**APPENDIX**

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**Appendix A**

**Manager Interview-Administered Survey Items**

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| *Manager Characteristics* |
|  | Measure | Survey Item and Description |
| Sociodemographic1, 2 | Age | What is your age?In inferential analyses, age was dichotomized at the median (35 years) |
|  | Gender | Are you female or male?Response options: female or male |
|  | Race/Ethnicity | With what race/ethnicity/culture do you identify?Categorized into white managers (only selecting “Caucasian (White)”) and managers of color (selecting one or more of the following: “Latino/Hispanic,” “Mexican immigrant/Mexican American,” “Central/South American including from the Caribbean,” “Black or African American,” “Asian/Asian-American,” “Native Hawaiian or Pacific Islander,” or “American Indian or Alaska Native”) |
|  | US Nativity | Were/are you: (Response: Born in the US; Foreign Born, Born abroad to US parents; Refused to answer) Categorized as: born in the US or born to US citizen(s) vs. born outside U.S. to non-US citizens |
|  | Educational Attainment | How many years of formal education have you completed?Combined into three categories: high school degree or less, some college, and college graduate or more  |
| Characteristics of the Management Position3 | Job Title | What is your job title?Response options: owner, manager, assistant manager, or other title |
|  | Length of ownership or managing | How long have you (owned or managed) this store? Numeric response |
|  | Drive Time | How long would it take you to drive from the place where you live to this store (when there is no traffic)? Response options: ranged from 1-5 minutes to > 30 minutes |
| Manager perceptions of their and the store’s connection to the neighborhood4, 5 | 4- item neighborhood attachment scale | Adapted from a previous scale validated by Fornara, et al. (2011) and designed to measure place attachment, as feelings towards places play a role in an individual’s identity and life meaning (Cronbach alpha= 0.72). |
|  |  | 1. As a store operator or manager, I feel integrated in this neighborhood. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree |
|  |  | 2. This is the ideal neighborhood for my store. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree |
|  |  | 3. It would be hard for me to have my store leave this neighborhood. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree |
|  |  | 4. My store would be more successful if it were located in another neighborhood. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree |
| *Store and Neighborhood Characteristics* |
| Characteristics of the Store6 | Store ownership status | Store ownership status was primarily determined from a closed-ended item asking managers whether the store was independently-owned, corporately-owned, or part of a franchise. We collapsed franchise and corporately-owned stores into one category to compare these to independently-owned retailers. |
| Characteristics of the Neighborhood7 | Neighborhood low-income and low-access status | We used USDA (2017) criteria to determine neighborhood low-income and low-access (LILA) status (i.e., located within or outside a low-income and low-access census tract). Tracts were classified as low-income if they met any of the following criteria: (1) median family income <80% of the state-wide median family income; (2) poverty rate >20%; or (3) median family income <80% of the metropolitan area’s median family income. Tracts met the criteria for low-access if at least 100 households were >1/2 mile from the nearest supermarket and had no access to a vehicle kept at home for non-business use. Stores in census tracts meeting these criteria were then identified as located within a LILA neighborhood. |
| City | City | City refers to the city from which stores were sampled (i.e., Minneapolis or St. Paul) and allowed for comparisons to be made across the ordinance-affected (Minneapolis) and comparison (St. Paul) sites. |
| 1. Ayala G, Laska M, Zenk S, et al. Stocking characteristics and perceived increases in sales among small food store managers/owners associated with the introduction of new food products approved by the Special Supplemental Nutrition Program for Women, Infants, and Children. Public Health Nutrition 2012; 15: 1771-1779. DOI: 10.1017/S1368980012001255.2. U.S. Census Bureau. American Community Survey and Puerto Rico Community Survey (2012) Subject Definitions, http://www.census.gov/acs/www/Downloads/data\_documentation/SubjectDefinitions/201 2\_ACSSubjectDefinitions.pdf (2012).3. Besser TL and Miller NJ. The Risks of Enlightened Self-Interest: Small Businesses and Support for Community. Business & Society 2004; 43: 398-425. DOI: 10.1177/0007650304271140.4. Fornara F, Bonaiuto M and Bonnes M. Cross-Validation of Abbreviated Perceived Residential Environment Quality (PREQ) and Neighborhood Attachment (NA) Indicators. Environment and Behavior 2010; 42: 171-196. DOI: 10.1177/0013916508330998.5. Giuliani MV. Theory of Attachment and Place Attachment. In M. Bonnes, T. Lee, and M. Bonaiuto (Eds.), Psychological theories for environmental issues. 2003, pp.137-170.6. Winkler MR, Lenk KM, Caspi CE, et al. Variation in the food environment of small and non-traditional stores across racial segregation and corporate status. 2019; 22: 1624-1634. DOI: 10.1017/S1368980019000132. 7. United States Department of Agriculture (USDA). Food Access Research Atlas Documentation. In: Service ER, (ed.). 2017. |

