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Executive Summary

Despite qualifying as income eligible, many Massachusetts families do not access SNAP (Supplemental Nutrition Assistance Program) benefits. Due to the sharp increase in the cost of living, especially the cost of housing and food expenses, more families are facing food insecurity. Thus, it is critical to ensure that families in need receive SNAP benefits. While previous studies have examined racial disparities, there is a limited focus on Asian American families. Even fewer studies disaggregate data to explore disparities among Asian American ethnic subgroups. Further, few studies have addressed disparities in SNAP receipt specifically for income eligible families.

The purpose of this study was to identify racial disparities and disparities in SNAP receipt among Asian American subgroups for income eligible families. This study also explored the extent to which English fluency, immigration status, education level, and employment status determine recipience of SNAP benefits in Massachusetts. American Community Survey 5-year data (ACS 2016-2020) were used to analyze racial-ethnic disparities in receiving SNAP among income eligible families in Massachusetts (those with total incomes at or below 200% of the Federal Poverty Level (FPL)).

The results revealed that among families that are income eligible to receive SNAP benefits, Asian American and White families generally were not different in SNAP receipt. However, income eligible Asian American families with a bachelor's degree were more likely than White families to receive SNAP. The interaction terms also indicated that even at different levels of education, income eligible Asian American families tend to be less likely to receive SNAP than Black and Hispanic families. The analysis of subgroups revealed that income eligible Cambodian families are more likely than income eligible Chinese families to receive SNAP. These results suggest the counterintuitive recommendation that policymakers should pay closer attention to Asian Americans with higher education levels, who may be reluctant to access SNAP benefits even when food insecure. The report concludes with additional implications for policy and directions for future research.

Introduction

To make ends meet, low-income families rely on public assistance, which enables access to essential needs such as nutritious food and health care (Van Der Wees et al., 2013), thus reducing poverty (Sommers & Oellerich, 2013). In Massachusetts, two of the most common public benefit programs for low-income working adults are MassHealth (Medicaid) and SNAP (Supplemental Nutrition Assistance Program) (Budiman & Ruiz, 2021b; Carey, 2018). Yet, in 2021, approximately 700,000 individuals who lived in Massachusetts and were income eligible to receive SNAP benefits, did not receive them (Health Leads, 2021; McAleer et al., 2021). Unlike health insurance, there is no requirement to access SNAP in Massachusetts, which may contribute to an underutilization of SNAP benefits even for eligible families.

Women, people of color, foreign-born residents, and people without college degrees are overrepresented among SNAP eligible families, with gross incomes below 200% of the Federal Poverty Level (FPL) (Baron et al., 2014). They are vulnerable to occupational hazards and poor health (Krieger et al., 2011), and struggle with the dual responsibilities of earning and caring for family members. Public assistance for families of low-income workers is critical for economic security, and SNAP reduces food insecurity.

Asian Americans make up 6.3% of the U.S. population, with 5.1% experiencing poverty. However, overall poverty rates obscure wide variation among Asian American subgroups (Creamer et al., 2022). For example, in 2019 Mongolian Americans had the highest percentage of poverty among Asian American subgroups at 25.0%, while Indian Americans had the lowest rate at 6.0% (Budiman & Ruiz, 2021a).

SNAP receipt disparities among Asian American families who are income eligible for SNAP are not well understood. Previous studies on race and SNAP have focused on *overall* racial-ethnic groups. For example, research by Hartline-Grafton et al. (2019) showed that SNAP recipients vary across different races and ethnicities. In the US, the highest percentage of SNAP receipt was among White families (37.0%), followed by Black families and Hispanic families (26.0% and 16.0% respectively).

Asian Americans had the lowest rate (3.0%) (Hartline-Grafton et al., 2019). In contrast, in Massachusetts, the rates of Hispanic, Black, Asian American, and White families receiving SNAP were 33.0%, 26.0%, 10.0%, and 9.0%, respectively (Smithwick, 2020).

A few studies have investigated disparities in SNAP receipt among Asian American subgroups (Kochhar, 2018; Tran, 2018). For example, Tran (2018) showed that some Asian American subgroups received SNAP at rates as high as 67.0% (Bhutanese), whereas others were severely underrepresented. Only 2.4% of Thai Americans received SNAP even though their poverty rate was 16.7%, and 3.8% of Vietnamese Americans received SNAP while their poverty rate was 15.3% (Tran, 2018). Differences in poverty rates for Asian American subgroups may stem in part from the differences in immigration patterns and discriminatory laws (for a brief review of this historical context, see Appendix (1)). However, these studies do not explain the disparities in receiving SNAP benefits specifically for those who are income eligible.

This study first examines racial disparities for eligible families receiving SNAP in Massachusetts. The study then addresses a gap in knowledge and examines the disparities in SNAP receipt for families of Asian American subgroups who are eligible for SNAP. This study uses American Community Survey 5-year data (ACS 2016-2020) to analyze racial-ethnic disparities in receiving SNAP among income eligible families. We use the term *SNAP eligible* families to refer to families with total income at or below 200% of the Federal Poverty Level (FPL), thus making them income eligible for SNAP in Massachusetts. The study also examines variation in English fluency, education level, immigration status, and employment status among Asian American subgroups.

Literature Review

To better understand what is known about the factors that influence access and utilization of public benefits, we conducted a literature review. For our literature review, we undertook a systematic search of US research focused on primary empirical studies. Electronic searches were performed using the following data

bases: Google Scholar, UMBrella (University of Massachusetts Boston's search engine), ProQuest, and AAPI Nexus (Asian Americans & Pacific Islanders Policy, Practice and Community). Search terms included: Asian American, SNAP, public benefits access and utilization, discrimination, and racial disparities.

English Fluency

Several studies have indicated that an applicant's level of English fluency can be a barrier to applying for SNAP. Project Bread conducted a survey on barriers to SNAP receipt in Massachusetts; the survey suggested that the ability to apply for SNAP in a language other than English affected respondents' decision to apply for SNAP (Avila et al., 2021). Research has shown that language is a common barrier in accessing SNAP among older immigrants, aged 60 and older (Wilde & Dagata, 2002). In addition, homeless populations with limited English language skills were less likely to receive food stamps (Algert et al., 2006). Louie et al. (2020) suggested that culturally appropriate in-language SNAP materials and multilevel interventions are necessary to reduce barriers and increase SNAP participation rates among low-income Asian American populations.

Immigrant Status

Research suggests that immigration status is a strong predictor of access to public benefits. Lawful Permanent Residents (LPR), Qualified Aliens, and the children of non-citizens are eligible to receive SNAP (Carrillo, 2021), but do not always access it. Analyzing data from the California Women's Health Survey (2002-2004, n=1932), one study found that foreign-born women (who likely had at least one child born in the US) were less likely to use benefits than US-born women. Respondents reported concerns about their US-citizenship status (Kaiser, 2008).

Touw et al. (2021) analyzed data from the 2019 American Community Survey. Their study showed that 1.3 million immigrants did not receive SNAP assistance because they feared deportation under the Trump administration's revised public charge rule, which defined a public charge as someone who is likely to at any point become largely dependent on the government for subsistence (Touw et al., 2021). In addition, due to fears about their LPR status, adults in immigrant households

avoided non-cash government services, with half of them avoiding applying for SNAP and other public benefits in 2019 (Bernstein et al., 2020). Overall, research findings suggest that immigrants are less likely than the US native-born population to access and utilize public benefits (e.g., SNAP, health care, and employment benefits) because they fear they will lose their citizenship (Bustamante & Wees, 2012).

Education

Research has shown a relationship between educational attainment and SNAP access. Cheng and Tang (2015) examined the relationship between receiving TANF (Temporary Assistance for Needy Families) and the utilization of SNAP by low-income families using secondary data, with 54,703 persons in the representative sample. They discovered that there was a negative correlation between the likelihood of SNAP use and both educational attainment and occupational skill level. That is, individuals who had not completed high school were more likely to receive SNAP benefits than high school graduates (Cheng & Tang, 2015).

Using a snowball sampling method, Pinard et al. (2016) summarized data from both peer-reviewed and grey literature about factors that affect SNAP participation. The authors concluded that higher SNAP participation is associated with lower high school graduation rates (Pinard et al., 2016), likely because income inequality in the US is largely attributed to a lack of high school education. Importantly, 54.0% of Asian Americans in the US have a bachelor's degree or higher (Budiman & Ruiz, 2021a), and educational attainment has a negative influence on access to SNAP. There remains a need to explore the relationship between educational attainment and benefit access within Asian American subgroups.

Employment Status

Previous research has investigated whether employment status is related to access to SNAP. Studies have shown that SNAP recipients are likely to be low-income workers (Albelda and Carr, 2014): Government Accountability Office analysis (GAO-

21-45, 2020) revealed that approximately 70.0% of adult working adults enrolled in SNAP worked full-time hours (i.e., 35 hours or more) on a weekly basis.

