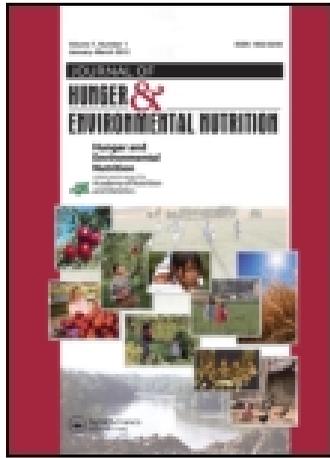


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## RESEARCH BRIEF

# Stakeholder and Policy Maker Perception of Key Issues in Food Systems Planning and Policy Making

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*Research findings have suggested a vital need to understand the food environment: the pervasiveness of unhealthy food exacerbates social inequalities; malnutrition contributes to obesity, heart disease, and diabetes; and planners and policy makers have historically been absent from the food system. Little research has shown how food system actors vary in their individual understandings of these and other general truths. The lack of understanding or misunderstanding of key issues can lead to ineffective policy formulation or efforts toward solving the wrong problem.*

*To determine opinions on food system issues and to uncover dissonance between research and practice, a survey was administered to stakeholders from various sectors of the food system across North America. Significant differences existed regarding problems and solutions, suggesting challenges for food system actors. These varying opinions illustrate the need to conduct and disseminate empirical research on the food system to encourage evidence-based decision making.*

**KEYWORDS** *local food policy, food systems planning, stakeholder opinion*

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## INTRODUCTION

A growing body of research continues to build the case for devising policies to address issues in the food environment and food systems planning. For instance, the evolution of food retail into big-box stores tends to obviate the presence of small grocery stores in urban centers.<sup>1</sup> In addition, the absence of nutritious food sources such as grocery stores, and the abundance of unhealthy food options in grocery stores and fast food restaurants, can contribute to impaired choice in decision making around food consumption.<sup>2</sup> Further, subsidies of basic farm commodities tend to benefit large food companies, who create primarily unhealthy, value-added food products.<sup>3</sup> The proliferation of these products contributes to increasingly easy access of unhealthy food products to the general public.

Other aspects of food policy and planning are less clear. For instance, some disagreement exists over the prospects of local or organic food to deliver socially just food networks to citizens.<sup>4,5</sup> The exact effect of access to healthy foods on diet and health has not reached consensus among researchers,<sup>6</sup> stemming from differing views on the relative impact of structure or agency in food consumption behaviors.<sup>7,8</sup>

Despite abundant research on food systems, little research has shown how policy makers and food system actors may vary in their individual understandings of existing research and theories about food systems.<sup>9</sup> Misunderstanding of existing research may lead policy makers and advocates to commit errors in formulation by focusing on the wrong issue and thus attempting to solve the wrong problem.<sup>10</sup> Additionally, the expenditure of resources on ineffective programs further inhibits effective food policy change. The divide between policy and evidence is likely not a deliberate attempt to suppress information, but the political nature of policy making often prevents effective use of research findings.<sup>11,12</sup> Some groups may lack the resources (whether time or material) to systematically review academic literature and make informed decisions from this work, so breaking down governmental silos is important to building capacity.<sup>12</sup> Yet a critical need exists for policy makers to understand present food systems research and leading ideas for policy programs and interventions. This understanding will help resolve the public health and economic problems associated with the current conventional food system and the powerful food lobby, which pushes for value-added, often unhealthy food products.<sup>11-13</sup>

This research will examine the perceptions of various stakeholders in food systems research and practice to determine the following: (1) Over what research findings do food system actors (dis)agree the most? (2) Are there apparent differences of opinion by country of origin or length of tenure and position with respect to working with the food system? (3) How do these opinions align with existing research on the food system?

The main purpose of this research is to uncover the degree to which food system actors (including representatives from local food networks,

public health departments, municipal and provincial/state government agencies [including planning], university researchers, and other community stakeholders) perceive the key issues within the food system and discover any gaps between food system research and practice. In general, it is hypothesized that there will be some disconnect between perceptions and research findings relating to the food system.

