			
	Federal Reimbursement Rate for Free Meals[b]	Actual Reimbursement Rate from USDA by Eligibility Category[b]	Difference Between Federal Reimbursement Rate by Category & Free Reimbursement Rate To be Paid by State	Total Meals Served in CEP Schools[c]	Total Meals Served in non-CEP Schools[c]	Total Meals Served in CEP and non-CEP Schools[c]	% of total meals served
Free Breakfast	$2.47	$2.47	$0.00	11,570,709	26,100,403	37,671,112	92.1%
Red Breakfast	$2.47	$2.17	$0.30	0	3,212,768	3,212,768	7.9%
			Total Breakfast	**11,570,709**	**29,313,171**	**40,883,880**	**100.0%**
Free Lunch	$4.34	$4.34	$0.00	16,757,782	49,593,838	66,351,620	90.0%
Red Lunch	$4.34	$3.94	$0.40	0	7,401,629	7,401,629	10.0%
			Total Lunch	**16,757,782**	**56,995,467**	**73,753,249**	**100.0%**

a. Steps 1-3 are identical for estimate 1 and 2 and therefore this table is not repeated.
b. Values come from the most recent year published on USDA website, SY2022-23. The average between the "less than 60%" rate and "more than 60%" rate was used for lunch. For breakfast, "severe need" and "non-severe need" costs were averaged https://www.fns.usda.gov/cn/fr-072622.
c. Meal counts based on data collected from ADE and includes meals from all public and charter schools in AZ for SY2018-2019.

Table B2.1. *Summary of steps 4 and 5 for scenario 2: State Covers Co-pays for Reduced-price Meals, Estimate 1*

	Step 4					Step 5
Estimated Increase in Participation[d]	**Estimated Meals Served in CEP Schools[e]**	**Estimated Meals Served in non-CEP Schools**	**Estimated Meals Served in CEP & non-CEP Schools**	**% of total additional meals served**	**Total Additional Meals Served**	**Total Estimated Cost of Providing Universal Meals**
6.4%	11,570,709	27,770,829	39,341,538	91.4%	1,670,426	$0.00
15.5%	0	3,710,747	3,710,747	8.6%	497,979	$1,113,224
Total	**11,570,709**	**31,481,576**	**43,052,285**	**100.0%**	**2,168,405**	**$1,113,224**
1.3%	16,757,782	50,238,558	66,996,340	89.0%	644,720	$0.00
11.5%	0	8,252,816	8,252,816	11.0%	851,187	$3,478,766
Total	**16,757,782**	**58,491,374**	**75,249,156**	**100.0%**	**1,495,907**	**$3,478,766**

d. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/.

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.

Table B2.2. *Summary of steps 4 and 5 for scenario 2: State Covers Co-pays for Reduced-price Meals, Estimate 2*

	Step 4					Step 5
Estimated Increase in Participation[f,g]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in non-CEP Schools	Estimated Meals Served in CEP & non-CEP Schools	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals
5.0%	11,570,709	27,405,423	38,976,132	91.5%	1,305,020	$0.00
21.0%	0	3,887,449	3,887,449	8.5%	674,681	$1,166,235
Total	**11,570,709**	**31,292,872**	**42,863,581**	**100.0%**	**1,979,701**	**$1,166,235**
17.5%	16,757,782	58,272,760	75,030,542	89.1%	8,678,922	$0.00
17.5%	0	8,696,914	8,696,914	10.9%	1,295,285	$3,478,766
Total	**16,757,782**	**66,969,674**	**83,727,456**	**100.0%**	**9,974,207**	**$3,478,766**

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.
f. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
g. Estimate 2: Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277

Table B2.3. *Summary of steps 4 and 5 for scenario 2: State Covers Co-pays for Reduced-price Meals, Estimate 3*

	Step 4					Step 5
Estimated Increase in Participation[h]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in non-CEP Schools	Estimated Meals Served in CEP & non-CEP Schools	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals
6.4%	11,570,709	27,770,829	39,341,538	91.5%	1,670,426	$0.00
9.0%	0	3,501,917	3,501,917	8.5%	289,149	$1,050,575
Total	**11,570,709**	**31,272,746**	**42,843,455**	**100.0%**	**1,959,575**	**$1,050,575**
1.3%	16,757,782	50,238,558	66,996,340	89.1%	644,720	$0.00
11.0%	0	8,215,808	8,215,808	10.9%	814,179	$3,286,323
Total	**16,757,782**	**58,454,366**	**75,212,148**	**100.0%**	**1,458,899**	**$3,286,323**

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.
h. Estimate 3: Estimated increases in participation were informed by a USGAO report that examined 5 states and 35 districts that removed the reduced-price category. Brown, K. 2010. https://www.gao.gov/products/gao-09-584

Table B3. *Summary of step 1 of the cost analysis for scenario 3: Require all schools with ISP of 40% or greater to participate in CEP*[a]

	Step 1			
	Federal Reimbursement Rate from USDA by Eligibility Category[b]	**Total Meals Served in Schools with an ISP greater than 40% who are not participating in CEP**[c,i]	**Total Reimbursement Under Current 3 Tiered System**	**% of total meals served**
Free Breakfast	$0.00	26,100,403	$37,671,112	73.0%
Red Breakfast	$0.30	3,212,768	$3,212,768	9.0%
Paid Breakfast	$1.97	6,417,817	$7,598,726	18.0%
	Total Breakfast	**35,730,988**	**$48,482,606**	**100.0%**
Free Lunch	$0.00	49,593,838	$66,351,620	63.3%
Red Lunch	$0.40	7,401,629	$7,401,629	9.4%
Paid Lunch	$3.56	21,367,457	$23,146,606	27.3%
	Total Lunch	**78,362,924**	**$96,899,855**	**100.0%**

a. Steps 1-3 are identical for estimate 1 and 2 and therefore this table is not repeated.
b. Values come from the most recent year published on USDA website, SY2022-23. The average between the "less than 60%" rate and "more than 60%" rate was used for lunch. For breakfast, "severe need" and "non-severe need" costs were averaged https://www.fns.usda.gov/cn/fr-072622.
c. Meal counts based on data collected from ADE and includes meals from all public and charter schools in AZ for SY2018-2019.
i. Meal counts based on data collected from ADE and include meals from all public and charter schools in AZ for the 2018-2019 school year with ISP's greater than 40% that were not already participating in CEP.

Table B3.1. *Summary of steps 2-6 of the cost analysis for scenario 3: Require all schools with ISP of 40% or greater to participate in CEP, Estimate 1*

Step 2	Step 3		Step 4	Step 5	Step 6
Estimated Increase in Participation[d]	Projected Meals Served in schools with ISP greater than 40% if participating in CEP	% of total meals served	Estimated # of meals reimbursed at free or paid using ISP*1.6 model[j]	Total Estimated Reimbursement if Identified Schools Participated in CEP	Difference in Reimbursement Between the 2 Funding Models (CEP Model - 3 Tier Model)
6.4%	15,673,187	74%	19,444,586	$47,930,904	$11,620,372
15.5%	1,557,235	7%	0	$0	($2,918,972)
72.1%	3,894,542	18%	4,470,629	$2,235,315	$1,103,838
Total	**21,124,964**	**100%**	**23,915,215**	**$50,166,219**	**$9,805,238**
1.3%	22,655,747	78%	27,332,447	$118,486,158	$21,533,874
11.5%	2,340,106	8%	0	$0	($8,269,075)
36.8%	4,142,983	14%	6,406,844	$4,997,338	$2,635,111
Total	**29,138,836**	**100%**	**33,739,291**	**$123,483,496**	**$15,899,911**

d. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/.

j. School level ISPs were used to calculate meals that would be reimbursed at the free or paid rate for each school. The school level values were then combined into a state level total.

Table B3.2. *Summary of steps 2-6 of the cost analysis for scenario 3: Require all schools with ISP of 40% or greater to participate in CEP, Estimate 2*

Step 2	Step 3		Step 4	Step 5	Step 6
Estimated Increase in Participation[f,g]	Projected Meals Served in schools with ISP greater than 40% if participating in CEP	% of total meals served	Estimated # of meals reimbursed at free or paid using ISP*1.6 model[j]	Total Estimated Reimbursement if Identified Schools Participated in CEP	Difference in Reimbursement Between the 2 Funding Models (CEP Model - 3 Tier Model)
5.0%	15,466,961	77%	18,583,570	$45,808,500	$9,497,968
21.0%	1,631,389	8%	0	$0	($2,918,972)
36.0%	3,077,616	15%	4,256,000	$2,128,000	$996,524
Total	**20,175,966**	**100%**	**22,839,570**	**$47,936,500**	**$7,575,519**
17.5%	26,278,877	81%	30,348,999	$131,562,911	$34,610,627
17.5%	2,466,031	8%	0	$0	($8,269,075)
17.5%	3,558,483	11%	7,074,710	$5,518,274	$3,156,047
Total	**32,303,391**	**100%**	**37,423,709**	**$137,081,184**	**$29,497,599**

f. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/

g. Estimate 2: Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277

j. School level ISPs were used to calculate meals that would be reimbursed at the free or paid rate for each school. The school level values were then combined into a state level total.