The precarious nature of low-wage employment may influence access to SNAP. In one study, 60.0% of SNAP recipients were in the labor force, but about half were employed in unstable work (Bauner & Schanzenbach, 2018). Almost 40.0% of SNAP recipients were unemployed or seeking employment (Bauner & Schanzenbach, 2018). Another study found that families were likely to rely on SNAP assistance when an adult was working and earning wages and one wage-earner lost a job, their hours were reduced, or they turned to a lower-paying job after being fired (Rosenbaum, 2013). Yet another study found that some SNAP participants were out of work for short- or long-term periods, and these SNAP participants worked in low-paying service-related industries and occupations (Keith-Jennings & Chaudhry, 2018).

Temporarily unemployed, childless adults do not qualify for most public assistance, such as unemployment insurance (UI), affordable health care, and housing assistance, and SNAP is one of the few forms of support that are available to them (Carlson et al., 2016). Given the precarity of employment for low-wage workers, access to SNAP is critical for both unemployed and employed workers. There is a need to further investigate these findings to explore whether racial disparities affect the relationship between employment status and access to SNAP, especially for Asian American subgroups.

In summary, the research reveals several factors that affect access to public benefits, including language barriers, immigration status, citizenship status, educational attainment, and employment status. Most of the studies are focused on Black and Hispanic families with little attention given to Asian Americans (Cook et al., 2017), and even less attention given to subgroups of Asian Americans. Thus, while we have some understanding of racial disparities in public benefits, little is known about disparities among Asian American subgroups. Since SNAP benefit administration varies from state to state, this study will focus on Massachusetts, which is diverse in SNAP recipients in terms of race, ethnicity, and age (US Census Bureau, 2023).

Research Questions

1. What are the racial disparities in receiving SNAP among eligible families in Massachusetts?
2. What are the disparities in receiving SNAP among eligible families of Asian American subgroups in Massachusetts?
3. To what extent does 1) English fluency, 2) immigration status, 3) education level, and 4) employment status determine SNAP recipience in Massachusetts for Asian American subgroups?

Data

We used the Massachusetts five-year American Community Survey (ACS) 2016-2020, which is made available by IPUMS.[1] ACS data provides household and person samples in Massachusetts. The ACS survey captures household and individual demographic information, including public benefits, employment, income, education, poverty, health insurance, and public assistance.

The sample in this study was made up of family heads who live in low-income households with a total family gross income at or below 200% of the FPL. We did not include other members of the family in our analysis other than the family head because SNAP is a public benefit provided to family recipients, not individuals. Capturing the family heads is a proxy for families. We focused on 200% of the FPL because this poverty level is the SNAP eligibility cutoff in Massachusetts. That means the sample in this study was made up of families that are income eligible to receive SNAP benefits. We also restricted the sample to family heads who were aged 18–64, which is considered working age. The key variable of our analysis was whether low-income SNAP eligible family heads received SNAP. The sample of eligible family heads included 20,905 observations, while the Asian American subgroup sample included 1,925 observations.

[1] IPUMS: https://www.ipums.org/mission-purpose

Key Definitions

Families and family heads. We use the US Census Bureau's definition of a family, "A family group is any two or more people (not necessarily including a householder) residing together, and related by birth, marriage, or adoption living in the same housing unit" (US Census Bureau, 2021b). The Census Bureau defines the head of household or head of family (householder) as the person "who is the self-identified person holding the lease or mortgage." The Census gathers information about persons in households and people living in the same housing units. Individual members in the household are defined in relationship to the head of household, e.g., head, spouse, child, and so on. Using this information, we identified the heads of households. It is important to note that some households have sub-families residing. In this case, we used the information on relationships within the sub-family to determine the head of the sub-families as the reference person. The reference person is either a single parent of a child(ren) or a husband or wife of a married couple of the sub-family. However, we assumed that persons within a household shared resources, and thus that any employed persons (earners) within the household besides the family head influence the decision to apply for SNAP benefits.

SNAP. The Supplemental Nutrition Assistance Program (SNAP) is a US federal government program that aims to provide low-income families, families of low-income older adults, and people with disabilities access to nutritious food. Through this program, the government provides monthly funds through Electronic Benefit Transfer (EBT) cards so that SNAP recipients can use them to purchase food in retail stores (Caswell et al., 2013). Massachusetts sets the eligibility criteria for SNAP up to 200% of the FPL, meaning families with gross income at or below 200% of the FPL may be eligible for and receive SNAP benefits (Mass.gov, 2022a). To measure SNAP receipt, we assigned 1 to SNAP eligible family heads who reported that their family received SNAP assistance according to the ACS data, and 0 to SNAP eligible family heads who reported that they did not receive SNAP.

SNAP Eligibility. We used 200% of the FPL as the threshold to determine SNAP eligibility in Massachusetts; more specifically, the head of a family with a gross

income at or below 200% FPL. It is important to note that the poverty guideline of 200% of the FPL varies by family size and year, so to understand whether a family has their income at, below, or above 200% FPL, we used total family gross income in ACS 2016–2020, to compare with the poverty guidelines between 2016–2020 by family size. The poverty guidelines are a simplified version of poverty thresholds updated every year by the Department of Health and Human Services for administrative purposes such as determining financial eligibility for federal programs. See details in Appendix (2).

Race-Ethnicity. We used the Census Bureau's guide to develop a race and ethnicity variable *(Race-Ethnicity).* Racial categories in ACS data (2016-2020) include White, Black or African American, American Indian or Alaska Native, Chinese, Japanese, Other Asian or Pacific Islander, Other race, and Two or more major races. The ACS data includes information on assigned single races (e.g., White, Black, Asian American Indian, and Pacific Islander). We tabulated a single race (Pacific Islander) variable with racial categories to separate Asian and Pacific Islanders. Therefore, the Asian category in this analysis is a combination of Japanese, Chinese, and other Asian subgroups but does not include Pacific Islander. We decided to include American Indian or Alaska Native (AIAN) and Pacific Islander (PI) in the Other races category because of the small number of observations within AIAN and PI.

There were respondents who identified themselves as belonging to two or more races, a combination of White, Black, Asian, Hispanic, Alaska Native, and other races. While racial classification is typically based on an individual's biological characteristics, we do not know how people who identify with two or more races personally prefer to view themselves (if at all) as any one of their reported races. As a result, we classified the group of people with two or more races as Multiracial.

This process resulted in five race categories (White, Black, Asian American, Other race, and Multiracial). The ACS survey also recorded ethnicity, whether a person is of Hispanic origin. Using the information on race categories and ethnicity, we coded the race-ethnicity of individuals into 6 categories (1=White, non-Hispanic, 2=

Black, non-Hispanic, 3=Asian American, non-Hispanic, 4=Hispanic, 5=Other race, non-Hispanic, and 6= Multiracial, non-Hispanic)

Asian American subgroups. One of our objectives was to examine public benefit utilization among Asian American subgroups. ACS data has a general variable version of race that allowed us to capture specific Asian subgroups by tabulating with the variable Race-Ethnicity. We disaggregated the Asian American subgroups into six categories: 1) Chinese, 2) Indian, 3) Vietnamese, 4) Korean, 5) Cambodian, 6) Other Asian. We created these categories based on the number of persons in each category. For example, Chinese, Indian and Vietnamese, Korean, and Cambodian have the highest number of family heads in ACS, followed by the remainder of the subgroups. We included the rest of the Asian American subgroups in a group called Other Asians.

Education level. We categorized education into five categories based on the individual's highest level of educational attainment as follows: 1) high school diploma or lower, 2) some college (1 year of college), 3) associate (those who had 2 years of college), 4) bachelor (BA) (4 years of college), and 5) master (MA) or higher (5 years or more of college).

Employment status. We used three categories of employment status: 1) employed, 2) unemployed, and 3) not in the labor force. Not in the labor force is defined by the US Bureau of Labor Statistics as a person who is neither working nor seeking work. This group includes students, retired people, and those who are taking care of children or other family members.

Citizenship status. The Census Bureau categorizes citizenship status into five categories: 1) Born in the US, 2) Born in Puerto Rico or another outlying area of the US, 3) Born abroad of US citizen parents, 4) Naturalized citizens, and 5) Non-citizens (US Census Bureau, 2021a). In this study, we combined three categories: 1) persons who were born in the US, 2) in other outlying areas of the US, and 3) those who were born abroad of US citizen parents, into one category, "Citizen." We kept naturalized citizens as a separate category, "Naturalized," because this group may matter for Asian Americans who were born abroad and naturalized as citizens later after living in the US for a certain period of time. Last, we categorized non-

citizens into three groups based on their years of living in the US, because time spent living in the US may determine SNAP receipt. As a result, the citizenship status variable has five categories: 1) Citizen, 2) Naturalized, 3) non-citizen in the US 0–5 years, 4) non-citizen in the US 6–15 years, and 5) non-citizen in the US 16 years or more.

