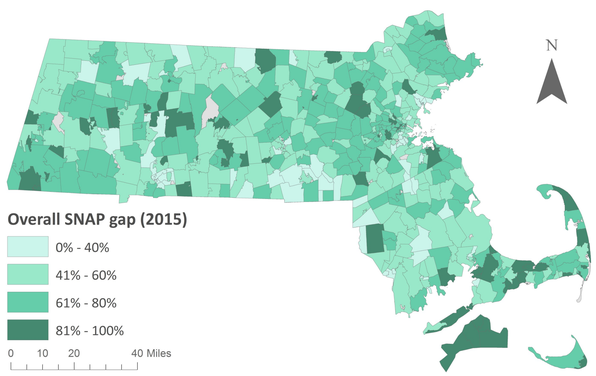
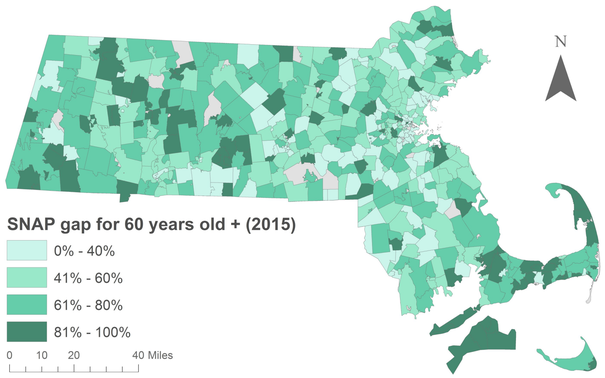
Closing the elderly SNAP gap in MA

INTRODUCTION

The Supplemental Nutrition Assistance Program (SNAP) is the primary safeguard against hunger and food insecurity in the US. SNAP is federally funded and implemented on the state level. In Massachusetts, SNAP is administrated by the Department of Transitional Assistance (DTA). The DTA uses 200% of the federal poverty level (FPL) as the gross income threshold for eligibility. Participants apply as households with varying benefits across different household sizes, those with children, high medical costs, etc. Between 2000 and 2004, MA had the lowest SNAP participation rate among all states. Efforts to improve participation in combination with the 2008 recession doubled enrollment by 2012. Unfortunately, due to poorly executed administrative and data keeping changes in 2014-2015, caseload fell by 10.3% (the national decline average was 0.8%).

The percentage of those eligible for SNAP benefits who do not enroll is commonly referred to as the '**SNAP gap**.' Complicated application processes, limited English language proficiency, negative social stigma around participation, and a number of other factors represent barriers to SNAP enrollment. A recent USDA ERS report found that elderly adults disproportionally experience a high SNAP gap with only 42% of eligible elderly adults enrolled in FY 2015. Taking a closer look at spatial SNAP gap trends for elderly adults in MA in combination with the impact of certain demographic factors on participation rates will help identify high risk areas that could benefit from targeted municipal efforts. The maps below show the SNAP gap distribution for the general and elderly (60yr+) populations in MA.





METHODOLOGY

Zip code level data from the 2015 American Community Survey 5-year estimate was used exclusively for consistency to acquire SNAP gap participation rates and demographic details. To construct the SNAP gap, the number of participating SNAP households was subtracted from an estimated number of households with gross income at or below 200% FPL. Relevant gross income data for households with at least one elderly (60yr+) member was unavailable therefore the 200% or below poverty rate for the state was used to calculate an estimate. It is important to note that MA offers a series of additional income deductions specifically for elderly individuals above the 200% FPL threshold who are applying for SNAP assistance. As a result, the SNAP gap presented in this study is conservative and likely underrepresents the number of elderly individuals eligible for benefits.

The spatial autocorrelation tool (Global Moran's I) was applied to determine whether the SNAP gap distribution across the state is random or not. The results provide strong evidence ($p \approx 0.0000$) that both the SNAP gap percentage and the number of SNAP gap households are clustered. A cluster and outlier analysis (Local Moran's I) identified zip codes with high concentration of SNAP gap households; intervention in these areas will prove to have the greatest impact.

REGRESSION ANALYSIS

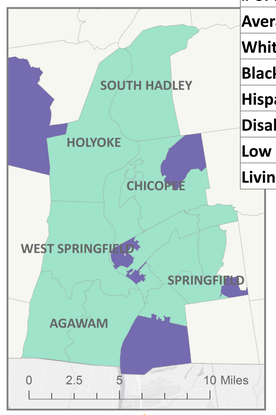
Demographic data was used to construct a regression equation to explain the relationship between various factors and low SNAP participation by the elderly. Demographic variables included racial breakdown (white (W), black (B), Hispanic/Latino (H)), disability status (D), English language proficiency "not well" or "not at all" (L), and living alone (LA). Demographic rates among adults 65 yr+ were used to estimate data for those 60yr+.

$$\textit{Estimated SNAP gap} = \beta_0 + \beta_1 W + \beta_2 B + \beta_3 H + \beta_4 D + \beta_5 L + \beta_6 LA$$

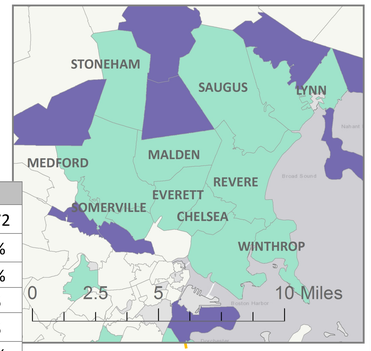
	Corr. Coef. (β)	p-value	95% CI
White	3.79	0.062	(-0.19, 7.76)
Black	8.55	0.001	(3.69, 13.4)
Hispanic	0.25	0.928	(-5.12, 5.61)
Disability	1.50	0.253	(-1.08, 4.08)
Language	9.98	0.000	(4.93, 15.02)
Living Alone	2.93	0.026	(0.36, 5.50)
Intercept	-319.2357	0.105	(-705.02, 66.55)

The results show that among all of the variables surveyed, limited English language proficiency, living along, and/or black racial identity significantly increase an elderly individual's susceptibility to a high SNAP gap. The low adjusted R^2 of 0.1422 implies that the observed data only explains 14% of the variation in the overall SNAP gap trend in MA. The intercept is negative due to the predominant white population percentage in MA.