Table B4. *Summary of steps 1-3 for cost scenario 4: Healthy School Meals for Most*[a]

	Step 1		Step 2	Step 3			
	Federal Reimbursement Rate for Free Meals[b]	Actual Reimbursement Rate from USDA by Eligibility Category[b]	Difference Between Federal Reimbursement Rate by Category & Free Reimbursement Rate To be Paid by State	Total Meals Served in CEP Schools[c]	Total Meals Served in Schools with ISP>40, not in CEP[c]	Total Meals Served in CEP and Schools with ISP>40, not in CEP[c]	% of total meals served
Free Breakfast	$2.47	$2.47	$0.00	11,355,017	22,393,442	33,964,151	76.2%
Red Breakfast	$2.47	$2.17	$0.30	0	2,507,994	2,507,994	8.5%
Paid Breakfast	$2.47	$0.50	$1.97	1,140,015	4,467,807	5,648,716	15.2%
			Total Breakfast	**12,495,032**	**29,369,243**	**42,120,861**	**100.0%**
Free Lunch	$4.34	$4.34	$0.00	16,480,331	38,256,236	55,014,018	75.4%
Red Lunch	$4.34	$3.94	$0.40	0	4,613,742	4,613,742	9.1%
Paid Lunch	$4.34	$0.78	$3.56	1,729,370	7,836,087	9,615,236	15.5%
			Total Lunch	**18,209,701**	**50,706,065**	**69,242,996**	**100.0%**

a. Steps 1-3 are identical for estimate 1 and 2 and therefore this table is not repeated.
b. Values come from the most recent year published on USDA website, SY2022-23. The average between the "less than 60%" rate and "more than 60%" rate was used for lunch. For breakfast, "severe need" and "non-severe need" costs were averaged https://www.fns.usda.gov/cn/fr-072622.
c. Meal counts based on data collected from ADE and includes meals from all public and charter schools in AZ for SY2018-2019.

Table B4.1. *Summary of steps 4 and 5 for scenario 4: Healthy School Meals for Most, Estimate 1*

	Step 4					Step 5
Estimated Increase in Participation[d]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in Schools with ISP >40 Not CEP	Estimated Meals Served in CEP & Schools with ISP> Not CEP	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals to Most
6.4%	11,355,017	23,826,622	35,181,639	75.0%	1,433,180	$0.00
15.5%	0	2,896,733	2,896,733	6.2%	388,739	$869,020
72.1%	1,140,015	7,689,096	8,829,111	18.8%	3,221,289	$15,109,073
Total	**12,495,032**	**34,412,451**	**46,907,483**	**100.0%**	**5,043,208**	**$15,978,093**
1.3%	16,480,331	38,753,567	55,233,898	75.8%	497,331	$0.00
11.5%	0	5,144,322	5,144,322	7.1%	530,580	$2,032,007
36.8%	1,729,370	10,719,767	12,449,137	17.1%	2,883,680	$38,108,772
Total	**18,209,701**	**54,617,656**	**72,827,357**	**100.0%**	**3,911,591**	**$40,140,779**

d. Estimate 1: Estimated increases in participation were informed by a national sample of elementary and middle schools, data were collected between 2013-2015. Tan, et.al. 2020. https://pubmed.ncbi.nlm.nih.gov/32754916/.

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.

Table B4.2. *Summary of steps 4 and 5 for scenario 4: Healthy School Meals for Most, Estimate 2*

	Step 4					Step 5
Estimated Increase in Participation[d]	Estimated Meals Served in CEP Schools[e]	Estimated Meals Served in Schools with ISP >40 Not CEP	Estimated Meals Served in CEP & Schools with ISP> Not CEP	% of total additional meals served	Total Additional Meals Served	Total Estimated Cost of Providing Universal Meals to Most
5.0%	11,355,017	23,513,114	34,868,131	77.3%	1,119,672	$0.00
21.0%	0	3,034,673	3,034,673	6.7%	526,679	$910,402
36.0%	1,140,015	6,076,218	7,216,233	16.0%	1,608,411	$11,939,767
Total	**12,495,032**	**32,624,004**	**45,119,036**	**100.0%**	**3,254,761**	**$12,850,169**
17.5%	16,480,331	44,951,077	61,431,408	79.0%	6,694,841	$0.00
17.5%	0	5,421,147	5,421,147	7.0%	807,405	$2,141,353
17.5%	1,729,370	9,207,402	10,936,772	14.1%	1,371,315	$32,732,315
Total	**18,209,701**	**59,579,626**	**77,789,327**	**100.0%**	**8,873,561**	**$34,873,668**

e. Participation in CEP schools was estimated to remain the same assuming that the increase in participation from moving to free meals has already occurred in these schools.
f. Estimate 2: Estimated increases in participation for breakfast were informed by the free breakfast program in NYC. Data was collected from elementary and middle schools from 2001-2002 to 2007-2008. Leos-Urbel, et.al., 2013. https://pubmed.ncbi.nlm.nih.gov/24465073/
g. Estimate 2: Estimated increases in participation for lunch were informed by a USDA report published in 2016. https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=277

Appendix B2: Appendix B2: Summary of distributions of costs for scenarios 1 and 2

Table B2.1. *Distribution of costs for scenario 1 for Non-CEP Meals by Rural/Urban and Charter/Public*

	Estimate 1		Estimate 2		Estimate 1		Estimate 2	
	Rural	Urban	Rural	Urban	Charter	Public	Charter	Public
Free Breakfast	$0	$0	$0	$0	$0	$0	$0	$0
Reduced Breakfast	$125,460	$987,764	$128,286	$1,037,949	$87,054	$1,026,170	$81,636	$1,084,598
Paid Breakfast	$2,767,202	$18,936,346	$2,229,627	$14,921,348	$1,391,197	$20,312,351	$1,200,568	$15,950,406
Total Breakfast	**$2,892,663**	**$19,924,110**	**$2,357,912**	**$15,959,296**	**$1,478,252**	**$21,338,521**	**$1,282,205**	**$17,035,004**
Free Lunch	$0	$0	$0	$0	$0	$0	$0	$0
Reduced Lunch	$374,884	$2,928,986	$343,528	$3,091,753	$276,110	$2,983,752	$274,822	$3,160,459
Paid Lunch	$10,599,337	$93,502,781	$8,925,454	$80,329,085	$5,767,286	$98,147,785	$4,462,727	$84,791,812
Total Lunch	**$10,974,221**	**$96,431,768**	**$9,268,982**	**$83,420,838**	**$6,043,397**	**$101,131,537**	**$4,737,549**	**$87,952,270**

Table B2.2. *Distribution of costs for scenario 2 for Non-CEP Meals by Rural/Urban*

	Estimate 1		Estimate 2		Estimate 3	
	Rural	Urban	Rural	Urban	Rural	Urban
Reduced Breakfast	$125,460	$987,764	$131,435	$1,034,800	$118,400	$932,175
Reduced Lunch	$335,064	$2,966,062	$353,095	$3,125,671	$333,562	$2,952,761

Table B2.3. *Distribution of costs for scenario 2 for Non-CEP Meals by Charter/Public*

	Estimate 1		Estimate 2		Estimate 3	
	Charter	Public	Charter	Public	Charter	Public
Reduced Breakfast	$87,054	$1,026,170	$91,200	$1,075,035	$82,155	$968,420
Reduced Lunch	$279,605	$3,021,521	$294,651	$3,184,114	$278,352	$3,007,972

Appendix C: Summary of HSM4A messaging

The school community perspectives survey included 2 questions aimed at understanding how convincing specific framing of statements (either in support of or in opposition to passing legislation to make school meals available to all students at no charge) were. Respondents were shown a total of 10 statements, 5 for and 5 against and were asked to rate them from “very convincing” to “very unconvincing”.

Question 1: Respondents found all 5 statements provided to them in support of the legislation to make school meals available to all students at no charge convincing. This was consistent across all demographic and stakeholder groups. Only for the 5th question, which touched on the idea of stigma, did the overall support fall below 90% in the full sample (Figures C1.1-1.5)

Figure C1.1. *A school meal at no charge often gives low-income children a nutritious meal that they might not otherwise get.*