Descriptive Statistics

Table 1 provides basic statistics of the sample of heads of families that were income eligible for SNAP in Massachusetts between 2016-2020. Of the overall sample of eligible family heads, only a third (33.0%) received SNAP between 2016-2022: 51.8% of Hispanic family heads, 43.3% of Black family heads, 40.6% of family heads in the Other races group, 37.0% of Multiracial family heads, 28.7% of White family heads, and 13.4% of Asian American family heads received SNAP. Among eligible families, Hispanic and Black households had the highest percentage of SNAP recipients. The data also showed that 59.8% of family heads in SNAP eligible families in Massachusetts were women, and 27.0% of eligible family heads had an advanced education level (BA or higher), while close to 50.0% of the eligible family heads had obtained a high school diploma or a lower education level. There were racial-ethnic disparities in educational attainment. For instance, 40.0% of Asian American family heads, and 30.5% of White family heads had an advanced education level, while 15.8% and 11.4% of Black and Hispanics had advanced education levels, respectively.

Asian American family heads were the most likely to be 65 and older (5.1%), followed by Black (4.4%), and White family heads (3.0%). The Asian group also had the highest percentage of young family heads aged 18-24, at 36.5%, while young family heads aged 18-24 made up less than 20.0% of other race-ethnic groups (White 16.0%, Black 10.0%, and Hispanic 12.0%).

The patterns also indicated that SNAP eligible Multiracial family heads were most likely to be unemployed (9.7%), followed by Black (8.7%), and Asian American family heads (5.0%). Approximately 19.0% of Asian American families had at least one employed family member besides the family head, which is the lowest

compared to other racial-ethnic groups. Hispanics had the highest percentage of families with one employed member other than the family head (24.8%), while approximately 21.0% of Black and White family heads reported this (Blacks 21.6%, White 21.2%).

White Americans had the highest percentage of US citizenship among racial-ethnic groups (91.1%), followed by Hispanics (62.0%), and Asian Americans had the smallest percentage (18.1%). Asian Americans had the highest percentage of naturalized (28.5%) and non-citizens (less than 5 years) (39.0%).

A minority of the whole sample said that they were married (18.5%), 56.1% had never been married, 17.6% were divorced, 4.5% separated, and 3.2% widowed. However, among racial-ethnic groups, Asian Americans had the highest percentage of respondents who were married (27.2%), and who had never been married (62.4%). Whites had the highest percentage of divorced family heads (20.7%). Hispanic family heads were most likely to report that they were non-English speaking or that they did not speak English well (8.4% and 18.4% respectively), followed by Asian Americans (3.48% and 14.29%).

Table 2 provides basic statistics of the sample of SNAP eligible family heads among Asian American subgroups aged 18-64 in Massachusetts between 2016-2020. Cambodians had the highest percentage of SNAP recipients (46.1%), followed by Vietnamese (25.5%), and Indians had the lowest percentage of SNAP recipients (5.7%). The Chinese and Korean family heads both had less than the average likelihood of SNAP receipt, at 10.5% and 6.4% respectively.

Low educational attainment level was more likely among Cambodian and Vietnamese families. Close to 70.0% and 57.1% of SNAP eligible Cambodian and Vietnamese families had only a high school diploma or a lower education level. A large percentage of Chinese (50.0%), Indian (72.0%), and Korean (66.0%) family heads had an advanced education.

Table 1: Characteristics of Sample of SNAP Eligible Family Heads Aged 18-64 in Massachusetts by Race (2016-2020)

	Total (n=20,905)	Asian (n=1925)	Black (n=1733)	Hispanic (n=4101)	White (n=12,321)	Other (n=278)	Multiracial (n=547)
SNAP							
Eligible non recipient %	66.60	86.65	56.66	48.16	71.33	59.35	62.71
Eligible recipient %	33.40	13.35	43.34	51.84	28.67	40.65	37.29
Gender (female) %	59.84	51.32	63.01	66.91	58.12	60.43	65.08
Education %							
High school or lower	48.35	31.27	54.30	67.33	43.91	60.43	41.13
Some college	17.02	15.79	19.85	15.26	17.42	18.71	15.90
Associate	7.25	2.75	9.00	5.90	8.07	6.83	9.51
Bachelor	19.48	31.32	11.94	8.58	22.34	10.79	23.58
MA or higher	7.89	18.86	4.90	2.93	8.27	3.24	9.87
Employment status %							
Employed	51.24	47.74	56.26	54.40	49.93	57.19	50.46
Unemployed	6.49	5.04	8.71	6.58	6.24	5.76	9.69
Not in labor force	42.27	47.22	35.03	39.01	43.83	37.05	39.85
Have adult 65 and older %	3.33	5.14	4.39	3.19	2.96	3.96	2.56
Disability %	29.95	9.87	32.03	34.72	31.13	27.70	32.91
At least one employed family member %	21.63	18.60	21.58	24.75	21.20	20.86	19.20
At least one child under 18 %	30.75	23.69	41.26	48.18	24.16	44.24	32.91
Age group %							
18-24	17.18	36.52	10.21	12.56	16.63	10.79	21.57

25-44	39.60	39.27	45.01	51.09	34.62	51.08	43.69
45-64	43.22	24.21	44.78	36.36	48.75	38.13	34.73
Citizenship %							
Citizen	75.09	18.13	58.80	62.01	91.13	50.72	76.42
Naturalized	10.64	28.52	23.72	15.78	4.14	20.14	9.51
Non-citizen in US 0-5 years	7.64	38.96	6.52	7.34	2.84	12.23	9.14
Non-citizen in US 6-15 years	3.40	9.82	5.48	7.12	0.79	7.19	3.11
Non-citizen in US 16+ years	3.22	4.57	5.48	7.75	1.10	9.71	1.83
Marital status %							
Married	18.52	27.22	18.23	20.09	16.78	21.58	14.63
Separated	4.53	1.82	6.46	8.56	3.36	4.68	4.02
Divorced	17.69	6.49	15.12	15.41	20.65	15.83	16.64
Widowed	3.20	2.03	2.48	2.02	3.90	4.68	2.01
Never married	56.05	62.44	57.70	53.91	55.30	53.24	62.71
English fluency %							
Does not speak English	2.33	3.48	0.92	8.39	0.31	4.32	1.83
Does not speak English well	6.17	14.29	4.44	18.41	1.14	8.63	3.29
Speaks English well	91.50	82.23	94.63	73.20	98.55	87.05	94.88
Total family income (Median)	14400	8025	15462	15839	14361	14813.5	14562
Family size (Mean)	2.06	1.94	2.34	2.55	1.87	2.39	2.05

Note: Base on authors' calculations using ACS 2016-2020

Close to 50.0% of the sample of Asian American family heads who were eligible for SNAP were employed between 2016 and 2020, and about 50.0% of family heads were not in the labor force. The data indicates that Cambodian and Vietnamese family heads were the most likely subgroups to be employed, at 56.0% and 63.0%, respectively, while only 40.0% of Chinese family heads were employed. Close to 70.0% of Cambodians (68.0%) and Vietnamese (73.0%) were citizens or naturalized. About 60.0% of Indian (64.0%), Chinese (58.0%), and Korean (56.0%) family heads were non-citizen. Chinese family heads were the most likely to be married (28.2%), followed by Vietnamese family heads (35.2%), and Cambodian family heads were least likely to be married (19.2%). Among Asian subgroups, Cambodians reported the highest percentage of divorce (20.2%), followed by Vietnamese (16.8%).

Cambodians and Vietnamese family heads were also most likely to report that they "do not speak English" or "do not speak English well," at 35.0% and 27.0% respectively. Approximately 60.0% of Chinese, Indian, and Korean family heads were immigrants (non-citizen). Most of these immigrant family heads had been living in the US five or fewer years. Meanwhile, only 30.0% and 16.0% of Vietnamese and Cambodian family heads were non-citizens, respectively.

Statistical Analysis Strategies

We used Probit regression to predict the probability of receiving SNAP for the sample of SNAP-income eligible families in Massachusetts, with race-ethnicity as our main variable of interest. We also tested an interaction term between race-ethnicity and education to assess the racial disparities based on education. Below is the specification of the Probit regression model:

$$\boldsymbol{Pr}(\boldsymbol{SNAP}) = b_0 + b_1\boldsymbol{female} + b_2\boldsymbol{Race} + b_3\boldsymbol{Edu} + b_4\boldsymbol{race} * \boldsymbol{edu} + \boldsymbol{Controls} + \boldsymbol{\varepsilon}$$

Where *SNAP* indicates whether an eligible family head received SNAP benefits; *race* is a dummy variable of racial/ethnicity (Asian, White, Black, Hispanic, Other races, and Multiracial); *Edu* is educational attainment; *controls* are control variables and $\boldsymbol{\varepsilon}$ is an error term.

