(Possible) Title: A Piece of the Puzzle: Exploring How Managers Influence SNAP/EBT and Business Outcomes at Farmers’ Markets

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Introduction

In the United States, unhealthy food environments characterized by limited access to affordable fruits and vegetables are being targeted for improvement to increase fruit and vegetable consumption and reduce obesity and preventable chronic disease rates (Grimm et al, 2010; (Ogden et al, 2014; Ward et al, 2013; Story, 2007). Among the Centers for Disease Control and Prevention (CDC) and United States Department of Agriculture (USDA) recommended strategies for making food environments healthier is the introduction of farmers’ markets in communities where fresh produce is inaccessible (Khan et al, 2009). Farmers’ markets provide a direct economic benefit to participating farmers, and their flexibility facilitates their placement in communities where supermarkets do not exist (Stewart, 2006).

Studies suggest that simply placing a farmers’ market in a community does not guarantee it will be utilized for healthy food procurement, particularly by lower-income consumers who may also be those with highest chronic disease risk (Grimm et al, 2010).). There are many barriers to farmers’ market access, including lack of SNAP/EBT capability, logistical barriers (i.e., time, place, setting, transportation) and cultural barriers (i.e., feeling like an outsider) (Colsanti et al, 2010; Fisher et al, 2010, Suarez-Balcazar et al, 2006, Haynes-Maslow et al, 2013). The acceptance of federal nutrition benefits is one of the most important facilitators of farmers’ market use by low-income consumers (Briggs, 2010). The SNAP/EBT program allows participants to purchase food at farmers’ markets by swiping their benefit cards at wireless point of sale (POS) terminals. This creates a win-win situation wherein low-income consumers can afford farmers’ market produce, and participating farmers are exposed to a broader customer base. Despite the potential community health and economic benefits of the SNAP/EBT program, a relatively small number of farmers’ markets operate it (USDA AMS, 2013). In 2011, only 35% of farmers’ markets in the U.S. offered SNAP/EBT. An evaluation of NC’s farmers’ markets found that there are fewer markets with SNAP/EBT access in lower-income and minority counties (Bullock, S., et al, 2014). This finding highlights the importance of a better understanding of the barriers and facilitators to offering SNAP/EBT at markets, particularly in underserved communities.

Technical and financial support for SNAP/EBT placement at markets is widespread and growing. For example, initiatives like the North Carolina Community Transformation Grant (NCCTG) farmers’ market development and enhancement strategy help markets overcome the cost barrier to operating SNAP/EBT by providing funds and technical assistance for SNAP/EBT implementation (Pitts et al, 2013; Jones & Bhatia, 2009). There remains, however, limited formative research on management-related barriers to SNAP/EBT operations at farmers’ markets (Cole et al 2013). Managers are responsible for SNAP/EBT at their markets and are “the building blocks of any successful EBT program”. They play critical roles in encouraging economic vitality at their markets (i.e., customer counts, vendor sales, etc) (Briggs et al, 2010; Stephenson et al, 2007). A mismatch of funding goals and farmers’ market management could undermine significant public investment and derail strategic opportunities to improve public health and economic outcomes markets.

The objective of this study was to better understand how managers’ characteristics influence farmers’ market outcomes including: 1) food access for low income households and 2) business opportunities for farmers. We examined associations between farmers’ market managers’ motivations in their roles and public health impact and business vitality measured by vendor participation. We hypothesized that managers motivated by improving community food access were more likely to have SNAP/EBT available at their markets compared to managers less motivated by improving community food access. We then explored whether managers motivated to provide more local business opportunities had greater vendor participation compared to those who were not motivated to provide more local business opportunities, with the expectation that managers motivated by business would report better business outcomes. Answers to these questions could support ongoing investment in farmers’ market development and enhancements, and provide new insight into the managerial characteristics important for simultaneously achieving public health and business goals at farmers’ markets.