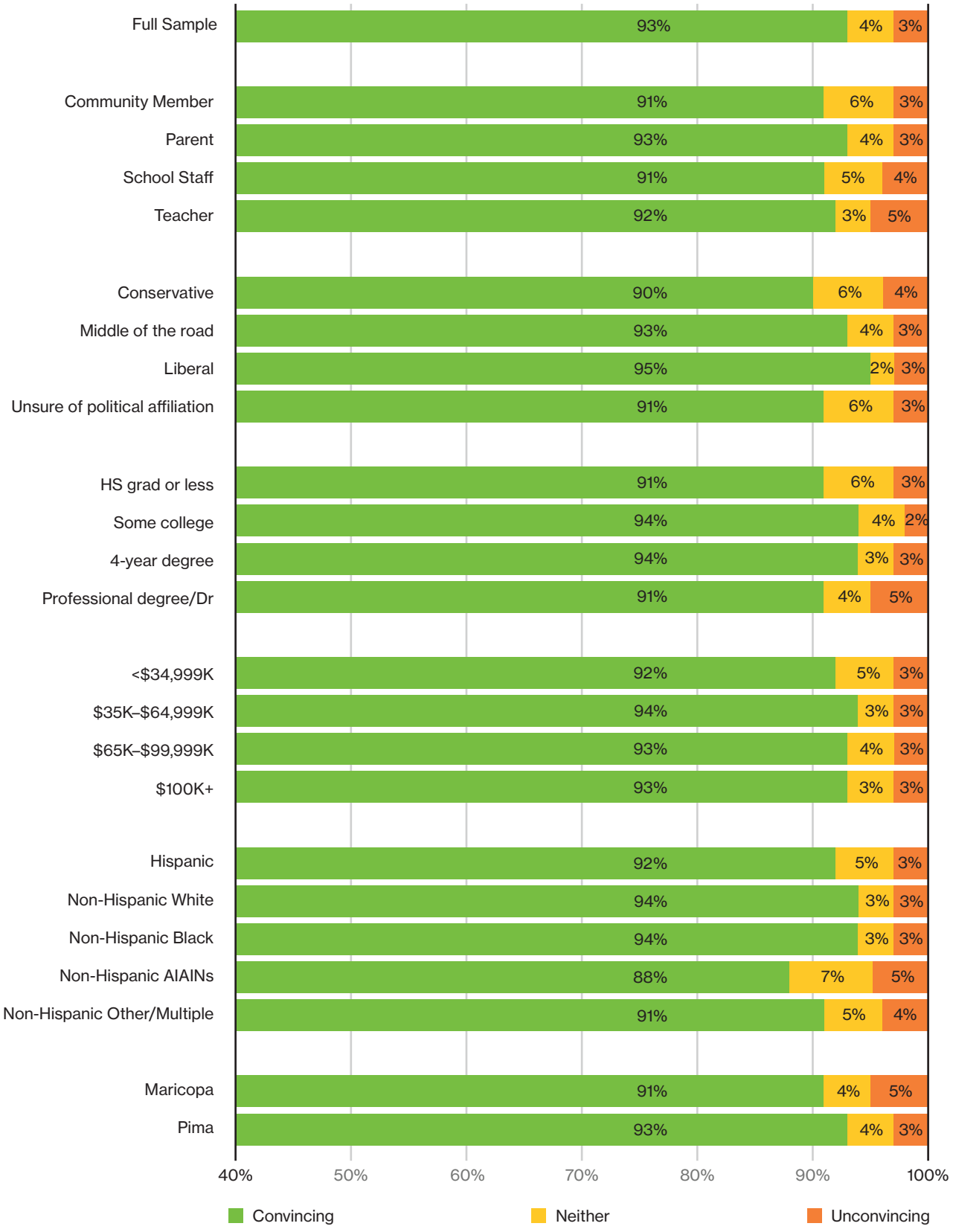


Figure C1.2. *Many struggling families, including those with annual incomes as low as $30,000, don't currently qualify for free meals. This policy will help many families and children who are barely getting by.*

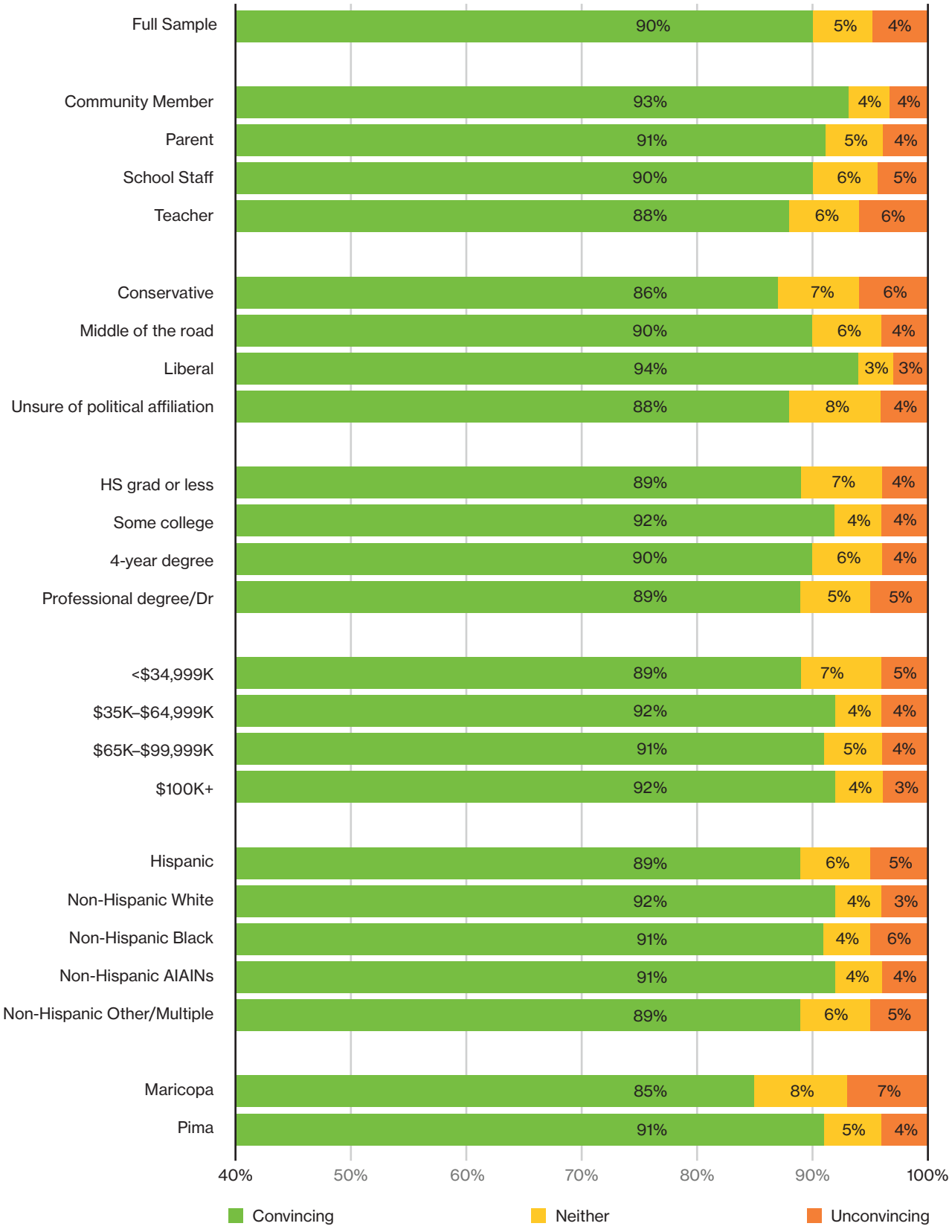


Figure C1.3. *School meals are important for academic success. Studies have shown participation in school meals improved students' attendance, behavior, and academic achievement.*