Table 2: Characteristics of Sample of SNAP Eligible Family Heads Aged 18-64 in Massachusetts by Asian American subgroup (2016-2020)

	Total (n=1925)	Chinese (n=896)	Indian (n=330)	Vietnamese (n=196)	Korean (n=140)	Cambodian (n=94)	Other (n=269)
SNAP							
Eligible non recipient %	86.65	89.51	94.24	74.49	93.57	53.19	84.76
Eligible recipient %	13.35	10.49	5.76	25.51	6.43	46.81	15.24
Gender (female) %	51.32	52.01	38.18	58.16	62.14	61.70	50.93
Education %							
High school or lower	31.27	31.25	14.24	57.14	12.86	68.09	30.11
Some college	15.79	16.85	11.21	13.78	18.57	13.83	18.59
Associate	2.75	2.68	1.21	5.10	2.14	4.26	2.97
Bachelor	31.32	30.92	45.45	20.41	36.43	11.70	27.51
MA or higher	18.86	18.30	27.88	3.57	30.00	2.13	20.82
Employment status %							
Employed	47.74	39.84	53.94	62.76	39.29	56.38	56.88
Unemployed	5.04	4.02	4.85	6.12	7.86	9.57	4.83
Not in labor force	47.22	56.14	41.21	31.12	52.86	34.04	38.29
Have adult 65 and older %	5.14	5.92	1.52	8.16	1.43	8.51	5.58
Disability %	9.87	6.36	6.06	22.45	7.86	34.04	9.67
At least one employed family member %	18.60	16.29	10.30	36.22	10.71	35.11	21.93
At least one child under 18 %	23.69	18.86	13.03	46.43	16.43	55.32	29.00
Age group %							
18-24	36.52	42.52	44.85	19.39	35.71	7.45	29.37

25-44	39.27	34.26	46.36	31.63	45.00	51.06	45.72
45-64	24.21	23.21	8.79	48.98	19.29	41.49	24.91
Citizenship %							
Citizen	18.13	14.06	20.61	13.78	25.00	27.66	24.91
Naturalized	28.52	25.78	14.55	55.10	17.86	56.38	31.23
Non-citizen in US 0-5 years	38.96	45.42	57.27	17.35	30.71	1.06	28.25
Non-citizen in US 6-15 years	9.82	10.94	5.15	7.14	20.00	2.13	11.15
Non-citizen in US 16+ years	4.57	3.79	2.42	6.63	6.43	12.77	4.46
Marital status %							
Married	27.22	28.24	19.39	35.20	23.57	19.15	32.34
Separated	1.82	1.45	0.91	2.04	3.57	4.26	2.23
Divorced	6.49	5.25	1.82	16.84	2.86	20.21	5.95
Widowed	2.03	2.34	1.21	2.04	1.43	4.26	1.49
Never married	62.44	62.72	76.67	43.88	23.57	52.13	57.99
English fluency %							
Does not speak English	3.48	4.80	0.91	7.14	0.00	3.19	1.49
Does not speak English well	14.29	16.63	4.55	28.57	7.86	24.47	7.81
Speaks English well	82.23	78.57	94.55	64.29	92.14	72.34	90.71
Total family income (Median)	8025	4528	7551	20125	1592	20575	10560
Family size (Mean)	1.94	1.79	1.50	2.69	1.59	3.17	2.14

Note: Based on authors' calculations using ACS 2016-2020

Controls

We controlled other factors that may determine SNAP receipt, such as age, gender, disability status, presence of elderly adults, presence of a child(ren), marital status, income, employment status, citizenship status, family size, and English fluency, for all race-ethnic regression models. For example, personal characteristics, including age, gender, and family status, may impact receipt of public benefits (Albelda & Carr, 2014; Rank & Hirschl, 2005). Immigrants are less likely to receive SNAP benefits because they may fear that participating in these public assistance programs may affect their immigration application (Buchmueller & Levy, 2020; McAleer et al., 2021). In the Asian American subgroup analysis, we used the control variables age, gender, disability, presence of child(ren), presence of elderly adults, marital status, income, and family size, and citizenship status, education, English fluency, and employment status were the variables of interest.

Results

We structured our results in two sections. The first section estimates the racial disparity in receiving SNAP among eligible families across race and ethnicities. It answers the question, "What are the racial disparities in receiving a public benefit, SNAP, among eligible families in Massachusetts?" The second section focuses on Asian American subgroups and aims to answer the last two research questions: "What are the disparities among eligible Asian American subgroups in receiving public benefits in Massachusetts? To what extent does 1) English fluency, 2) immigration status, 3) education level, and 4) employment status determine SNAP recipience in Massachusetts for Asian American subgroups?"

Predicting SNAP receipt among eligible families

SNAP receipt across race-ethnicities of family heads

The first column in Table 3 provides the results of the Probit regression that explores SNAP receipt for eligible families in Massachusetts. It estimates receipt of SNAP by race-ethnicity and education levels. The regression includes age, gender, presence of children under 18, presence of adults over 64, presence of a family

member with a disability (either member of the family or family head), presence of an employed adult in the family other than the family head, marital status, English fluency, and immigration status. To predict the effect of race and ethnicity in the regression, we used Asian Americans as the reference group. To predict the effect of education, we used the group of people with a high school diploma or less as the reference group.

Column 1 of the regression result shows that all else equal, among SNAP eligible family heads, Asian American families had a lower probability than Hispanic (by 11 percentage points), Black (by 8 percentage points), Other races (by 6 percentage points), and Multiracial families (by 6 percentage points) of receiving SNAP. However, compared to White families, SNAP receipt among Asian Americans was not significantly different. Also, eligible families with female heads had a higher probability of receiving SNAP compared to families with male heads (by 6 percentage points).

The education level of family heads was associated with SNAP receipt. The regression showed that heads of families who had a high school diploma or a lower education level had a higher probability of receiving SNAP than those with higher education levels such as an MA or higher (by 20 percentage points), a BA (by 16 percentage points), an associate degree (by 7 percentage points), or some college (by 7 percentage points).

To estimate the differences across educational level and race-ethnicity, we ran a regression model with an interaction between education and race-ethnicity. There were many possible interactions between race-ethnicity and education level (for results for all interaction terms see Appendix (3)). However, we present only some pairs of combinations here, using Asian Americans as the reference group. Across education levels, Asian American and White family heads did not have a significantly different probability of receiving SNAP, except at the BA level, where Asian American family heads had a higher probability of receiving SNAP than White family heads. Compared to Black and Hispanic family heads, across education levels, Asian American family heads had a lower probability than Black and Hispanic family heads of receiving SNAP, except at the associate degree level, where there

was no significant difference. The significant differences across educational levels did not hold between Asian American and Other races and Multiracial groups.

In summary, eligible Asian American families were less likely to receive SNAP compared to eligible Black and Hispanic families, across the education level of family heads, but not compared to White families. Education also predicted SNAP receipt. The higher the education level of family heads, the less likely families were to receive SNAP, even though they were income eligible to receive this benefit.

Table 3: Probit Regression Predicting SNAP Receipt Across Race-ethnicities

	SNAP	
	Average Marginal Effect	SE
Race (base: Asian)		
White	-0.014	(0.015)
Black	0.087***	(0.017)
Hispanic	0.113***	(0.015)
Other	0.058*	(0.028)
Two or more race	0.061**	(0.022)
Gender (female)	0.065***	(0.006)
Education (base: high school or lower)		
Some college	-0.069***	(0.009)
Associate	-0.071***	(0.012)
Bachelor	-0.163***	(0.009)
MA or higher	-0.203***	(0.012)
Age group (base: 18-24)		
25-44	0.166***	(0.010)
45-64	0.172***	(0.011)
Marital status (base: married)		
Separated	0.106***	(0.015)
Divorced	0.108***	(0.010)
Widowed	0.072***	(0.017)
Never married/single	0.116***	(0.009)
Disability	0.157***	(0.006)
Have employed member	-0.134***	(0.008)
Have child<18	0.112***	(0.010)
Have adult>64	-0.048**	(0.016)
N	18545	
Pseudo R2	0.2431	

Notes: Based on authors' calculations using ACS data 2016-2020. Standard errors in parentheses. * Denotes statistically significant, at ***1.0%, **5.0%, and *10.0%. Additional regression controls include, family size, citizenship status, English fluency, income(log) and employment status.

SNAP receipt among eligible Asian American subgroups

Table 4 provides the Probit regression model that explores SNAP receipt among SNAP eligible Asian American subgroups. Chinese family heads were the reference group in the regression. The largest Asian American subgroup in the sample was Chinese family heads. So, we wanted to examine how the likelihood of Chinese American families' SNAP receipt compared to other Asian American subgroups. The regression results showed that, all else equal, Chinese families had a lower probability of receiving SNAP than Cambodian families (by 9 percentage points). However, Chinese families' SNAP receipt was not significantly different from the rest of the Asian American subgroups. Additionally, SNAP receipt for Asian American subgroups was associated with the education levels of family heads. Among families that were income eligible for SNAP, family heads with a high school diploma or less were more likely to obtain SNAP benefits than family heads who received some college education (by 6 percentage points) or who received an MA or higher education level (by 13 percentage points). The same is not true for associate and BA degrees. Family heads with these education levels were not more likely to receive SNAP benefits than family heads with a high school diploma or less.