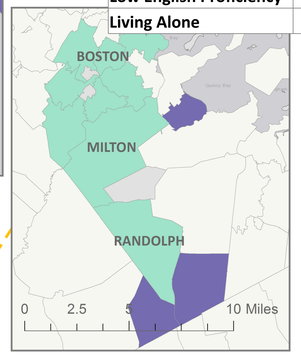
RECOMMENDED INTERVENTION AREAS



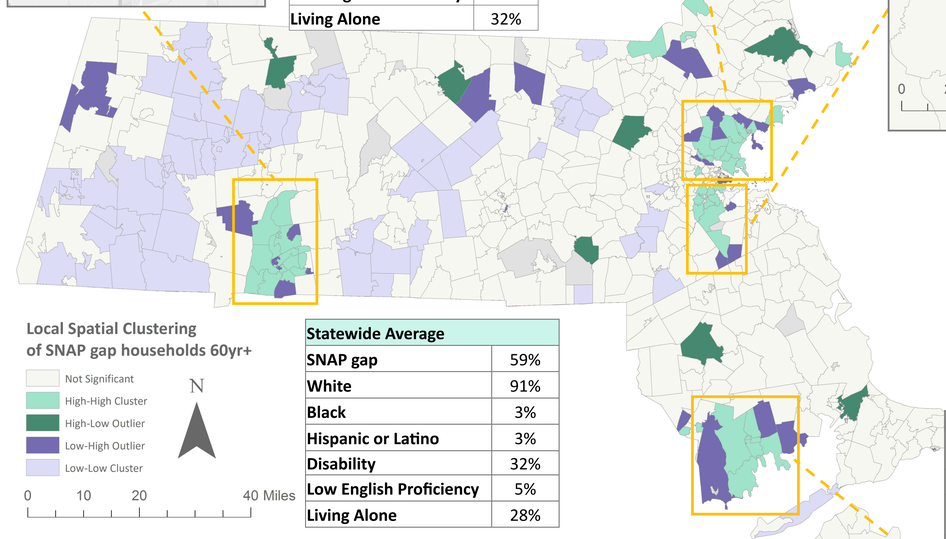
Springfield Area	
# of Households	8,869
Average SNAP gap	54%
White	77%
Black	10%
Hispanic or Latino	11%
Disability	43%
Low English Proficiency	11%
Living Alone	33%



Malden Area	
# of Households	7,472
Average SNAP gap	44%
White	83%
Black	5%
Hispanic or Latino	6%
Disability	40%
Low English Proficiency	15%
Living Alone	32%

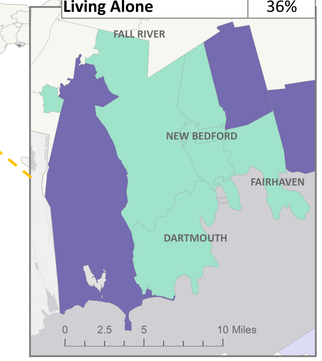


Milton Area	
# of Households	4,433
Average SNAP gap	37%
White	47%
Black	38%
Hispanic or Latino	10%
Disability	41%
Low English Proficiency	18%
Living Alone	32%



Statewide Average	
SNAP gap	59%
White	91%
Black	3%
Hispanic or Latino	3%
Disability	32%
Low English Proficiency	5%
Living Alone	28%

Dartmouth Area	
# of Households	5,297
Average SNAP gap	53%
White	91%
Black	2%
Hispanic or Latino	3%
Disability	44%
Low English Proficiency	18%
Living Alone	36%



CONCLUSION

Findings from this study reveal that elders in certain regions in MA are disproportionally enrolling in SNAP. The regression analysis shows that specific demographic groups may also be at a higher risk of low enrollment and therefore experience greater food insecurity. The cluster analysis highlights areas where the number of SNAP gap household is high and low. Information gathered from regions with low number of SNAP gap households can be used to implement incentives and programs that promote enrollment in high SNAP gap areas.

As outlined in the methodology section, assumptions about the 200% FPL and demographic parameters were used to estimate data for elderly population (60 yr+). MA specific data from the DTA, which is not currently publically available, will more accurately represent the SNAP gap in the state in future research. Further inquiries should also consider additional demographic factors besides those surveyed in this study both to better quantify elders over the 200% FPL threshold who are eligible and to evaluate factors that may impact enrollment.

Since 2015, the DTA has introduced a separate streamlined application for the elderly in the hopes of improving enrollment. Two bills calling for a common application for MassHealth and SNAP benefits are also actively proceeding through the legislative process. Compared to other food security variables that either do not change or change slowly (race, income, walkability, etc.), the SNAP gap offers a unique opportunity for evaluating food access over short periods of time among specific populations of interest. SNAP gap assessments therefore can serve as a powerful tool in assessing the effectiveness of certain incentives and programs in raising SNAP program enrollments.

Tetyana Pecherska | UEP 232 - Intro to GIS | 12.18.2017
Projection: NAD 1983 2011 StatePlane Massachusetts
Data: American Community Survey 5-year estimate (2015), US Census town data and TIGER zip codes, ESRI.
Sources: USDA ERS, MLRI, GBFB, and AARP.

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