## LITERATURE REVIEW

Planners and policy makers often overlook the food system as an integral urban system influencing residents' quality of life. The food system is rarely included in official city plans, and planners have cited many reasons for the exclusion.<sup>14</sup> But though there has been a lack of involvement, research has demonstrated the importance of a team of interdisciplinary, well-informed policy makers working collaboratively to move food policy forward.<sup>12,15</sup> Where practitioners are involved, additional work suggests that policy makers must create food policies that are explicitly health-promoting to truly make a difference.<sup>10</sup> Muller and colleagues,<sup>10(p231)</sup> paraphrasing research by Hamm, indicated that

Faced with these food system complexities, most food and agriculture issues are discussed in silos and without adequate consideration for the ancillary impacts on other food system issues or the public's health.

The food system should be on the policy-making agenda for a number of reasons, given its vital importance and the frequent interactions that people have with food. Everyone requires food for subsistence, many people are employed by some aspect of the food industry, and households spend 10% to 40% of their income on food.<sup>14</sup> For those unable to access nutritious food or for those inundated with unhealthy food options, however, malnutrition may become an issue. A poorly constituted diet, in turn, can have long-term health effects, including an increased propensity for diabetes, cancer, and heart disease.<sup>16</sup> That these nutritional inequalities often strike low-income, low-mobility residents is a serious public health concern.<sup>17</sup> Researchers have insinuated planners and policy makers as key players in improving population health because long-term solutions to obesity are found more often in planning measures that support health-promoting environments than by individual-level interventions by the medical field.<sup>18</sup> Indeed, recently passed public health measures in Canada are projected to increase the gross domestic product and reduce the prevalence of chronic diseases.<sup>19</sup> In addition, many planning interventions can be devised to improve the local food environment, including the revision of local land-use plans to accommodate community gardening and urban agriculture.<sup>20</sup>

Changes in the food system have raised concerns among many people seeking not only short-term hunger alleviation but long-term food security and environmental sustainability. Planners become key actors in modifying zoning codes and developing policies to support stronger local food systems.<sup>15</sup> Meanwhile, planners and public health practitioners alike are increasingly called to address health disparities, given the reputation of the conventional food system as detrimental to the environment and profit-seeking to the exclusion of societal well-being.<sup>15</sup> Current food system policies tend to support this assertion, given the increased availability of high-fat, high-sugar, and low-quality meat-based diets.<sup>10</sup>

When planners and policy makers do engage with food system issues, they at times enact policies that often precede or preclude consideration of existing research findings.<sup>21</sup> The long-time emphasis of food policy on agricultural interests and the only recent focus on food for health make opportunities for food-as-health-promotion policy more problematic.<sup>10</sup> It is important, therefore, to understand the ways in which food system actors conceptualize problems within the food system, as well as to reflexively provide them with the state of research on the food system. The present research will examine the perceptions of various food system actors and suggest areas where perceptions may not line up with existing research. In turn, food system actors can use the results to make informed policy decisions in the future.

## METHODS AND ANALYSIS

This research used an online survey to gather information on the perceptions of various stakeholders in the food system ( $N = 157$ ). The survey tool was loosely based on prior work by Pothukuchi and Kaufman.<sup>14</sup> The sample included nearly equal respondents from the United States ( $N = 78$ ) and Canada ( $N = 79$ ), representing 29 states and 9 provinces. Respondents represented a range of fields, including local food networks (41%), public health departments (22%), municipal and provincial/state government agencies (19%), and university research teams (12%). Advocates not directly affiliated with the food system constituted the remaining 6%.

Likert-scale questions were derived from the content of previous research findings (eg, access to healthy food influences diet) and community food policies (eg, aligning public transportation routes with grocery stores) and designed to reveal levels of stakeholder agreement or disagreement on key issues. Some questions therefore spoke directly to existing research, whereas others were based on various policies enacted in different contexts. The complete survey may be found in the Appendix.

Potential participants were identified and invited through a multistage process. The authors actively participate in local food networks in both southeastern Michigan and southwestern Ontario, so fellow participants of

these networks were the first food system actors approached for participation (via e-mail), because the study aligned with the planning and advocacy efforts of those networks. The potential participant list was then expanded by contacting (via e-mail) various urban planners and participants in other food networks around Michigan and Ontario. To capture a broader audience, contact was made with participants from organizations listed in a recent article in this journal.<sup>22</sup> Invitations to complete the survey were sent via e-mail to an additional approximately 300 actors who were identified through their participation at regional workshops/symposia (related to food, health, or planning) and/or their organization website. At all stages, snowball sampling was used, because many respondents suggested additional participants for the survey. The intention of the sample was to target both those who work closely with the food system and those who may not typically work with the food system but who may feel connections to it.