We also analyzed interaction terms between Asian American subgroups and educational levels. Details are shown in Appendix (4). Here, we present only some pairs that are significant. The results indicated that at some education levels of family heads, eligible Chinese families were significantly different in SNAP receipt. At the level of a high school diploma or a lower level of education, Chinese family heads had a lower probability than Cambodians and Indians in receiving SNAP. However, at the level of a BA, Chinese family heads had a higher probability of receiving SNAP than Indians and Vietnamese. At the MA level or higher, Chinese family heads had a lower probability than Koreans of receiving SNAP.

In addition, we compared SNAP eligible family heads who had American citizenship from birth to 1) family heads who had naturalized citizenship and 2) those who were immigrants (see Appendix (5)). The results showed that there was no significant difference in receiving SNAP. Also, across the immigration status of family heads, Chinese family heads did not significantly differ in the probability of receiving SNAP. However, for non-citizens who had been in the US between 0-5 years, Chinese families had a lower probability than Korean [z-statistic=1.88] and Other Asian families [z-statistic=3.14] of receiving SNAP.

The analysis found that English fluency did not determine differences in receiving SNAP. For example, compared to Asian American family heads who spoke English well and those who did not speak English well, the family heads who did not speak English at all did not have a significantly different probability of receiving SNAP. However, when we tested only two groups—those who did not speak English well and those who spoke English well, the result showed that family heads who did not speak English well had a higher probability of receiving SNAP than those who spoke English well. Surprisingly, when we tested among the group of non-citizens, English fluency did not predict the probability of receiving SNAP. This fails to confirm the previous qualitative findings in the literature.

We ran a separate regression model, with an interaction term between Asian American subgroups and English fluency, to see if there was any difference in receipt of SNAP between the subgroups of Asian American family heads based on their English-speaking ability. The results, shown in Appendix (6), showed no significant differences, except for Cambodian and Chinese family heads who could speak English well, where Cambodian families had a higher probability of receiving SNAP than Chinese families [z-statistic=2.00].

Table 4: Regression for SNAP Receipt Among Eligible Asian American Subgroups

	SNAP	
	Average Marginal Effect	SE
Asian American subgroup (base: Chinese)		
Indian	0.013	(0.032)
Vietnamese	0.009	(0.026)
Korean	0.012	(0.043)
Cambodian	0.091*	(0.041)
Other Asian	0.031	(0.028)
Gender (female)	0.037	(0.019)
Education (base: high school or lower)		
Some college	-0.065*	(0.033)
Associate	0.006	(0.047)
Bachelor	-0.042	(0.029)
MA or Higher	-0.126***	(0.027)
Age group (base:18-24)		
25-44	0.070*	(0.029)
45-64	0.104**	(0.034)
Marital status (base: married)		
Separated	0.119	(0.066)
Divorced	0.043	(0.035)
Widowed	0.055	(0.053)
Single/never married	-0.001	(0.028)
Disability	0.146***	(0.022)
Having employed member	-0.049*	(0.024)
Have child<18	0.038	(0.029)
Have adult>64	0.009	(0.031)

English fluency (base: Does not speak English)		
Does not speak English well	0.010	(0.047)
Speaks English well	-0.063	(0.047)
Citizenship (base: Citizen)		
Naturalized	0.015	(0.032)
Non-citizen 0-5 yrs	-0.056	(0.034)
Non-citizen 6-15 yrs	-0.028	(0.039)
Non-citizen 16+ yrs	-0.029	(0.043)
Employment status (base: employed)		
Unemployed	0.054	(0.043)
Not in labor force	0.029	(0.023)
N	1319	
Pseudo R2	0.287	

Notes: Based on authors' calculations using ACS data 2016-2020. Standard errors are in parentheses. * Denotes statistical significance, at ***1.0%, **5.0%, and *10.0%. Additional regression controls include, family size, and income(log).

Lastly, the results indicated that within the Asian American subgroups, all else equal, SNAP receipt of family heads who were employed was not significantly different from those who were unemployed or not in the labor force. When we removed the disability variable, families with family heads who were not in the labor force had a higher probability of receiving SNAP than families with employed family heads. Families of unemployed and employed heads did not have a different probability of receiving SNAP when we removed the disability variable. When we removed the income variable, families with unemployed heads had a higher probability of receiving SNAP compared to the families of employed heads. A separate interaction regression showed that Chinese family heads who were not in the labor force had a lower probability of receiving SNAP benefits than Cambodian families (z-statistic=2.35). Compared to other Asian American subgroups, Chinese

family heads were not significantly different in receiving SNAP based on their employment status. Details are provided in Appendix (7).

Discussion

The first research question in the study aimed to understand racial disparities in receiving SNAP among income eligible families in Massachusetts. We isolated a sample of SNAP eligible families using an indicator of whether family income was 200% of the FPL (by family size). By controlling other factors such as age, education, marital status, income, employment status, employment of non-head family members, and other factors, the regression results showed that eligible Asian American families were less likely than Hispanic, Black, Other races, and Multiracial families to receive SNAP in Massachusetts. However, Asian American and White families were not significantly distinct in this regard. Although Asian American and White families generally were not different in their likelihood of receiving SNAP, income eligible Asian American family heads with a BA were more likely than White families to receive SNAP. The interaction terms also indicated that even at different levels of education, income eligible Asian American families tend to be less likely to receive SNAP than Black and Hispanic families (except for those with associate degrees).

The second research question we addressed investigated the disparities among Asian American subgroups in eligible families receiving SNAP in Massachusetts. We used Chinese family heads as a reference group in Probit regression. The results did not reveal disparities between eligible Asian American subgroups living at or under 200% FPL, with the exception of Cambodian families, who were more likely than income eligible Chinese families to receive SNAP. However, Chinese families were not significantly different from other Asian American subgroups investigated, including Korean, Vietnamese, Indian, and other Asian families.

To further explore racial disparities among Asian American subgroups, the third research question investigated the extent to which 1) English fluency, 2) immigration status, 3) education level, and 4) employment status determined SNAP recipience in Massachusetts for Asian American subgroups. The results showed that

speaking English, immigration status, and employment status were not associated with the probability of SNAP recipience for income eligible Asian American families. Although English was raised as a barrier to applying for SNAP for immigrants and Asian American populations in previous studies (Avila et al., 2021; Louie et al., 2020), our analysis showed that the English fluency of family heads did not predict the probability of receiving SNAP for this low-income (at 200% FLP and lower) sample, across Asian American subgroups.

We also looked at disparities between Asian American subgroups across education levels. The main finding was that income eligible family heads with a high school diploma or lower tended to be more likely to receive SNAP compared to income eligible family heads with a MA degree or higher. We observed disparities in receiving SNAP among Asian American subgroups at some educational levels. For example, the interaction terms indicated that among family heads with a high school diploma or lower level of education, there were disparities in receiving SNAP between Chinese and Indian, and Chinese and Cambodian subgroups. When family heads had a high school diploma or less, Indian and Cambodian families had a higher probability than Chinese families of receiving SNAP benefits. We also found a disparity between Chinese and Vietnamese families at the BA level, where Vietnamese families with BAs tended to be more likely than Chinese families to receive SNAP.

In summary, there are disparities in receiving SNAP between Asian Americans and other races and ethnicities in Massachusetts. Even though they have the same income level and eligibility for SNAP, Asian American households are less likely to receive SNAP benefits compared to others, except White households. When we investigated the disparities in receiving SNAP among Asian American subgroups, the analysis revealed disparities between Cambodian and Chinese families. As the cost of food and other household expenses continues to rise, these findings help deepen our understanding of racial disparities in food insecurity, pointing to potential policy solutions.

SNAP Policy Environment

In March 2020, the US Department of Agriculture (USDA) approved state provision of emergency allotments to SNAP recipients due to the COVID-19 pandemic (USDA, 2021). In Massachusetts, approximately 630,000 households received an average of $151 more per month in SNAP benefits as a result of these emergency allotments (Saperstone, 2023). In March 2023, the enhanced SNAP emergency allotments ended (USDA, 2023). The termination of this additional SNAP benefit was counterintuitive in that it occurred at a time when Massachusetts families continued to struggle with food insecurity due to record high food costs and other household expenses. To address this concern, Massachusetts Governor Maura Healey passed legislation for SNAP recipients to receive state-funded extra SNAP benefits for the months of April, May, and June of 2023 (Mass.gov, 2023b).

In addition to the termination of emergency allotments to SNAP recipients, the 2023 debt ceiling agreement legislation put an estimated 750,000 Americans at risk of losing SNAP benefits due to expanded work requirements for SNAP recipients aged 50 to 54. This policy is especially detrimental for adults who have existing barriers to employment (Bergh & Rosenbaum, 2023).