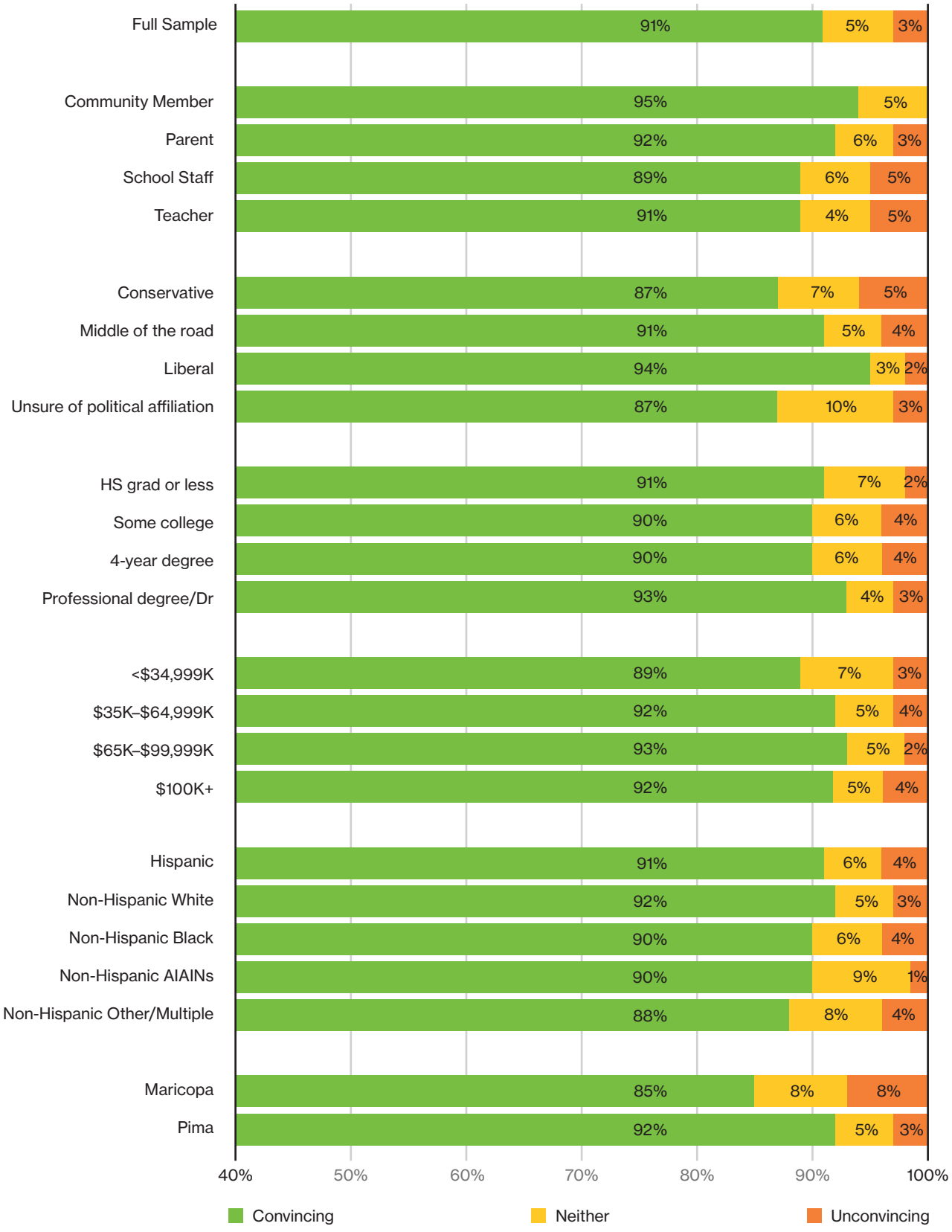


Figure C1.4. *School meals enhance child development and school readiness. Giving every child the option to get a healthy meal during the school day will help them be the best student they can be.*

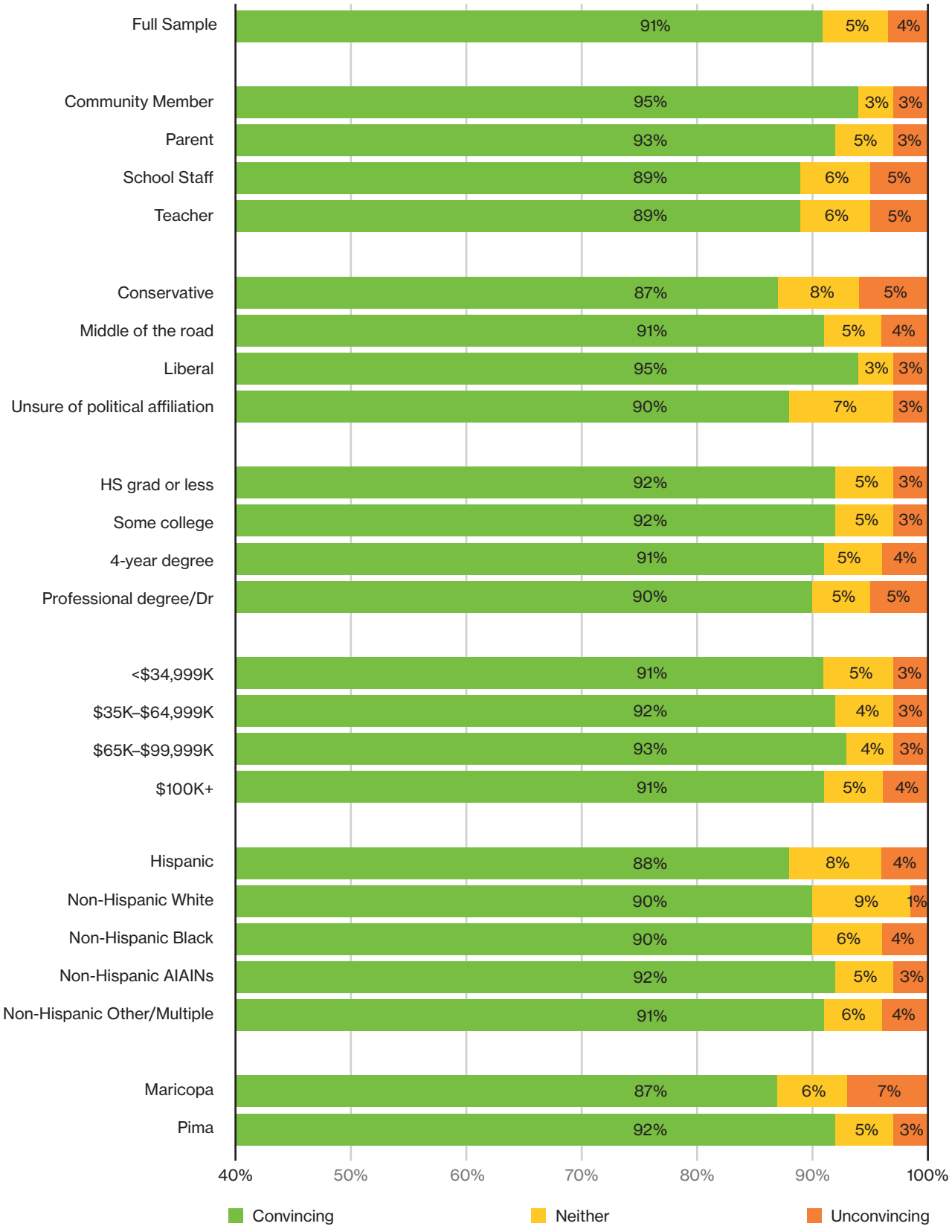
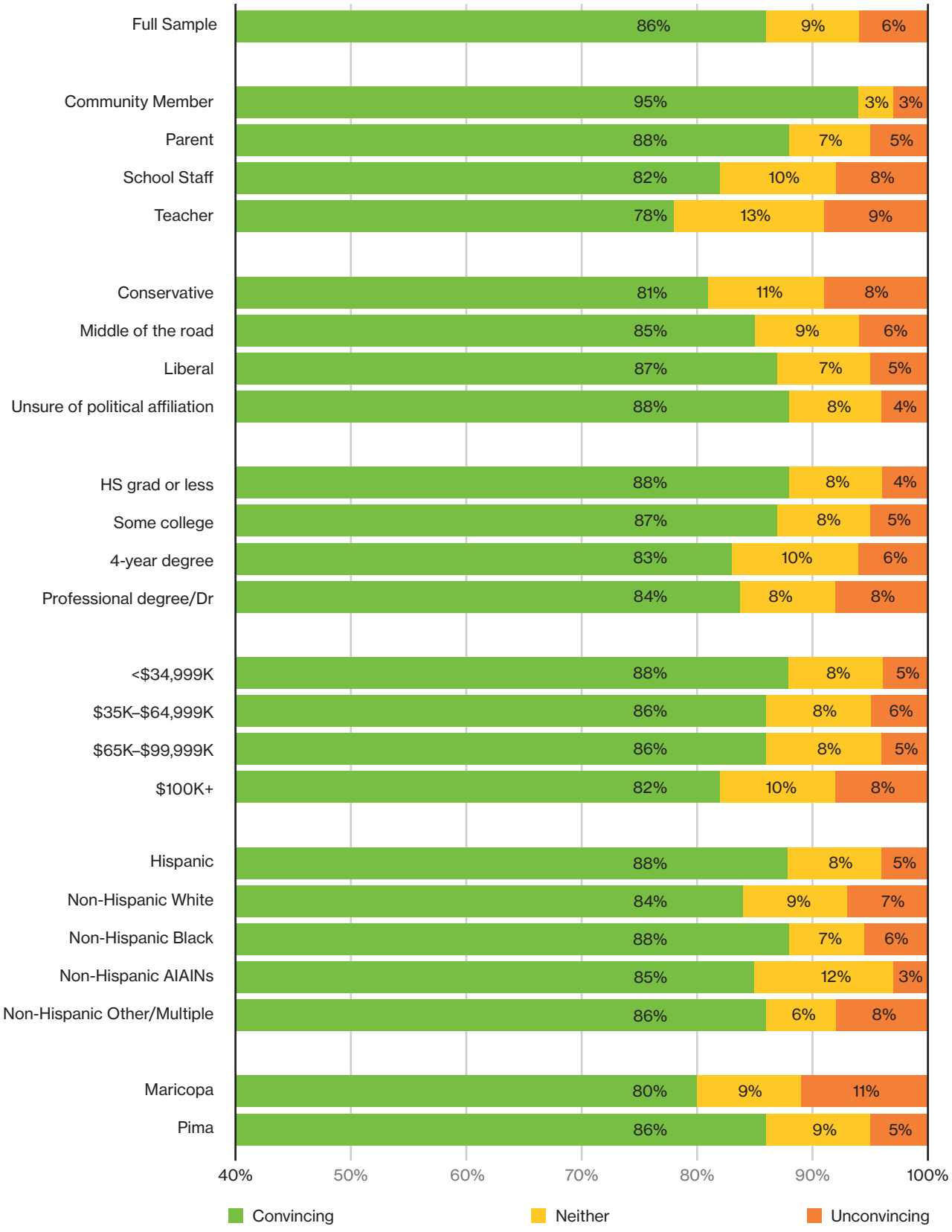


Figure C1.5. *Offering school meals to all students at no charge will reduce the stigma associated with eating school meals and remove embarrassment due to unpaid school meal debt.*



Question 2: Respondents did not find the arguments against the legislation to provide meals at no-cost to students as convincing (Figures C2.1-2.5) as they found the statements presented in support of the legislation. The most convincing arguments against the legislation were related to making current school meals more appealing (47%, Figure C2.5) and fixing problems related to the current payment system and food waste (44%, Figure C2.1). Respondents with conservative leanings found these statements to be more convincing than respondents with liberal leanings did (55% and 56% vs. 36%, for both statements).