Methods:

*Study Setting and Participants*

In 2011, NC received Community Transformation Grant funds, which were provided by the CDC to awardees across the US to support programming to build healthier communities. Using these funds, NC created new farmers’ markets and provided enhancements to existing markets such as buildings, Supplemental Nutrition Assistance Program Electronic Benefit Terminals (SNAP/EBT), and transportation for low-income households (Pitts et al, 2013).

This study was part of a two-phase project to learn more about how NC farmers’ market managers perceived their roles, and how these perceptions are associated with market outcomes. The first phase involved formative qualitative data collection to inform questionnaire development for the North Carolina farmers’ market manager survey describe in this paper. In spring 2014, focus groups (4) and interviews (8) were conducted with farmers’ market managers (n=8) and farmers (n=8) in Southwest Virginia, East Tennessee and Western North Carolina to gather their perspectives on farmers’ market operations, the roles and motivations of farmers’ market managers, and managers’ influences on market outcomes in the following: (1) improving community food access and (2) improving business opportunities for local farmers. The focus group results were used to develop survey items assessing what managers perceived as being important aspects of their market, and what motivated them in their roles as managers. An exhaustive list of potential survey items (218 items) was reviewed by members of the NCCTG evaluation team and their feedback was used to select items for inclusion. These were combined with items assessing farmers’ market business vitality (i.e., customer counts and vendor participation) from the USDA 2009 Farmers Market Manager Survey (Ragland, 2009)The resulting survey was piloted with 5 farmers’ market managers who participated in the focus groups, and minor adjustments to the survey flow and question structure were made using their input. All elements of this study were approved by the East Tennessee State University Institutional Review Board.

The target population for the survey were North Carolina’s farmers’ market managers identified in the North Carolina’s Fruit and Vegetable Inventory Outlet (FVOI). The FVOI is a directory of all fruit and vegetable markets in the state that was developed for the CTG. For this study, all outlets categorized as “farmers markets” and their corresponding managers and their contact information (i.e., email addresses, phone numbers, and mailing addresses) were queried. This search yielded 271 managers, who were then contacted by e-mail, or telephone if their e-mail address was not available, and invited to participate in the web-based survey (Survey Monkey, PaloAlto, CA). Between May 14, 2014 and May 25, 2014 managers with an e-mail address received 2 reminder e-mails, and managers without e-mails received at least 1 reminder phone call. To increase participation, a second wave of data collection was conducted from July 22, 2014-August 15, 2014. This involved bulk postal mailing of 200 surveys to managers who did not respond in the first wave of data collection. Participants were provided with the option of completing a hard copy of the survey and returning it in a pre-paid envelope, or completing the survey online. Participants were given $10 for assisting with the study.

*Community food access and business motivation scores*

The study attempted to develop motivation scores using participants’ responses to Likert scale and ranking items. However, due to limited variance in the responses to the Likert scale items, only ranking variables were used to assess managers’ motivation. The independent variables for this study were 2 dichotomous motivation scores: 1) a community food access motivation score, and 2) a business motivation score. To form these variables, participants were given 6 aspects of their role as managers (see Table 1 and asked “which aspects of your job as farmers' market manager do you believe to be MOST important?” Participants were asked to rank the items in order of importance (1- most important to 6- least important). If participants ranked “making healthy food more available in my community” or “making food more accessible in my community” in the top 2 most important roles, they were assigned a high food access motivation score. All other participants were given a low food access motivation score. The business motivation score was created by assigning participants a high business motivation score if they ranked “supporting local agriculture” or “supporting business in general” as their top 2 most important roles.