While in some ways SNAP policies have become more restrictive since 2020, some policies have been enacted to increase access to SNAP and reduce food insecurity. For example, in July 2021, to help close the SNAP coverage gap, the Executive Office of Health and Human Services (EOHHS) in Massachusetts added a SNAP application checkbox to the paper application for MassHealth and the Medicare Savings Program (Massachusetts Law Reform Institute[MLRI], 2022). If an individual qualifies to receive MassHealth coverage, then they are more than likely income eligible to receive SNAP benefits. In July 2022, EOHHS added a SNAP application checkbox to the online MassHealth Connector application to streamline the process and allow applicants to apply for SNAP and health insurance at the same time (Massachusetts Law Reform Institute[MLRI], 2022). In August 2022, a Massachusetts law was passed that mandated that a single, Common Application be implemented for potential recipients for SNAP, DTA fuel assistance, childcare assistance, housing, healthcare, and other government benefits (Massachusetts

Law Reform Institute, 2022). These changes are intended to streamline the application process, reduce the administrative burden for potential benefits recipients, and help close the SNAP coverage gap. The outcomes of these policy shifts are not reflected in this study because the data that is analyzed was collected prior to these policy changes.

Policies to bridge the SNAP coverage gap will likely help to enroll more eligible SNAP recipients. However, the policies will not necessarily close racial gaps in SNAP receipt. This may especially impact vulnerable Asian American subgroups such as Cambodians. Thus, targeted efforts are needed to increase access to SNAP, including expanding culturally responsive communication.

Policy Implications

Asian American families in Massachusetts are less likely than Black families, Hispanic families, and other race-ethnic groups, except for White families, to receive SNAP benefits, even among income eligible families. Our analyses revealed that even though eligible Asian American families are less likely to receive SNAP, this does not necessarily mean they are faring better economically. In fact, more Asian American families compared to other race-ethnic groups have lower household incomes. For example, in our sample, more Asian American families lived at or under 138% of the FPL than the rest of the racial-ethnic groups in Massachusetts between 2016-2020 (Asian American: 78.0%, Hispanic: 74.0%, Other races: 73.0%, Multiracial: 72.0%, Black: 70.0%, White: 67.0%). The percentage of Asian American families at or under the 150% of the FPL is also higher than other race-ethnicities (Asian American: 82.0%, Hispanic 79.0%, Other races: 79.0%, Black: 76.0%, White: 74.0%).

Based on these findings, SNAP policies that focus on low-income families may need to take race and ethnicity into account, particularly for Asian American families. The results of our study suggest that policymakers should place a stronger focus on low-income Asian American families. In our analysis, among the Asian American subgroups, only Cambodian families were more likely to receive SNAP than Chinese families (significant at 10.0%).

This study has uncovered some additional policy implications. In our sample of SNAP income eligible heads of households, many have college degrees. In particular, Asian Americans were more likely to be SNAP income eligible heads of households with some college, an associate degree, a BA degree, or a MA degree or higher, compared to every other race-ethnicity. Heads of households who have a college degree are typically not thought of as having economic hardships and in particular, food insecurity challenges, compared to heads of households who do not have any college degree attainment. This finding has potentially uncovered another group of vulnerable heads of households in Massachusetts. These findings are even more pronounced within some Asian American subgroups, with 45.0% of Indian, 36.0% of Korean, 31.0% of Chinese, 27.0% of Other Asian, 20.0% of Vietnamese, and 12.0% of Cambodian family heads with a BA or higher being SNAP income eligible.

Heads of households who have a college degree might not consider applying for SNAP benefits even though they are income eligible, perhaps assuming that these benefits are unavailable for individuals who hold college degrees. Because of the significant percentage of heads of households who hold college degrees and are SNAP income eligible, greater outreach should be provided to these vulnerable families.

Policymakers might consider adding the level of student loan payments family heads are required to pay to the application for SNAP benefit eligibility. Student loan payments were on pause for over three years due to the Covid-19 pandemic, but monthly student loan payments resumed in the Fall of 2023 (Stratford, 2023). This could make this population of Asian American family heads who are SNAP eligible even more food insecure. Food insecurity has been rising in Massachusetts and the cost of food and household expenses have increased considerably since the onset of the Covid-19 pandemic.

Limitations

This study has a few limitations that are worth noting. First, we used gross total family income to determine SNAP eligibility—those at or below 200% of the FPL were determined to have been SNAP eligible.

The 5-year ACS data does not provide information on the net income or childcare costs of the households (CBPP, 2023). There are other deductions that are considered to determine SNAP eligibility that are not collected by the ACS survey such as child support payments, medical expenses, phone allowances, utility expenses, and other household expenses (Mass.gov, 2023a). Therefore, the SNAP eligibility variable may not be entirely accurate in capturing those who are eligible for SNAP benefits.

Another limitation in calculating households that are eligible for SNAP benefits is that the American Community Survey (ACS) is self-reported data. Income data is self-reported by the survey participants and errors in reporting may occur. For instance, a respondent may have reported net income when the survey question asked for gross income, or they may have reported individual income when the question asked for gross household income.

We also could not control for immigration document status in the study, since "undocumented immigrants are not eligible for SNAP but their family members are eligible" (Mass.gov 2020). Without information on immigration document status, we could not separate out ineligible undocumented family heads. However, we assume that controlling immigration document status might not significantly change the results because SNAP is for family recipients. If a member of the family of an undocumented immigrant received SNAP, then the whole family benefits from the program, or "the person reported in the ACS survey that his/her family received SNAP." Typically, ACS data underreports SNAP recipients (a false negative report). Meyer et al. (2022b) suggested that some family heads who are actually SNAP recipients did not report that they received SNAP in the ACS survey. For example, their study showed that up to 35.0% of SNAP recipients in Maryland and Illinois failed to report their status in the ACS survey, and underreporting SNAP also varies

based on demographic. For instance, non-White family heads are more likely than Whites to underreport SNAP. Therefore, a potential bias in this study is that SNAP recipients may be underrepresented in the sample, because the true number of SNAP recipients, particularly among non-White families, may be larger than what is reported in the ACS.

We could not provide an estimation for all Asian American respondents who indicated two or more races. Therefore, we include them in a category of Multiracial family heads. In addition, there might be variation among Asian American subgroups that are included in the Other races category. Finally, the surveys may not be provided in the survey participants' native language or dialect. For example, in India alone, there are 121 reported languages spoken as mother tongues, and there are many more dialects spoken (Chandras, 2020). This may lead to measurement error in survey data if it inhibits the respondent's ability to understand the questions.

Future Research

Future research might explore the underlying reasons behind our findings. Overall, it may be that Asian American families who are eligible for SNAP are more likely than other races and ethnicities (except White) to: 1) choose not to apply for SNAP or 2) apply but not pass the net resource test (assets) for the SNAP program (Kaiser, 2008). Other barriers that prevent families eligible for SNAP from enrolling in this program include the complexity of the SNAP application, lack of information, misinformation, and stigma (Kaiser, 2008; McAleer et al., 2021). For example, one study indicated that SNAP participants felt devalued and judged at different levels in society – from grocery cashiers, people in line waiting to pay for their groceries, the press, and elected leaders (Gaines-Turner et al., 2019). This stigmatization may put low-income people in an uncomfortable position, and they may not apply for SNAP, even though they are in need.

Future studies might investigate where disparities occur in the service continuum, exploring the program design, accessibility of the benefits, and discrimination by administering agencies. It will be especially important to better understand the

subgroups of the Asian American community to find the root cause of the disparities. For example, southeast Asians face Islamophobia (Watanabe & Jang, 2022), which may lead to discrimination by administering agencies. Given that low-income respondents of color reported that fear of immigration status and language barriers were barriers to SNAP participation especially for Latino and Asian Americans (McAleer et al., 2021), it is important for future research to tease apart the extent to which reported racial disparities are due to immigration status.

There is also a need to explore employment status more fully, especially differences by industry and occupation. Liu, Tran, and Watanabe (2007) uncovered occupational differences by Asian American subgroups. Given changes to safety net programs and the economy, it is important to update the findings of their report, and to examine the intersection of occupation and benefit utilization (Liu et al., 2007).

It is worth noting that while several authors have pointed out the history and implications of the racist design of public benefit programs as it pertains to Black Americans, there is substantially less research on the development and history of public benefits as it relates to Asian American subgroups. More historical analysis may help further bring to light the reasons for and outcomes of racial disparities for Asian Americans.