Figure C2.1. *The federal government loses billions of dollars due to improper payments and wasted food that is thrown away rather than eaten. We should fix these problems before expanding the school meal programs.*

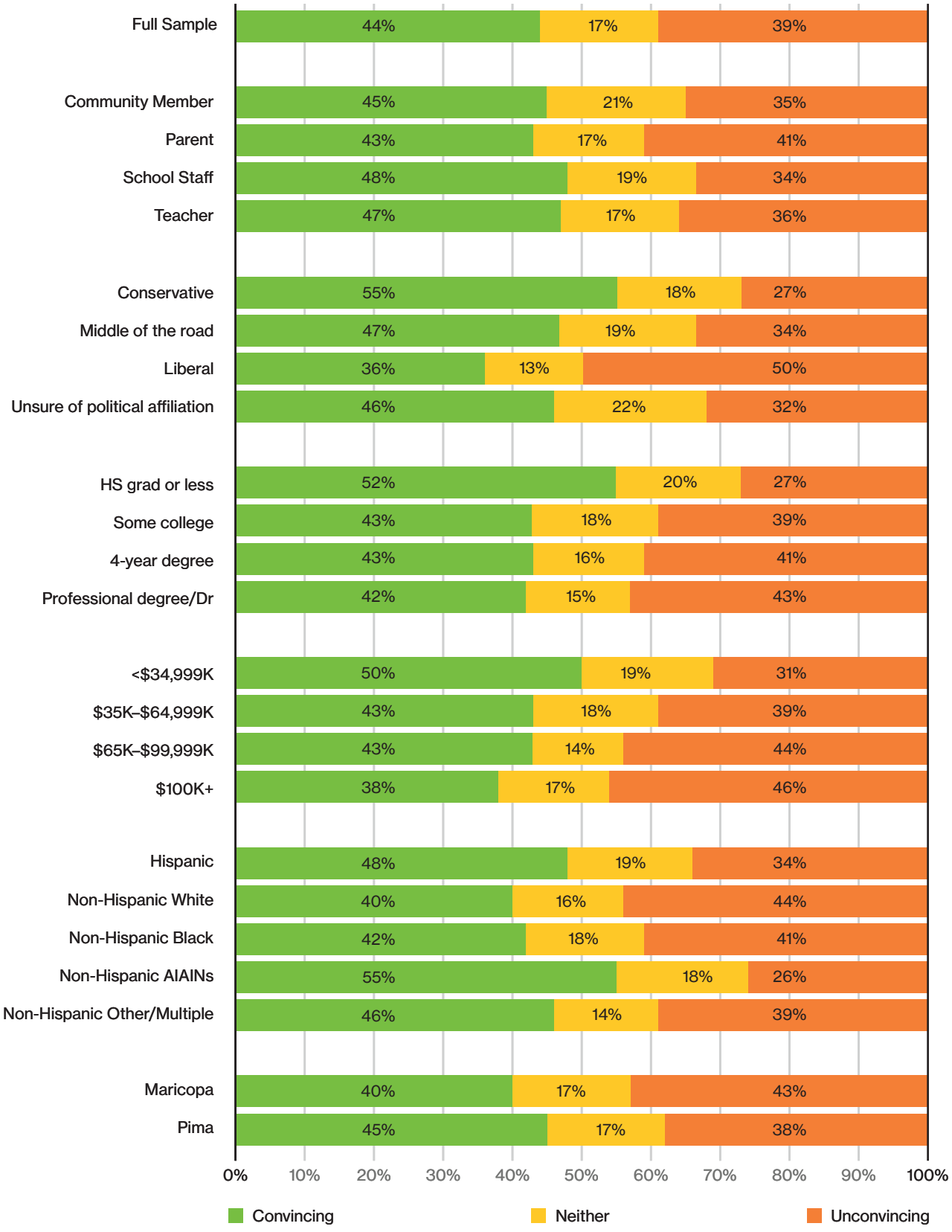


Figure C2.2. *Students from wealthy backgrounds would be able to participate even though they can afford to pay for their lunch. Instead of helping well-off students, the program should be devoted to helping those in need.*

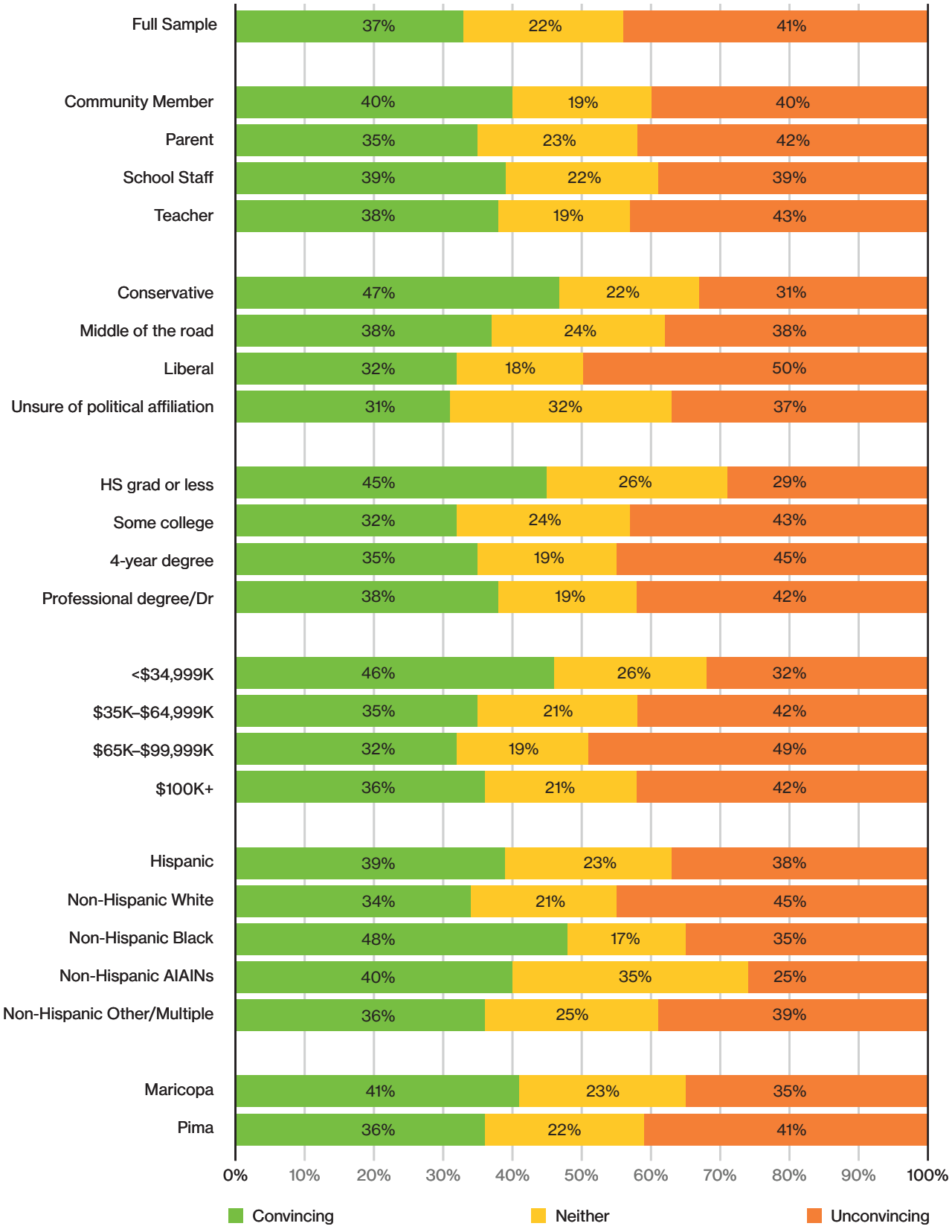


Figure C2.3. *The program will serve not only low-income children but all children whose parents won't prepare a home-packed meal for their child. It should be the responsibility of capable parents, not the school, to make sure their child is fed.*