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| *Managers Views on Policy and Government* |
| Item Type | Measure | Survey Item and Description |
| Closed-ended Items | Support for a stocking policy1 | For you, personally, how likely would you be to support changes to LOCAL OR STATE POLICIES that would do each of the following: Requiring food stores to stock certain kinds of healthy products, like fruits and vegetables. Response options: 1= very unlikely, 2= unlikely, 3= neutral, 4=likely, 5= very likely |
|  | Support for a program to assist stores in providing fresh produce1 | For you, personally, how likely would you be to support changes to LOCAL OR STATE POLICIES that would do each of the following: Create a program that helps small food stores have fresh produce. Response options: 1= very unlikely, 2= unlikely, 3=neutral, 4=likely, 5= very likely |
|  | Agreement that government regulation is good/ needed2 | Agreement that government regulation is good/ needed was assessed with a two-item scale and scores were averaged across the two items (Cronbach’s alpha= 0.69). |
|  |  | 1. In general, government regulation of business is necessary to protect the public interest. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree |
|  |  | 2. In general, government regulation of business usually does more harm than good. Response options: 1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5= strongly agree; This item was reverse coded. |
| Open-ended Items  |  | Five open-ended questions (included at time 4 only) were asked only of managers in Minneapolis. Manager responses to the questions were hand-recorded by data collectors. |
|  | Knowledge about the Minneapolis ordinance | Can you tell me what you know about this policy, the Staple Foods Ordinance? |
|  | Buying more staple foods | Do you think this policy will result in customers buying more staple foods at stores like yours? |
|  | Policy Concerns | Can you tell me about any concerns you have with this policy? |
|  | Suggestions for improvement | Do you have any suggestions for how the Staple Foods Ordinance could be improved? |
|  | Suggestions for the city | Do you have any suggestions for things the city could do to help stores like yours meet the staple foods requirements in this policy? |
| 1. Foltz JL, Harris DM and Blanck HM. Support Among U.S. Adults for Local and State Policies to Increase Fruit and Vegetable Access. American Journal of Preventive Medicine 2012; 43: S102-S108. DOI: 10.1016/j.amepre.2012.05.017.2. Pew Research Center. Political typology quiz, (2014, accessed 15 May 2015). |