Analysis of the surveys entailed various statistical tests to determine relationships between data. General descriptive statistics were calculated to identify means and standard deviations of responses. The mean score and standard deviation for each question are contained in the Appendix. Mean scores closer to 1 indicate strongest agreement among respondents, and mean scores closer to 4 indicate strongest disagreement among respondents. Neutral options were not provided to encourage respondents to choose one side of the statement. In general, variables with the lowest standard deviation suggest consensus, whereas scores with the highest standard deviation indicate much disagreement over the correct answer.

Additionally, analysis of variance (ANOVA) was used to uncover relationships between responses and respondent characteristics by geography, tenure, and organization. Tukey's post hoc test was run to determine the subcategories that caused significant differences in ANOVA scores. Though some debate remains regarding this subject, Norman recently demonstrated the effectiveness of using parametric statistics on Likert scale-derived data.<sup>23</sup>

## RESULTS AND DISCUSSION

The results of the survey data analysis using descriptive statistics and chi-square analysis revealed a stream of primary areas of general agreement or contention, including social justice; consumer behavior; the relationships among food, diet, and health; control in the food system; and regulation. Furthermore, results of ANOVA tests revealed how responses to different questions varied by respondent characteristics, including respondent country of origin, length of tenure working in the food system, and organizational position.

Though respondents may share consensus on some issues, academic research regarding the food environment and food system planning is not fully resolved. An additional goal of this research is to compare responses

of food system actors in relation to corresponding academic research. Predominantly agreed-upon research findings served as expected values in the chi-square analysis such that, for example, the expected value was *strongly disagree* for the statement “The food system is an exclusively rural issue.” In some cases, popular opinion rejected the null hypothesis and did not correspond with prevailing academic understanding of the particular issue. These inconsistencies were seen on statements related to consumer behavior, popular public discourse on food deserts, and a general disdain for the conventional food system. The general agreement with statements from the following sections—social justice and food, diet and health—suggest a good understanding of the research on these topics.

## Social Justice

Reflecting general agreement with the academic literature related to social justice and food,<sup>24,25</sup> respondents strongly agreed with statements such as “The poor more often than not have poor access to healthy foods,” “Food security is a problem in our community,” and “Food insecurity is a result of structural problems within the food system that predispose certain populations to have inadequate access to healthy foods.” Despite structural inequalities identified by respondents, food banks and other charitable food assistance programs were generally considered only temporary solutions to the more systemic problems underlying food insecurity—though Americans were significantly less likely than Canadians to agree with this statement. In contrast to the considerable body of academic research on the subject, respondents overall disagreed that supermarkets are an affordable source of healthy foods for low-income residents, though Canadians were more likely than Americans to disagree. Though there is tension between many food advocacy groups and the conventional food system, however, past research findings indicate that the current arrangement of grocery stores (including many large food retail chains) does provide nutritious food less expensively than smaller grocers or convenience stores. The issue lies more in whether food system actors felt that low-income residents in their community could physically access these amenities. Respondents did all agree that local food systems can be more profitable than conventional food systems, though Americans were significantly more likely to agree with this statement. This may signify an idea that these networks can help to supplant conventional food networks in low-income areas.

Echoing the popular public discourse on food deserts,<sup>26–28</sup> respondents agreed that the poor more often than not have poor access to healthy foods and that food retail is not equitably distributed based on neighborhood purchasing power. Despite media attention to the contrary, several recent academic studies have shown a lack of systematic sociospatial inequalities,<sup>29–31</sup> meaning that not *all* economically disadvantaged residents

have inadequate access to healthy foods. Rather, poor access affects both low- and average-income individuals, but the problem can be exacerbated in poor households because of extrinsic mobility constraints. Though related to the concept of systematic inequalities in access with respect to food retailing, mobility constraints reflect a different societal issue.

Regarding inequalities based on purchasing power, it is unlikely that retailers have looked for ways to increase disadvantage among the poorest people in a community. Ultimately, retailers are driven by profits, and stores in affluent neighborhoods draw patrons with greater spending power.<sup>32–34</sup> Though many stores have closed in poorer neighborhoods, this phenomenon is likely a reflection of business practice, rather than a direct attempt to subvert healthy lifestyles among disadvantaged populations. Thus, though actor opinion in this study suggested that retail change was deliberately penalizing the poor, academic research suggests that the issue is more complicated.