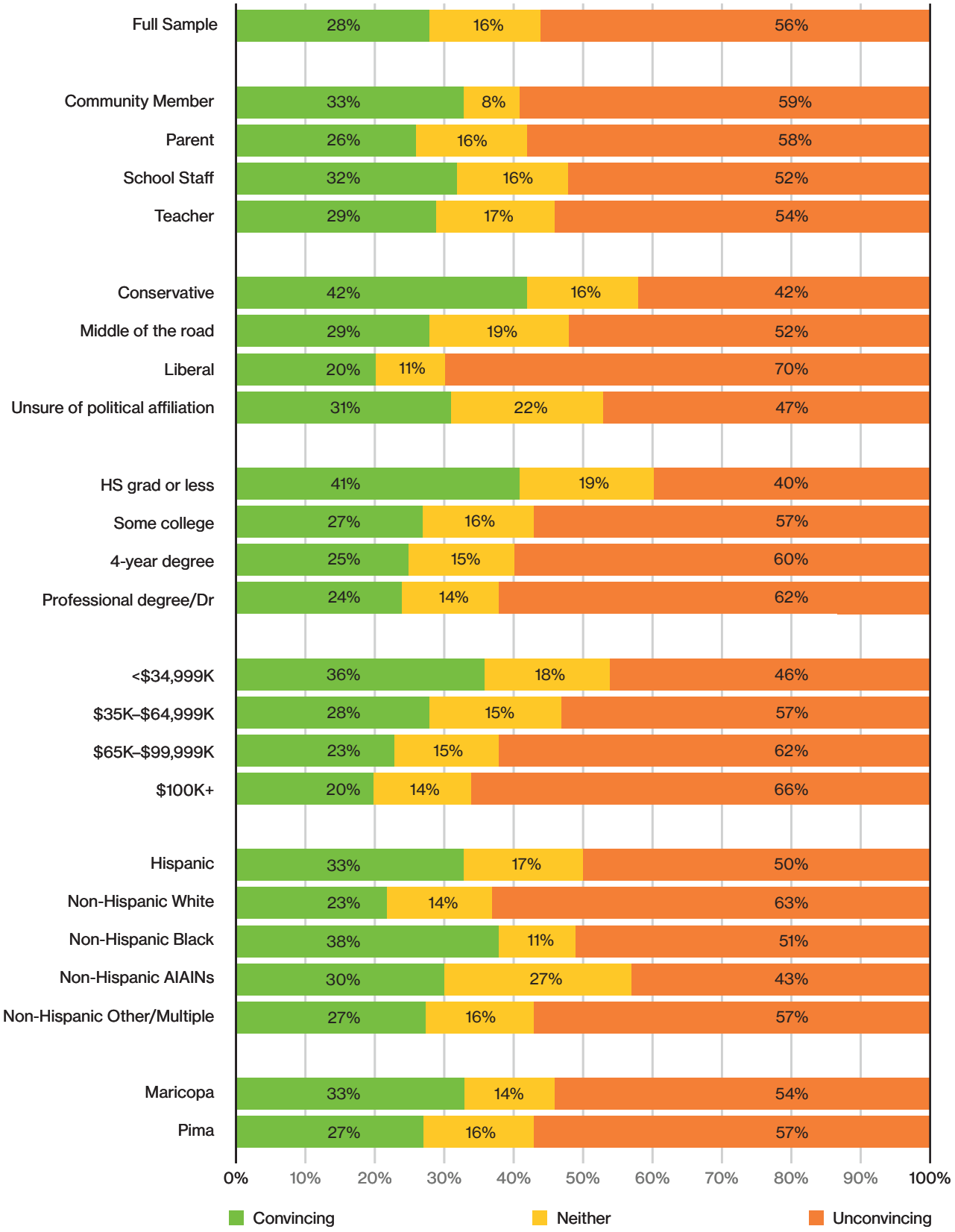


Figure C2.4. *School meals at no charge would be an irresponsible use of taxpayer dollars. While schools around the country are already struggling to operate, we can't afford to give meals at no charge to every student.*

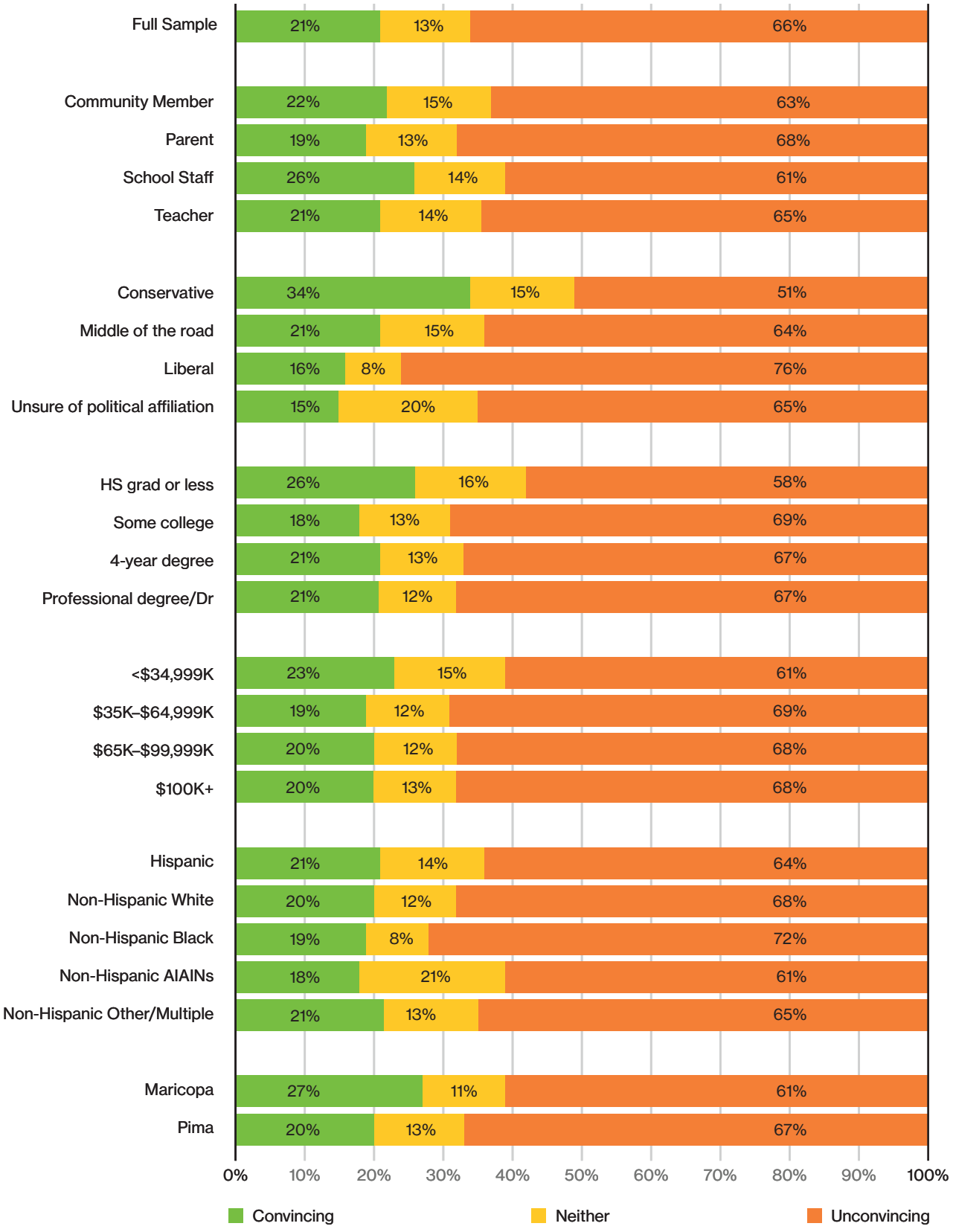
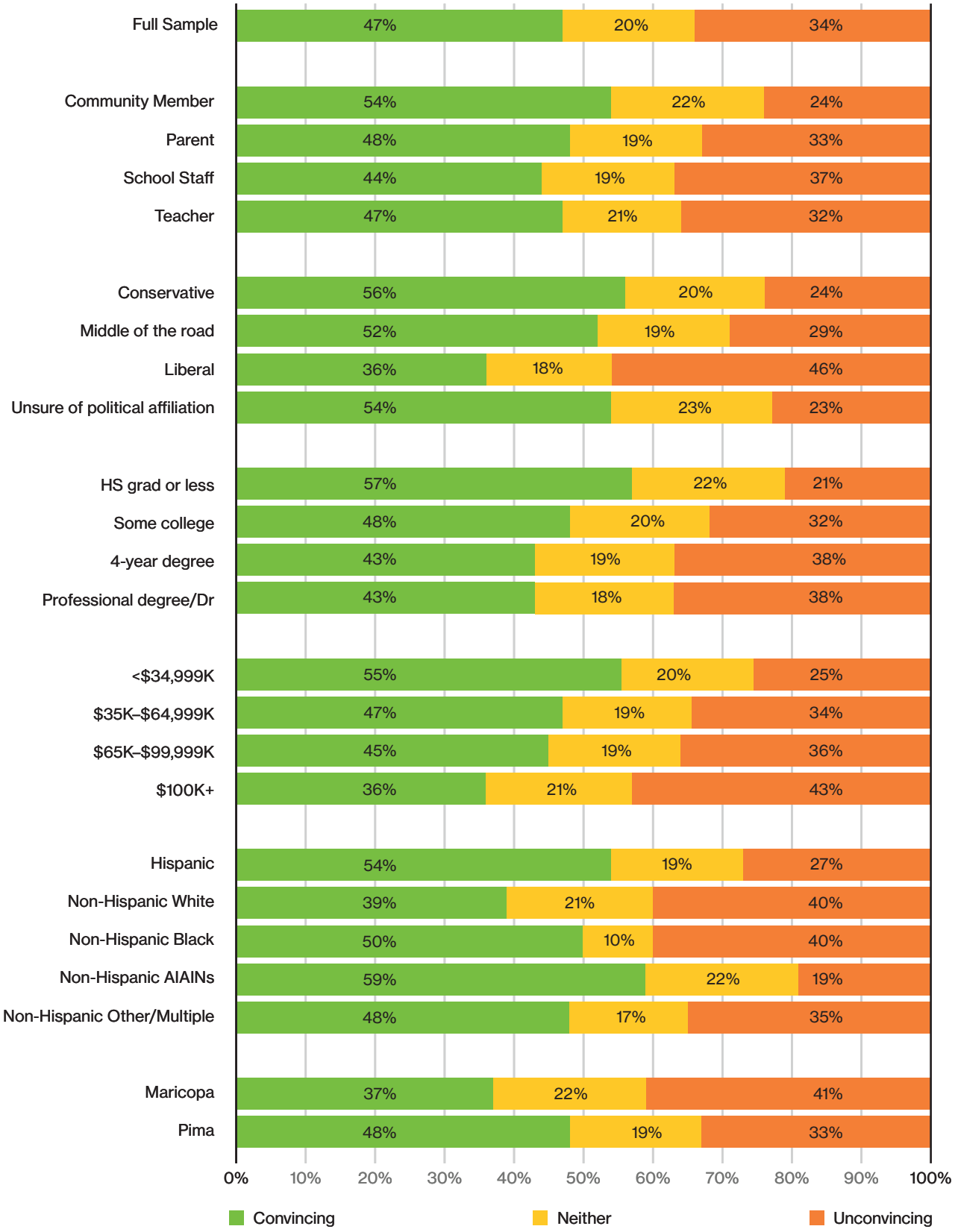