A more comprehensive understanding of the factors impacting benefits utilization by Asian American subgroups can contribute to policy interventions to address the deepening of income inequality among Asian Americans. The level of income inequality among Asian Americans was greater than among other racial and ethnic communities in 2016 (Kochhar, 2018). In 2016, Asian Americans at the 90th percentile earned 13.0% more than Whites at the 90th percentile ($133,529 vs. $117,986). Lower-income Asian Americans, on the other hand, lagged behind lower-income Whites. The “top-to-bottom" gap in income among Asian Americans increased 77.0% from 1970 to 2016, a far greater increase than among Whites (24.0%), Hispanics (15.0%), or Blacks (7.0%) (Kochhar, 2018). Overall, the median income for Asian Americans in the 10th percentile of their income distribution was $12,478, which was 17.0% less than the median income for Whites

($15,094). Given differences in poverty rates for Asian American subgroups (Budiman & Ruiz, 2021a), these disparities – both in terms of the amount of disparity and the extent to which it increased for each group – suggests that Asian American subgroups have been disproportionately affected by the drivers of income inequality.

Disaggregation of data by Asian American subgroups is critical to dismantling the notion of Asian Americans as a "model minority," and ensuring that all Asian Americans can access public benefits needed to support their families. This is urgent since food insecurity has been rising in Massachusetts and the cost of food and household expenses have increased considerably since the onset of the Covid-19 pandemic. Data disaggregation is essential to combat racism, especially the false narrative that Asian Americans suffer less racism compared to other groups and the erasure that plagues policies related to Asian Americans (Watanabe & Jang, 2022). This is particularly pernicious for Southeast Asians, who disproportionately experience economic hardship.

It will also be important to document the lived experiences of Asian American subgroups who are eligible but do not access SNAP. Given the differences between communities related to immigration and discrimination experience, qualitative research may provide a more nuanced understanding of disparities in benefits access. Future research should also focus on evaluating policy solutions to increase access for all eligible families.

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Appendix (1) Historical Background of Asian immigration to the US and Massachusetts

Since the mid-1960s, immigration from Asia to the US has increased sharply, following the repeal of exclusionary immigration laws from the late 19th and early 20th centuries (Hanna & Batalova, 2021). Each Asian American subgroup has different historical contexts and distinct impetuses for immigrating to the US.

At 2.4 million, Chinese Americans comprised the largest Asian American subgroup in the US in 2021 (Rosenbloom & Batalova, 2023). As early as the 1850s, the first group of Chinese immigrants arrived in the US to escape economic chaos and try their luck at the California gold rush. By 1882, Congress passed the Chinese Exclusion Act to ban all Chinese immigration into the US. Nearly a century later, the number of Chinese Americans in the US almost doubled in just ten years after the Immigration and Naturalization Act of 1965 was passed. This law made it possible for many more skilled workers and their family members to come to the country than ever before. Now, numerous Chinese immigrants arrive as international college students or H-1B temporary workers with specialized skills (Rosenbloom & Batalova, 2023).

Indian immigration began in 1820. Indian immigrants in the 19th century were primarily farmers, much like early Chinese and Japanese immigrants. In California, the majority came to work in agriculture. As the Immigration and Nationality Act of 1965 and the Immigration Act of 1990 were launched, most Indian immigrants who arrived after 1965 were young, educated city dwellers who spoke fluent English. By the 21st century, the Indian population became the second-largest immigration group in the US (Jie & Jeanne, 2015) .

Korean migration to the US began in the early 20th century and was driven by political, military, and economic factors. Korean migration to the US occurred in three phases. The first wave (1903–05) included 7,000 mostly male sugar plantation workers without formal education in Hawaii. The Korean War and US-South Korean military alliance caused the second wave of immigration in 1951. In

the third wave, war orphans, refugees, professionals, and students joined the mostly young women and children of American servicemen (Jie & Jeanne, 2015).

The first Filipino immigrants entered the US in 1899, primarily for agricultural and educational purposes. The Tydings-McDuffie Act of 1934 limited the number of Filipino immigrants to 50 per year, but during World War II, family and work-related conditions made it possible for people to move again. The number of Filipino immigrants has multiplied by five in recent years as a result of policies and the removal of national-origin quotas that discouraged migration (Gallardo & Batalova, 2020).

Due to poverty, government repression, and food shortages, Vietnamese immigrants in the 1970s came to the US with lower levels of formal education and skill. The number moving to the US decreased after Vietnamese market reforms and the restoration of relations. In contrast to earlier refugees, most of these new immigrants came to the US to be with family members who already lived there (Harjanto & Jeann, 2021). Cambodians also came to the US as refugees following the end of the Khmer Rouge regime in 1979.

Over this time, Chinese, Indian and Korean immigrants to the US changed from being mostly unskilled to skilled and educated. By contrast, Filipino, Vietnamese, and Cambodian immigrants came to the US as refugees.

The history of Asian immigration in Massachusetts follows the broader US Asian immigration history. However, there are some distinctions. In North Adams, Massachusetts in 1870, a shoe factory owner hired 75 Chinese immigrants from California to work during a strike. This move was politically controversial and sparked a national debate regarding labor conditions, class, and race which greatly influenced the passage of the Chinese Exclusion Act of 1882, which prohibited Chinese immigration to the US (Cronin, 2018). Chinese merchants first immigrated to Boston in the mid-19th century, and they owned the earliest restaurants and tea shops (To, 2008). Most were men and resided temporarily, later returning to China (To, 2008). By 1900, there were over a thousand Chinese immigrants residing in Boston (US Census Bureau, 1900). There were over 25,000 Chinese residents in

Boston by 2010, and Boston has the largest Chinese population of any city in Massachusetts (US Census Bureau, 1900).

The history of Southeastern Asian immigration to Massachusetts is more recent and differs from Chinese immigration and other Asian subgroup immigration to this state. Refugees from Cambodia, Vietnam, and Laos escaped from Southeast Asia because of inhumane oppression, war, and genocide (Pho et al., 2007) In the late 1970s and early 1980s, many Southeastern Asian refugees immigrated to the US and the state of Massachusetts (Pho et al., 2007) In 2004, Lowell, Massachusetts reported the second largest community of Cambodian residents with a population of 20,000 and the total population of Lowell is 105,000; Long Beach, California has the largest Cambodian community population in the US (Pho et al., 2007).

Beginning in the late 1970s, Southeast Asian refugees were accepted by the existing Lowell, Massachusetts community. The community may have empathized with the US war refugees from Vietnam because of the US's involvement and a united cause against the spread of Communism (Pho et al., 2007). Many may have felt a collective responsibility for the destruction of Southeast Asia and US foreign policy that at least indirectly influenced the Cambodian genocide (Pho et al., 2007). The cultures of Southeast Asian refugees were also accepted and supported by local officials of Lowell (Pho et al., 2007). Southeast Asian refugees filled a local labor gap and performed manual labor jobs that most existing residents of Lowell were unwilling to do (Pho et al., 2007). Subsequently, during the recession of the 1990s, there was a dramatic increase in anti-immigrant sentiment in Massachusetts communities against Asian immigrants and refugees (Pho et al., 2007). There was an ideological shift among some residents, many of whom believed that immigrants and refugees took away their jobs and burdened the welfare system (Pho et al., 2007). In the late 1980s, in Boston, Massachusetts, approximately 15.0% of hate crime victims were against Vietnamese residents (Kelly, 1989).

Over the past two centuries, Asian Americans have experienced racism in the US, including erasure, exclusion, and discrimination. In 1869, the transcontinental railroad project was completed, and Chinese American laborers experienced discrimination at every turn of the project. They were paid half the wages of White

workers, and lived outside in tents, while White workers tended to have access to better sleeping conditions.

In addition, Asians were regarded as “aliens ineligible for citizenship.” Asian Americans could not declare permanent US citizenship until 1952. Americans of Asian descent are still often not seen as “real Americans.” And they also have had to face additional legal obstacles, including prohibitions on entering licensed professions, owning real estate and property, and other limitations. Furthermore, the economic, social, and health-related obstacles of Asian immigrants from Vietnam, Cambodia, and Laos who came to the US as refugees were obscured by the "pull yourself up by the bootstraps" illusion of Asian Americans. Anti-Asian American racism not only stems from, but more importantly, has been mutually reinforced by cultural perceptions and public policies (Watanabe & Jang, 2022).