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| Table 1: Distribution of survey items used to create binary food access and business motivation scores among North Carolina farmers’ market managers | | | | |
| **Food Access Motivation Score, n=63** | **n(%)** | | | |
| High food access motivation | 25(39.7)  38(60.3) | | | |
| Low food access motivation |
|  |  |  |  |  |
| ***Item responses*** | **n** | **Mean (SD)** | **Variance** | **Range** |
| Role: Making food more affordable\* | 59 | 3.47(1.39) | 1.94 | 1-6 |
| Role: Making food more accessible\* | 63 | 4.36 (1.43) | 2.04 | 1-6 |
| **Business Motivation Score, n=67** | **n(%)** | | | |
| High business motivation | 19(28.4)  48(71.6) | | | |
| Low business motivation |
|  |  |  |  |  |
| ***Item responses*** | **n** | **Mean (SD)** | **Variance** | **Range** |
| Role: Supporting local agriculture\* | 63 | 4.83(1.23) | 1.50 | 2-6 |
| Role: Supporting local artisans\* | 64 | 2.20 (1.22) | 1.49 | 1-5 |
| Role: Supporting the local economy in general\* | 63 | 3.19(1.67) | 2.80 | 1-6 |
| \* Possible responses range 1-6, 1 (least important) to 6 (most important) | | | | |

*SNAP/EBT Availability*

To measure SNAP/EBT availability (dependent variable), participants were asked “In 2013, was SNAP/EBT handled through a market-wide program? For example, did the market operate SNAP/EBT centrally (Yes or No)?”

*Business Outcomes*

The dependent variables in the model examining market vitality (business outcomes) were, total vendor count, average weekly vendor count, and local vendor count. Total vendor count was a continuous variable developed from the response to the question “How many vendors participated at your market in 2013?” Average weekly vendor count was a continuous variable developed from the response to the question “On average, how many vendors participated at your market each week in 2013?” Local vendor count was a continuous variable developed from the response to the question “In 2013, how many vendors at your market only sold farm products they produced themselves?” (Ragland, 2009).

*Covariates*

Covariates were selected based on characteristics of farmers’ market managers and markets that were hypothesized to influence market outcomes based on the literature. Manager characteristics included: whether or not the manager was paid (“Are you paid to manage the market? Yes or No”), the manager’s age (“What is your age in years?”), and the mangers’ years of experience (“Including 2014, how many years have you managed this market?”). Market characteristics included: the number of years in operation (“Including 2014, how many years has the market been in operation?”), and the number of volunteers (“Including you, how many volunteers work at this market?”).

*Data Analysis*

Data were analyzed in SPSS version 21 (SPSS IBM, New York, USA). Descriptive statistics were used to summarize participant characteristics. Binary logistic regression was used to examine the association between the likelihood that participants have SNAP/EBT at their farmers’ markets (dependent variable) and their community food access motivation score (independent variable) (Model 1).. Backwards selection of covariates was used to find the most parsimonious models. Models were adjusted for manager characteristics (age, pay status, and years managing the market, Model 2) and further adjusted for market characteristics (volunteers and years in operation, Model 3). Separate, crude (Model 1) multiple linear regression models were used to examine associations between continuous business outcomes (customer count, total vendor count, average weekly vendor count, and local vendor count, all dependent variables) and the dichotomous business motivation score (independent variable). These models were also adjusted for manager characteristics (age, pay status, and years managing the market, Model 2) and further adjusted for market characteristics (volunteers and years in operation, Model 3). Final, adjusted models retained only the covariates that were significantly associated with the dependent variable (p<.05) (Model 4).

Results:

Eighty (80) managers responded to the survey, including 3 duplicate responses that were removed. Seventy (70) managers responded beyond the first 2 questions and were thus included for analysis (26%% response rate). The average participant age was 48 years (range: 22-88 years) (Table 2). The majority of managers were paid to operate their markets (59%) and had an average of 5 years (range: 1-20 years) of experience managing the market. The average market had operated for 11 years (range: 1-41 years), and had an average of 8 volunteers (range: 0-300 volunteers). Markets had an average of 31 vendors in 2013 (range: 3-150 vendors), 19 (range: 1-65) vendors per week, and 17 local vendors per season (range: 0-125 vendors). An average of 353 (range: 0-3000 customers) customers visited the markets each week. Thirteen participants (19%) reported having the SNAP/EBT program at their markets (Table 2).