**Appendix B**

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| Store manager descriptive characteristics across Time 1-4 (2014-2017) in Minneapolis and St. Paul, MN, USA (n=155) |
|  |  |  |
|  | Time 1(N= 78) | Time 2(N= 108) | Time 3(N= 114) | Time 4(N= 112) |
|  | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) |
| Age (years) | 76 | 39 (14.1) | 107 | 37.8 (13.0) | 112 | 39.8 (13.2) | 109 | 38.5 (11.4) |
|  | N | Percent | N | Percent | N | Percent | N | Percent |
| Gender | 78 |  | 108 |  | 114 |  | 112 |  |
| Female |  | 32 |  | 39 |  | 35 |  | 38 |
| Male |  | 68 |  | 61 |  | 65 |  | 65 |
| Race/Ethnicity | 70 |  | 107 |  | 111 |  | 107 |  |
| Hispanic |  | 3 |  | 5 |  | 6 |  | 6 |
| Non-Hispanic |  |  |  |  |  |  |  |  |
| White |  | 69 |  | 68 |  | 61 |  | 58 |
| Black/African American |  | 14 |  | 17 |  | 22 |  | 26 |
| Asian/ Asian-American |  | 13 |  | 8 |  | 10 |  | 7 |
| American Indian/Alaska Native |  | 0 |  | 1 |  | 0 |  | 0 |
| Two or more races |  | 1 |  | 1 |  | 1 |  | 4 |
| U.S. Nativity | 78 |  | 108 |  | 114 |  | 111 |  |
| Born in U.S./ Born to US citizens |  | 68 |  | 69 |  | 67 |  | 76 |
| Born outside U.S. to non-US citizens |  | 32 |  | 32 |  | 33 |  | 24 |
| Education (highest level) | 78 |  | 108 |  | 114 |  | 111 |  |
| High school degree or less |  | 21 |  | 22 |  | 23 |  | 30 |
| Some college |  | 37 |  | 42 |  | 40 |  | 34 |
| College graduate (unknown degree) or more |  | 42 |  | 36 |  | 37 |  | 36 |
| Management Position | 78 |  | 108 |  | 114 |  | 111 |  |
| Owner |  | 31 |  | 27 |  | 26 |  | 20 |
| Manager |  | 47 |  | 58 |  | 52 |  | 54 |
| Assistant Manager |  | 19 |  | 15 |  | 20 |  | 25 |
| Other |  | 3 |  | 0 |  | 2 |  | 1 |
|  | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) |
| Length of time working in store in management position (years) | 76 | 3.9 (6.4) | 108 | 4.0 (6.0) | 114 | 3.8 (5.7) | 111 | 4.6 (7.1) |
|  | N | Percent | N | Percent | N | Percent | N | Percent |
| Lives within store community (drive time to work) | 78 |  | 108 |  | 114 |  | 111 |  |
| < 5 minutes |  | 15.4 |  | 21.3 |  | 18.4 |  | 15.3 |
| 6-10 minutes |  | 12.8 |  | 14.8 |  | 14.0 |  | 19.8 |
| 11-20 minutes |  | 44.9 |  | 29.6 |  | 40.4 |  | 36.9 |
| > 20 minutes |  | 26.9 |  | 34.3 |  | 27.2 |  | 27.9 |
|  | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) | N | Mean (sd) |
| Perceived manager/store connection to neighborhood (range 1-5; 1= strongly disagree 5= strongly agree)a | 77 | 3.9 (0.8) | 108 | 4.1 (0.7) | 112 | 3.9 (0.8) | 110 | 4.1 (0.8) |

Note. Testing of differences across time for each manager characteristic (chi-square or general linear model) showed no significant differences;

a An average of a 4-item modified scale assessing managers agreement with four statements *(“As a store operator or manager, I feel integrated in this neighborhood”, “This is the ideal neighborhood for my store”, “It would be hard for me to have my store leave this neighborhood”* *“My store would be more successful if it were located in another neighborhood”*(last item was reverse coded).