Appendix (2) Federal Poverty Guidelines 2016-2020 by Family Size

Family size	2016	2017	2018	2019	2020
1	11,880	12,060	12,140	12,490	12,760
2	16,020	16,240	16,460	16,910	17,240
3	20,160	20,420	20,780	21,330	21,720
4	24,300	24,600	25,100	25,750	26,200
5	28,440	28,780	29,420	30,170	30,680
6	32,580	32,960	33,740	34,590	35,160
7	36,730	37,140	38,060	39,010	39,640
8	40,890	41,320	42,380	43,430	44,120
9	45,050	45,500	46,700	47,850	48,600
10	49,210	49,680	51,020	52,270	53,080
11	53,370	53,860	55,340	56,690	57,560
12	57,530	58,040	59,660	61,110	62,040
13	61,690	62,220	63,980	65,530	66,520

Notes: Authors' compiled data made available by the Office of the Assistant Secretary for Planning and Evaluation (ASPE)

Appendix (3) Interaction Terms between Race-Ethnicities and Education

Race-ethnicities with education level	Contrast	SE
(Asian High school or lower) vs. (White High school or lower)	0.023	0.023
(Asian some college) vs (White some college)	-0.056	0.039
(Asian Associate) vs (White Associate)	0.104	0.063
(Asian Bachelor) vs (White Bachelor)	0.049	0.028
(Asian MA or higher) vs (White MA or higher)	-0.039	0.029
(Asian High school or lower) vs (Black High school or lower)	-0.071	0.026
(Asian some college) vs (Black some college)	-0.202	0.045
(Asian Associate) vs (Black Associate)	0.063	0.070
(Asian Bachelor) vs (Black Bachelor)	-0.136	0.041
(Asian MA or higher) vs (Black MA or higher)	-0.138	0.051
(Hispanic High school or lower) vs (Asian High school or lower)	0.110	0.023
(Hispanic some college) vs (Asian some college)	0.215	0.042
(Hispanic Associate) vs (Asian Associate)	0.038	0.068
(Hispanic Bachelor) vs (Asian Bachelor)	0.096	0.036
(Hispanic MA or higher) vs (Asian MA or higher)	0.206	0.050
(Other races High school or lower) vs (Asian High school or lower)	0.078	0.041
(Other races some college) vs (Asian some college)	0.107	0.072
(Other races Associate) vs (Asian Associate)	-0.002	0.121
(Other races Bachelor) vs (Asian Bachelor)	-0.109	0.076
(Other races MA or higher) vs (Asian MA or higher)	0.110	0.156
Multiracial High school or lower) vs (Asian High school or lower)	0.055	0.037
(Multiracial some college) vs (Asian some college)	0.102	0.061
(Multiracial Associate) vs (Asian Associate)	-0.010	0.084
(Multiracial Bachelor) vs (Asian Bachelor)	0.057	0.049
(Multiracial MA or higher) vs (Asian MA or higher)	0.085	0.061

Appendix (4) Interaction Terms between Asian American Subgroups and Education

Subgroups with education level	Contrast	SE
(Cambodian High school or lower) vs (Chinese High school or lower)	0.133	0.057
(Cambodian some college) vs (Chinese some college)	0.137	0.116
(Cambodian Associate) vs (Chinese Associate)	-0.071	0.141
(Cambodian Bachelor) vs (Chinese Bachelor)	-0.011	0.105
Indian High school or lower) vs (Chinese High school or lower)	0.174	0.072
(Indian some college) vs (Chinese some college)	-0.041	0.082
(Indian Bachelor) vs (Chinese Bachelor)	-0.103	0.058
(Indian MA or higher) vs (Chinese MA or higher)	0.014	0.042
(Vietnamese High school or lower) vs (Chinese High school or lower)	0.018	0.036
(Vietnamese some college) vs (Chinese some college)	0.072	0.093
(Vietnamese Associate) vs (Chinese Associate)	0.181	0.146
(Vietnamese Bachelor) vs (Chinese Bachelor)	-0.119	0.057
(Korean High school or lower) vs (Chinese High school or lower)	-0.098	0.067
(Korean Bachelor) vs (Chinese Bachelor)	-0.014	0.079
(Korean MA or higher) vs (Chinese MA or higher)	0.129	0.072
(Other Asian High school or lower) vs (Chinese High school or lower)	0.067	0.046
(Other Asian some college) vs (Chinese some college)	-0.049	0.072
(Other Asian Associate) vs (Chinese Associate)	-0.073	0.114
(Other Asian Bachelor) vs (Chinese Bachelor)	-0.016	0.061
Other Asian MA or higher) vs (Chinese MA or higher)	0.088	0.058

Appendix (5) Interaction Terms between Asian American Subgroups and Immigration Status

Subgroups with immigration status	Contrast	SE
(Indian citizen) vs (Chinese citizen)	0.120	0.075
(Vietnamese citizen) vs (Chinese citizen)	-0.016	0.090
(Korean citizen) vs (Chinese citizen)	.	.
(Cambodian citizen) vs (Chinese citizen)	0.033	0.085
(Other Asian citizen) vs (Chinese citizen)	-0.020	0.070
(Indian naturalized) vs (Chinese naturalized)	0.104	0.062
(Korean naturalized) vs (Chinese naturalized)	-0.028	0.072
(Cambodian naturalized) vs (Chinese naturalized)	0.094	0.058
(Other Asian naturalized) vs (Chinese naturalized)	-0.036	0.038
(Indian non-citizen 0-5yrs) vs (Chinese non-citizen 0-5yrs)	-0.027	0.040
(Vietnamese non-citizen 0-5yrs) vs (Chinese non-citizen 0-5yrs)	0.095	0.068
(Korean non-citizen 0-5yrs) vs (Chinese non-citizen 0-5yrs)	0.210	0.111
(Cambodian non-citizen 0-5yrs) vs (Chinese non-citizen 0-5yrs)	.	.
(Other Asian non-citizen 0-5yrs) vs (Chinese non-citizen 0-5yrs)	0.224	0.071
(Indian non-citizen 6-15yrs) vs (Chinese non-citizen 6-15yrs)	0.139	0.110
(Vietnamese non-citizen 6-15yrs) vs (Chinese non-citizen 6-15yrs)	0.055	0.097
(Korean non-citizen 6-15yrs) vs (Chinese non-citizen 6-15yrs)	-0.017	0.079
(Cambodian non-citizen 6-15yrs) vs (Chinese non-citizen 6-15yrs)	0.024	0.203
(Other Asian non-citizen 6-15yrs) vs (Chinese non-citizen 6-15yrs)	0.026	0.085
(Indian non-citizen 16+) vs (Chinese non-citizen 16+)	.	.
(Vietnamese non-citizen 16+) vs (Chinese non-citizen 16+)	-0.027	0.074
(Korean non-citizen 16+) vs (Chinese non-citizen 16+)	0.309	0.232

(Cambodian non-citizen 16+) vs (Chinese non-citizen 16+)	0.121	0.108
(Other Asian non-citizen 16+) vs (Chinese non-citizen 16+)	0.213	0.148

Appendix (6) Interaction Terms between Asian American Subgroups and English Fluency

Compare Asian Subgroup with English level	Contrast	SE
(Indian Does not speak English) vs (Chinese Does not speak English)	0.390	0.311
(Vietnamese Does not speak English) vs (Chinese Does not speak English)	-0.063	0.105
(Korean Does not speak English) vs (Chinese Does not speak English)	.	.
(Cambodian Does not speak English) vs (Chinese Does not speak English)	-0.025	0.170
(Other Asian Does not speak English) vs (Chinese Does not speak English)	0.019	0.216
(Indian Does not speak English well) vs (Chinese Does not speak English well)	0.079	0.103
(Vietnamese Does not speak English well) vs (Chinese Does not speak English well)	0.002	0.051
(Korean Does not speak English well) vs (Chinese Does not speak English well)	0.037	0.119
(Cambodian Does not speak English well) vs (Chinese Does not speak English well)	0.111	0.103
(Other Asian Does not speak English well) vs (Chinese Does not speak English well)	0.031	0.079
(Indian Speaks English well) vs (Chinese Speaks English well)	-0.003	0.033
(Vietnamese Speaks English well) vs (Chinese Speaks English well)	0.020	0.033
(Korean Speaks English well) vs (Chinese Speaks English well)	0.008	0.045
(Cambodian Speaks English well) vs (Chinese Speaks English well)	0.094	0.047
(Other Asian Speaks English well) vs (Chinese Speaks English well)	0.0311	0.030

Appendix (7) Interaction Terms between Asian American Subgroups and Employment Status

Compare Asian subgroup with employment status	Contrast	SE
(Indian employed) vs (Chinese employed)	0.037	0.039
(Vietnamese employed) vs (Chinese employed)	-0.006	0.028
(Korean employed) vs (Chinese employed)	0.028	0.053
(Cambodian employed) vs (Chinese employed)	0.052	0.045
(Other Asian employed) vs (Chinese employed)	0.034	0.032
(Indian unemployed) vs (Chinese unemployed)	0.017	0.155
(Vietnamese unemployed) vs (Chinese unemployed)	0.053	0.125
(Korean unemployed) vs (Chinese unemployed)	0.061	0.181
(Cambodian unemployed) vs (Chinese unemployed)	-0.099	0.143
(Other Asian unemployed) vs (Chinese unemployed)	-0.040	0.116
(Indian not in labor force) vs (Chinese not in labor force)	-0.056	0.056
(Vietnamese not in labor force) vs (Chinese not in labor force)	0.054	0.061
(Korean not in labor force) vs (Chinese not in labor force)	-0.042	0.074
(Cambodian not in labor force) vs (Chinese not in labor force)	0.212	0.090
(Other Asian not in labor force) vs (Chinese not in labor force)	0.029	0.061