### Food, Diet, and Health

Survey respondents strongly and significantly agreed (based on chi-square results) with statements derived from public health research such as “Access to healthy foods positively influences diet” and “Access to junk foods negatively influences diet,”<sup>21,35,36</sup> with Canadian respondents agreeing more strongly with many of these statements. Despite widespread recognition of the link between food access and diet, however, resolving this issue may be complicated because many municipal planners are unlikely to wield enough influence to either eliminate junk food outlets or bring healthy food stores to underserved areas. Respondents also recognized the importance of structural factors—such as the evolution of food retailing—that predispose certain populations to have inadequate access to healthy food.<sup>37</sup>

Irrespective of behavioral considerations, respondents did indicate that access to healthy foods would positively influence diet, despite research suggesting that the causal pathways of poor food consumption are more complicated than geographical access. Factors related to economics, education, behavior, and culture all complicate the apparent geographic relationship between accessibility and diet. Policies should therefore be carefully designed to consider all elements of food accessibility.

The recognition of issues of food insecurity, the casting of responsibility on structural problems, and the understanding of the relationship between the built environment and health all suggest that policy advocacy among this respondent group would likely target environmental interventions in the food environment. But the idea that structural interventions are sufficient to resolve these social and health issues neglects consideration of those additional elements of food accessibility. Overall, the lack of any significant differences between the responses of planners and other groups indicates a concomitant lack of divergence in knowledge acquisition on this topic.

## Consumer Behavior

When considering questions of consumer behavior, of particular interest is the low degree of consensus with the following statement (as evidenced by a high standard deviation): “Food insecurity is a result of behavioral choices that people make that cause them to eat too few healthy foods and too many unhealthy foods.” Though most respondents identified structural inequalities as contributing to food insecurity, the divergence of opinion here suggests that fewer believe in the power of agency to potentially foster healthy decisions.

In line with conventional yet increasingly criticized discourse on the topic and based on a significant result in chi-square analysis, a significant volume of respondents also disagreed with the idea that food insecurity is caused by behavioral choices made by individuals. These respondents tended to downplay the importance of agency and personal decision making in shaping food security. Though structural causes play a role in determining food security, it has also been shown that the choices made by an individual are driven in part by personal desires.<sup>38–40</sup> Debates in policy formulation on this topic will lie in the extent to which people favor structure versus agency in consideration of personal behavior.

## Control in the Food System

Respondents strongly disagreed with statements suggesting a limited role of urban planning in the food system, including statements such as “The food system is an exclusively rural issue,” “The food system should be run exclusively by the private market,” and “The location decisions of food retail outlets should be left to food retailers (ie, planners should not be involved).” Respondents agreed that, perhaps given their understanding of structural inequalities in the food system, planners should have a hand in shaping the food environment for the benefit of food insecure and low-income individuals. This sentiment was consistent among both planners themselves and other groups. Most respondents would agree that the food system is an interrelated network of growers, producers, retailers, and consumers, as well as local citizens creating grassroots local food movements<sup>41</sup> and, as such, should be cocreated by all food system actors.

Canadian respondents advocated a much stronger governmental role in grocery store site selection and food price regulation. Americans, meanwhile, saw the private sector more favorably, advocating retailers as the primary catalyst behind grocery store site selection, though also calling for their increased involvement in donating to alternative food programs like food banks. In both cases, this may be a reflection of broad attitudes toward social policy in each country.

Respondents differed less in their opinions of control in the food system when considering tenure in their field or organizational position. Tukey’s

post hoc test showed that respondents with the longest tenure (20+ years) were more likely ( $P = .04$ ) than those with less tenure (3–4 years) to believe the food system is an exclusively rural issue. Respondents who had been with their organizations for the least amount of time (1–2 years) were also more likely than the most tenured (20+ years) to believe that grocers should be incentivized to work with area farms to provide locally grown food ( $P < .01$ ) and that the public sector should play a stronger role in alternative food programs like food banks, community gardens, and farmers' markets ( $P = .03$ ). Overall, younger workers embraced newer, more progressive ideas around food planning.

In terms of organizational position, the only significant variation in opinion was over the extent to which government should be involved in programs aimed at increasing healthy food consumption: farmers and other food sellers advocated for less involvement than food network activists, government workers, and public health workers. This may reflect underlying differences in political ideologies that are manifest in their employment status. Of note is that no significant difference existed between planners and other respondents in the way they viewed control in the food system.