Figure C2.5. *Low-income children are already eligible for meals at no charge, but many don't participate. Instead of giving meals at no charge to students who can afford to buy lunch, the government should make school meals more nutritious and appealing.*



Question 3: In the final messaging question, respondents were given 5 statements related to school meals and were asked to choose if each statement was a "reason to support" or "reason to oppose" providing school meals to all students regardless of income or if the statement was "not a reason either way" (Figures C3.1-3.5). None of 5 statements were overwhelming identified as a "reason to oppose" the legislation. Most respondents agreed that improved dietary intake (86%) and access to programs that alleviate food insecurity (92%) were reasons to support the legislation. Pre-pandemic participation barriers (such as stigma or administrative errors) had the highest proportion of respondents select "not a reason either way".
Please note that in the figures below, the x axis starts at 50% to improve the visualization of the bars reporting smaller percentages.

Figure C3.1. *Studies show that students who receive school meals eat more fruits, vegetables, and other healthy foods.*

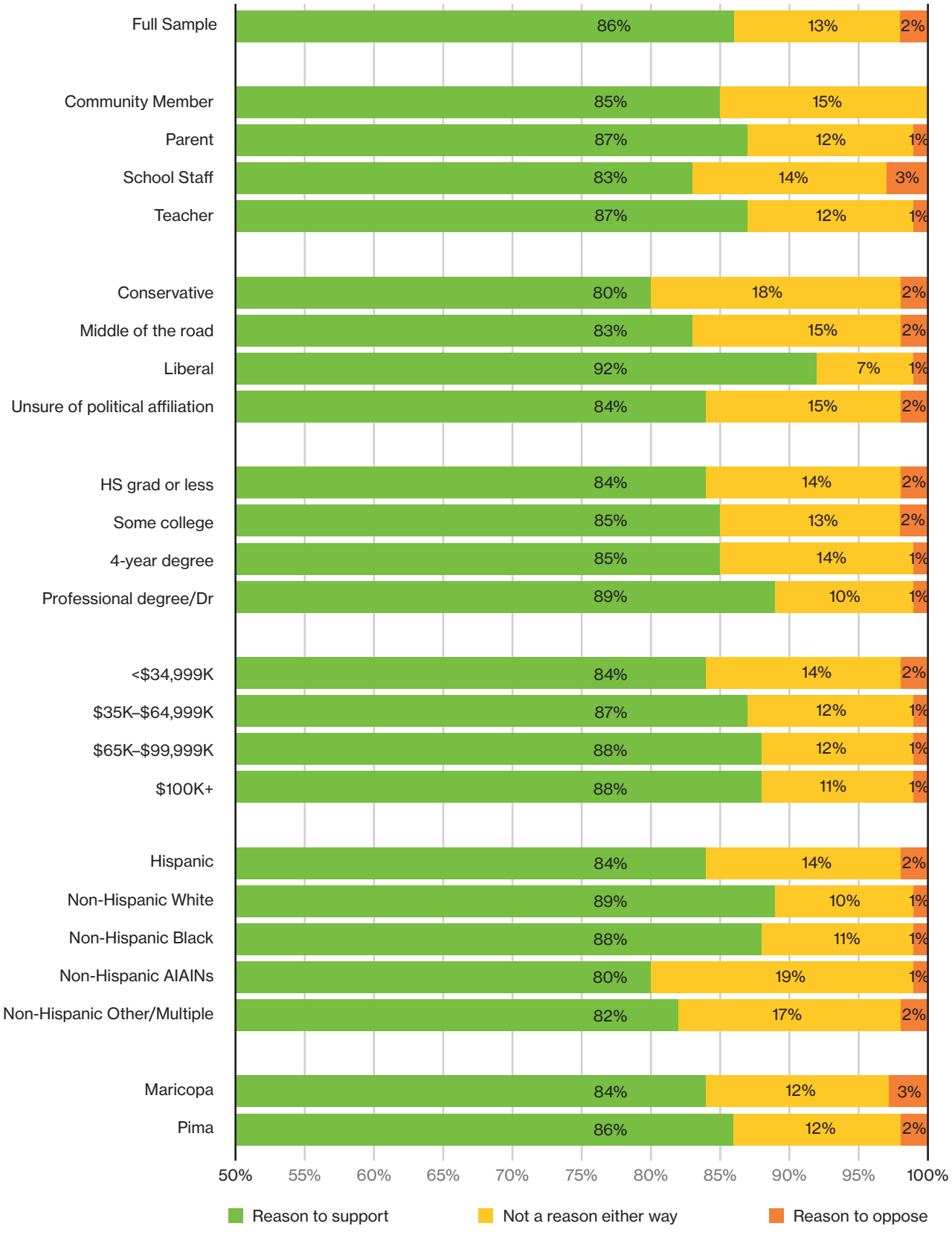


Figure C3.2. *In arizona, almost 65,000 children live in food insecure households and are not eligible for federal food assistance.*

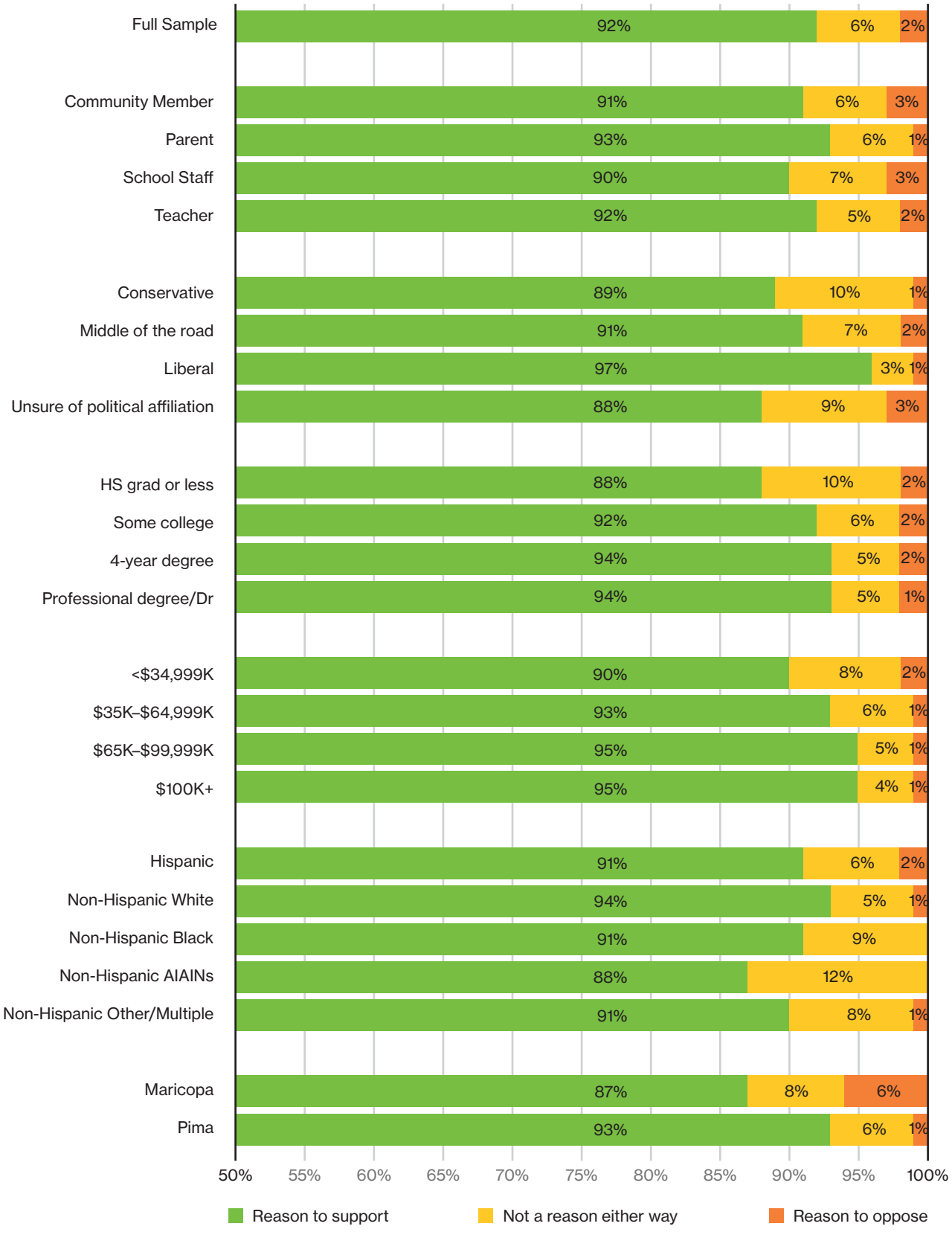


Figure C3.3. *In schools that have made free school meals available to all students, the number of breakfasts served increased by approximately 10% and lunches by 5%.*