**Appendix C**

Regression analysis of manager views on policy and government regulation across manager, store, and neighborhood characteristics at Time 1 (N=78, 2014)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |   |  |  |  |  |  |
|  |  | Likelihood§ to support local/state policy requiring food stores to stock certain healthy products | Likelihood§ to support local/state policy that creates a program to help small food stores have fresh produce | Agreement† that government regulation of business is good/ necessary to protect public interests |
| **Manager Characteristics** |  |  |  |  |  |  |  |
|  | N | Mean (SE) | *P* Value‡ | Mean (SE) | *P* Value‡ | Mean (SE) | *P* Value‡ |
| Age |  |  |  |  |  |  |  |
| < 35 years | 36 | 3.3 (0.3) | 0.19 | 3.5 (0.2) | 0.24 | 2.8 (0.2) | 0.83 |
| >= 35 years | 40 | 2.8 (0.3) |  | 3.9 (0.2) |  | 2.8 (0.2) |  |
| Gender |  |  |  |  |  |  |  |
| Female | 25 | 3.4 (0.3) | 0.19 | 3.8 (0.3) | 0.68 | 3.0 (0.2) | 0.31 |
| Male | 53 | 2.9 (0.2) |  | 3.6 (0.2) |  | 2.7 (0.1) |  |
| Race/Ethnicity |  |  |  |  |  |  |  |
| Non-Hispanic White Managers | 48 | 2.8 (0.2)a | 0.02 | 3.4 (0.2)a | 0.03 | 2.9 (0.1) | 0.21 |
| Managers of Colora | 22 | 3.7 (0.3)b |  | 4.1 (0.3)b |  | 2.6 (0.2) |  |
| U.S. Nativity |  |  |  |  |  |  |  |
| Born in U.S./ Born to US citizens | 53 | 3.1 (0.2) | 0.95 | 3.5 (0.2) | 0.07 | 2.8 (0.1) | 0.98 |
| Born outside U.S. to non-US citizens | 25 | 3.1 (0.3) |  | 4.0 (0.3) |  | 2.8 (0.2) |  |
| Education  |  |  |  |  |  |  |  |
| High school degree or less | 16 | 2.8 (0.4) | 0.40 | 3.2 (0.3) | 0.27 | 3.1 (0.3) | 0.33 |
| Some college | 29 | 3.4 (0.3) |  | 3.8 (0.2) |  | 2.6 (0.2) |  |
| College graduate or more | 33 | 2.9 (0.3) |  | 3.7 (0.2) |  | 2.9 (0.2) |  |
| Management Position |  |  |  |  |  |  |  |
| Owner | 24 | 3.0 (0.3) | 0.70 | 3.9 (0.3) | 0.35 | 2.9 (0.2) | 0.69 |
| Manager | 37 | 3.0 (0.3) |  | 3.7 (0.2) |  | 2.7 (0.2) |  |
| Assistant Manager or “Other” | 17 | 3.4 (0.4) |  | 3.3 (0.3) |  | 2.9 (0.2) |  |
| Length of time working in store management |  |  |  |  |  |  |  |
| < 2 years | 36 | 3.1 (0.3) | 0.93 | 3.6 (0.2) | 0.47 | 2.8 (0.2) | 0.88 |
| >= 2 years | 40 | 3.1 (0.3) |  | 3.8 (0.2) |  | 2.8 (0.2) |  |
| Lives within store community (drive time to work) |  |  |  |  |  |  |  |
| < 10 minutes | 22 | 3.5 (0.3) | 0.31 | 3.9 (0.3) | 0.36 | 2.8 (0.2) | 0.95 |
| 11-20 minutes | 35 | 2.9 (0.3) |  | 3.4 (0.2) |  | 2.8 (0.2) |  |
| > 20 minutes | 21 | 2.9 (0.3) |  | 3.8 (0.3) |  | 2.8 (0.2) |  |
| Perceived manager/store connection to neighborhood  |  |  |  |  |  |  |  |
| Score= 1-3 | 31 | 3.2 (0.3) | 0.47 | 3.5 (0.2) | 0.23 | 2.7 (0.2) | 0.47 |
| Score= 4-5 | 46 | 3.0 (0.2) |  | 3.8 (0.2) |  | 2.9 (0.1) |  |
| **Store & Neighborhood Characteristics** |  |  |  |  |  |  |  |
|  | N | Mean (SE) | *P* Value‡ | Mean (SE) | *P* Value‡ | Mean (SE) | *P* Value‡ |
| Ownership |  |  |  |  |  |  |  |
| Corporate/Franchise-owned | 40 | 3.1 (0.3) | 0.95 |  3.3 (0.2)a | 0.01 | 2.6 (0.2) | 0.11 |
| Independently-owned | 38 | 3.1 (0.3) |  |  4.1 (0.2)b |  | 3.0 (0.2) |  |
| Neighborhood LILA Statusb |  |  |  |  |  |  |  |
| LILA | 27 | 3.0 (0.3) | 0.79 | 3.5 (0.2) | 0.36 | 3.1 (0.2) | 0.11 |
| Not LILA | 51 | 3.1 (0.2) |  | 3.8 (0.2) |  | 2.7 (0.1) |  |
| City |  |  |  |  |  |  |  |
| Minneapolis | 43 | 3.1 (0.2) | 0.75 | 3.7 (0.2) | 0.65 | 2.8 (0.2) | 1.00 |
| St. Paul | 35 | 3.0 (0.3) |  | 3.6 (0.2) |  | 2.8 (0.2) |  |

§Single item: Response Range= 1= Very Unlikely, 5= Very Likely;

†Scale: Average Response Range across items= 1= Strongly disagree, 5= Strongly agree;

‡Differences assessed by ANOVA (*P* < 0.05)

aManagers of Color include Hispanic and Non-Hispanic Black Asian, Mixed/ Two or more Races).

bLILA =store in census tract with low income and low access

Different superscripts distinguish significant differences (*P* <0.05) by manager characteristics (a,b).