## Regulation

Despite growing skepticism about the efficacy of taxation of unhealthy foods to encourage healthy behaviors, respondents strongly agreed with this method. Recent research from Denmark suggests that taxation may *not* be an effective means of increasing healthy consumption because of resistance from consumers.<sup>42</sup> Additional research suggests that taxes on unhealthy foods or subsidies for healthy foods would have a small impact on consumption behavior.<sup>43</sup> Multiple relationships suggest that, in general, respondents with less experience in their position (<10 years of service) were more likely ( $P < .01$  for all) than more tenured respondents (10+ years) to believe that food prices should be regulated to allow smaller merchants a chance to be profitable. Thus, though the attitude toward increased regulation may be more prevalent among younger actors, new research findings downplaying the efficacy of regulation may simultaneously inhibit the spread of these types of policies, which may test the ability of research to keep pace with food system practice.

Overall, the narrative created by these results tends to paint disadvantaged residents as unable to overcome the structural inequalities in the built environment and encourages government intervention to resolve issues in the food system. The attitude toward creating a discourse on need is increasingly met with caution by critical social science researchers.<sup>15,44</sup> Critics from both sides of the political spectrum suggest that this attitude toward the impoverished only tends to create a self-fulfilling prophecy of dependence on government support. Though structural issues play a pivotal role

in restricting opportunities, it is nevertheless important to recognize the potential for policies that aim to promote healthy behaviors.

## CONCLUSIONS

Ultimately, this research aims to highlight the opinions of food system actors so that potential policy making and food environment interventions will be based on a better understanding of research on the food system. Where disagreement exists among food system actors or between actor responses and peer-reviewed research, further work should be considered to prevent public policy programs that variously lack effectiveness or conflict with research findings. Differences between American and Canadian respondents should be considered in light of differences in sociopolitical contexts (eg, an expectation of greater government involvement in the food system in Canada). In addition, the lack of significant differences between planners and other groups may be interpreted as a success over past lamentations by making planners equally aware of issues in food system planning.<sup>14</sup>

Still, it is imperative to remain cautious regarding prescriptions for food system policy. Unlike other systems, the interconnectedness of food systems and public health creates various challenges that must be met by any serious policy maker.<sup>10</sup> Researchers suggest that the most effective remedies to the obesity epidemic would include both consumer- and producer-based components, recognizing the need for change in structural as well as behavioral dimensions.<sup>16</sup> The development of food policy councils, which bring together stakeholders and policy makers from various fields, offers an opportunity to devise all-encompassing food policies to enhance public health.<sup>10</sup> This research and further comparison of the opinions of food system actors with academic research can help inform the creation of these local advocacy bodies and improve the food system policy-making process. Through increasing the dialogue between food system researchers and practitioners and addressing the gaps between research and practice (and vice versa), policies may continue to move toward the goal of addressing social issues such as food insecurity, malnutrition, and, ultimately, the health and social outcomes of these issues.

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APPENDIX. ONLINE SURVEY QUESTIONS, DESCRIPTIVE STATISTICS, AND RESULTS OF SIGNIFICANCE TESTING<sup>a</sup>

General Questions	What is your current position?						Expected value O and chi-square <i>P</i> value
	What is the name of your organization?		How many years have you worked in this field?				
	Mean score	SD	ANOVA <i>P</i> value by				
			Country	Tenure	Group		
For each statement, indicate whether you <i>strongly agree</i> (1), <i>somewhat agree</i> (2), <i>somewhat disagree</i> (3), or <i>strongly disagree</i> (4)							
Your job							
My job is involved with the food system	1.52	.84	<.01*	.59	.33	n/t	
My job should be more involved with the food system	2.11	.97	.09	.43	.40	n/t	
Food accessibility/security							
Food security (the ability of someone to access nutritious, affordable foods at all times) is a problem in our community	1.33	.53	.96	.84	.24	n/t	
Access to healthy foods positively influences diet	1.22	.46	.02*	.34	.21	(3).38	
Access to junk foods negatively influences diet	1.38	.63	.06	.59	.70	(2)1.00	
Access to affordable healthy foods increases consumption	1.55	.62	.24	.95	.31	(2)1.00	
The poor more often than not have poor access to healthy foods	1.40	.56	.57	.65	.49	(4) <.01*	
Food insecurity is a result of structural problems within the food system that predispose certain populations to have inadequate access to healthy foods	1.50	.65	.22	.61	.04	(1)1.00	
Food insecurity is a result of behavioral choices that people make that cause them to eat too few healthy foods and too many unhealthy foods	2.71	1.03	.10	.68	.09	(1) <.01*	
Food retailing/planning system							
Retailers have systematically ignored poor neighborhoods	1.90	.61	.66	.25	.55	(4).47	
Food retail is equitably distributed based on neighborhood purchasing power	2.90	.89	.52	.39	.16	(1) <.01*	