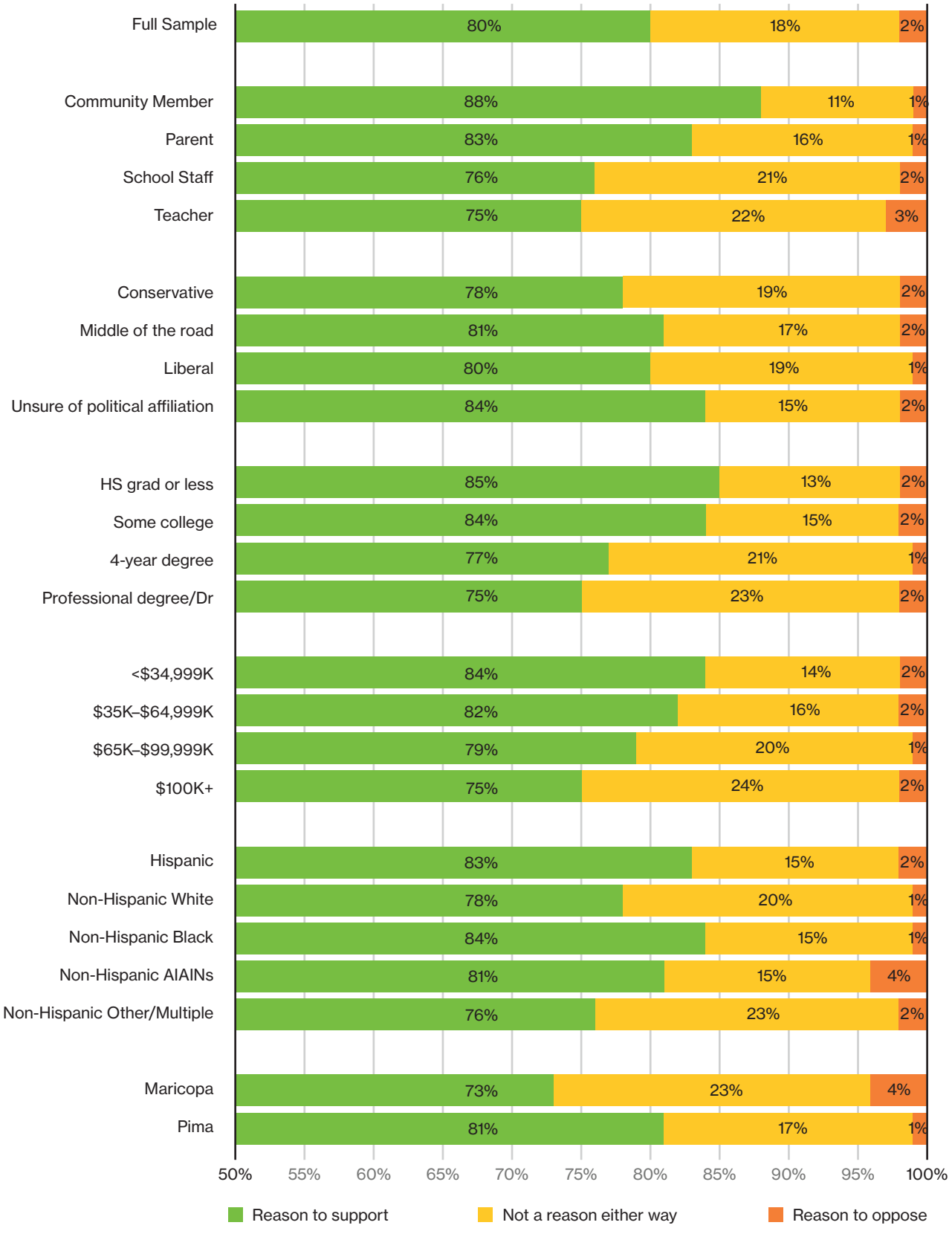


Figure C3.4. *Most students with family incomes above $30,000 do not currently qualify for free meals.*

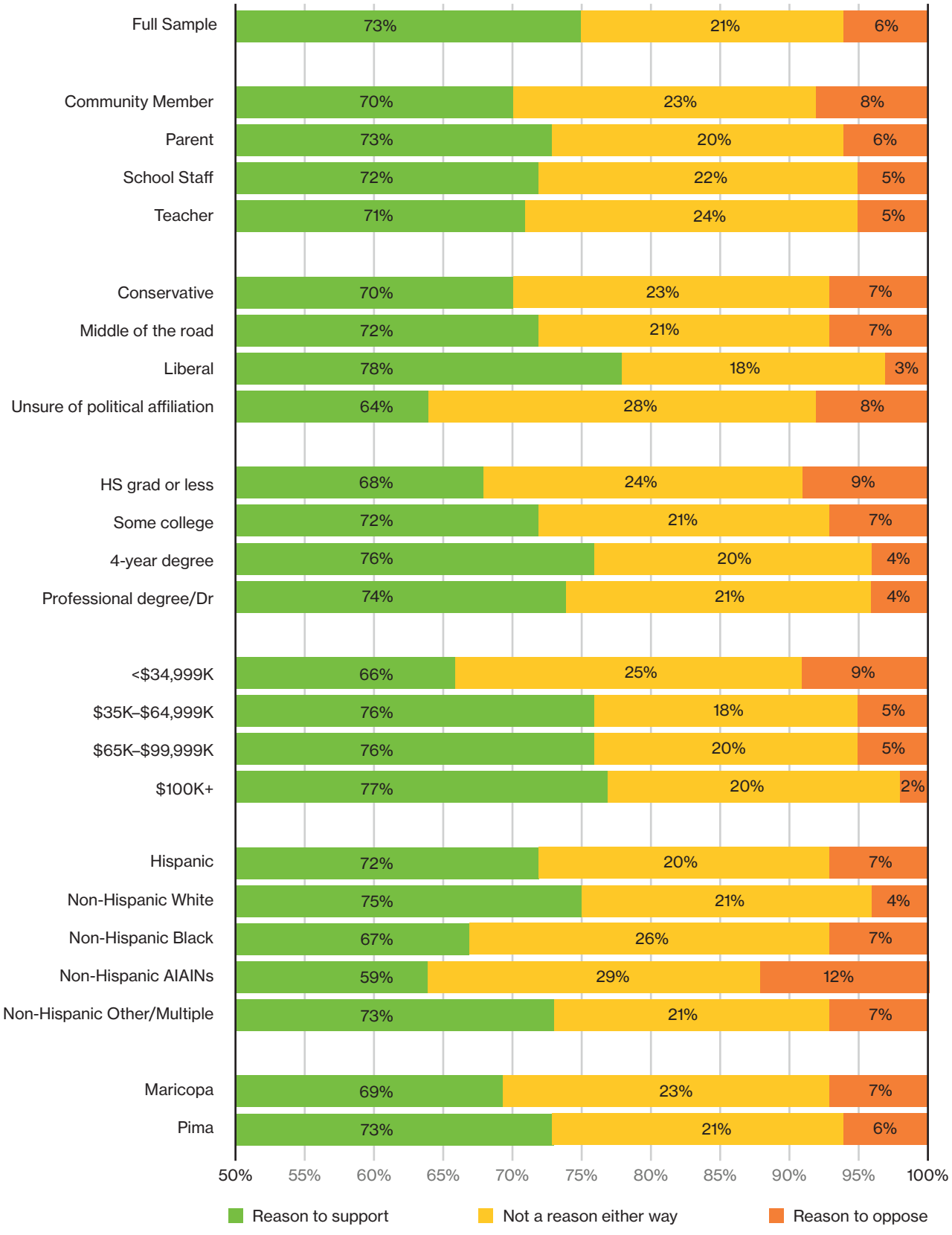


Figure C3.5. *Before the covid-19 pandemic, millions of students who qualified for free and reduced-cost meals did not participate because of stigma, administrative errors, and other barriers.*