(Continued)

## Appendix (Continued)

General Questions	What is your current position?					
	What is the name of your organization?	How many years have you worked in this field?				
	Mean score	SD	ANOVA <i>P</i> value by			Expected value <i>O</i> and chi-square <i>P</i> value
			Country	Tenure	Group	
Municipal planning departments don't have the funding to deal with the food system	2.33	.98	.48	.32	.30	n/t
The food system should be run exclusively by the private market	3.43	.75	.49	.45	.35	n/t
The location decisions of food retail outlets should be left to food retailers (ie, planners should not be involved)	3.51	.65	.27	.10	.85	n/t
The food system is an exclusively rural issue	3.86	.51	.49	.05*	.48	(4)1.00
Grocers should be incentivized to work with area farms to provide locally grown food	1.54	.69	.35	<.01*	.90	n/t
The food retailing system is best arranged by having few large low-priced grocers	3.57	.66	.22	.62	.09	n/t
The food retailing system is best arranged by having many small grocers with slightly higher prices	2.58	.80	.70	.30	.93	n/t
Solutions						
Food banks are only effective as a band-aid solution to short-term food insecurity	1.76	.79	<.01*	.63	.96	(1).28
Community gardens are effective as a solution to long-term community food insecurity	2.11	.79	.36	.46	.57	(2)1.00
Farmers' markets are effective as a solution to long-term community food insecurity	1.98	.71	.33	.28	.60	n/t
Locally grown foods improve affordability of healthy foods to low-income residents	2.07	.84	.23	.05*	.72	(2)1.00
Foods available in supermarkets improve affordability of healthy foods to low-income residents	2.21	.71	.05*	.73	.29	(1) <.01*
Local food systems can be more profitable than large-scale food systems in the percentage of money retained by a community	1.42	.56	.02*	.58	.17	(2)1.00

(Continued)

**Appendix** (Continued)

General Questions	What is your current position?						Expected value O and chi-square <i>P</i> value
	What is the name of your organization?	How many years have you worked in this field?					
	Mean score	SD	ANOVA <i>P</i> value by				
			Country	Tenure	Group		
Local food systems can be more efficient than large-scale food systems in the amount of food produced	2.09	.84	.77	.10	.52	(2)1.00	
Transit routes should be realigned to connect low-income customers with grocery stores	1.45	.55	.25	.62	.86	n/t	
Food prices should be regulated to allow smaller merchants a chance to be profitable	2.27	1.06	<.01*	<.01*	.59	n/t	
Taxing unhealthy food is an effective way to encourage consumers to eat better	2.14	.83	.25	.71	.47	(4).96	
Which level of involvement should the private and public sectors have in the following areas? (exclusive/high/mid/low/none → 1–5)							
Public sector involvement							
Alternative food programs (food banks, community gardens, farmers' markets)	2.38	.59	.66	.05*	.48	n/t	
Food pricing (taxation of unhealthy foods)	2.48	.84	.24	.54	.78	n/t	
Grocery store site selection	2.69	.76	<.01*	.35	.43	n/t	
Programs aimed at increasing healthy food consumption	2.16	.52	.70	.16	.35	n/t	
Programs to help people access nutritious food sources (shuttle services)	2.29	.60	.32	.28	.75	n/t	
Private sector involvement							
Alternative food programs (food banks, community gardens, farmers' markets)	2.81	.75	<.01*	.99	.17	n/t	
Food pricing (taxation of unhealthy foods)	3.40	.92	.09	.95	.80	n/t	
Grocery store site selection	2.67	.66	<.01*	.70	.50	n/t	
Programs aimed at increasing healthy food consumption	2.56	.69	.69	.50	.97	n/t	
Programs to help people access nutritious food sources (shuttle services)	2.63	.76	.76	.60	.82	n/t	

<sup>a</sup>n/t indicates statement not tested. Chi-square test of significance based on prevailing assumption of research.

\*Demonstrating significance at the 0.05 level.