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| --- | --- | --- | --- | --- |
| Table 2: Characteristics of North Carolina Farmers Market Managers and the Markets They Manage, n=70 | | | | |
|  | **n** | **Mean (SD)** | | **Range** |
| **Manager Characteristics** | | | | |
| Manager’s age | 67 | | 47.8(15.0) | 22-88 |
| Years managing the market | 68 | | 4.9(4.2) | 1-20 |
| Paid managers; n(%) | 69 | | 41(59.4) |  |
| **Market Characteristics** | | | | |
| Volunteers | 63 | | 7.7(37.6) | 0-300 |
| Years in operation | 67 | | 10.9(9.8) | 1-41 |
| Total vendors, 2013 | 69 | | 30.9(27.1) | 3-150 |
| Average number of vendors per week, 2013 | 69 | | 19.4(15.9) | 2-65 |
| Number of local vendors, 2013 | 67 | | 17.5(20.9) | 0-125 |
| Average number of customers per week, 2013 | 54 | | 358.9(512.5) | 10-3000 |
| Markets with SNAP/EBT; n(%) | 67 | | 13(19.4) |  |
| Markets with vendors who operate SNAP/EBT; n(%) | 68 | | 8(11.6) |  |
| Value of market SNAP/EBT sales, 2013\* | 12 | | 1958(3107) | 0-8000 |
| SNAP/EBT customer count, 2013 | 10 | | 131.3(277.3) | 0-900 |
| \*Amount in US dollars | | | | |

For the first aim, the association between community food access motivation score and SNAP/EBT availability was not significant in the crude (Model 1: OR 1.33, SE 0.68) or adjusted models (Model 2: OR 1.57, SE 0.69; Model 3: OR 2.08, SE 0.87; Model 4: OR 1.89, SE 0.78) suggesting there was no association between community food access motivation score and SNAP/EBT availability (Table 3).

For the second aim, the association between business motivation score and total vendor count and average weekly vendor count was not statistically significant in the crude and adjusted models (Table 3). The association between business motivation score and local vendor count, however, was significant in the crude model (Model 1: β 13.05, SE 5.67) and when we adjusted for manager characteristics (Model 2: β 12.93, SE 5.67) and manager pay (Model 4: β 12.55, SE 5.45).

*It gets a bit awkward typing out and reading results for the non-significant findings for the linear regression models. Should I do that any way? Or just only list out significant findings and refer to the table for the others? Suggestions welcome!*

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| Table 3: Regression of SNAP/EBT Availability and Business Vitality Variables on Food Access and Business Motivation Scores | | | | |
| *Regression of SNAP/EBT Availability on Food Access Motivation Score among North Carolina Farmers Market Managers* | | | | |
|  |  | OR | SE | p |
| **Model 1,** n=62 | Food access motivation score | 1.33 | 0.68 | 0.67 |
| **Model 2,** n=60 | Food access motivation score | 1.57 | 0.69 | 0.51 |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.99 | 0.28 | 0.71 |
|  | Years managing the market | 0.86 | 0.15 | 0.31 |
|  | Pay status (Y/N) ¥ | 1.24 | 0.69 | 0.75 |
| **Model 3,** n=54 | Food access motivation score | 2.08 | 0.87 | 0.40 |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.99 | 0.04 | 0.95 |
|  | Years managing the market | 0.75 | 0.23 | 0.19 |
|  | Pay status (Y/N) ¥ | 0.69 | 0.91 | 0.68 |
|  | *Market characteristics* |  |  |  |
|  | Volunteers | 0.99 | 0.02 | 0.86 |
|  | Years in operation | 1.12 | 0.04 | 0.01\* |
| **Model 4,** n=60 | Food access motivation score | 1.89 | 0.78 | 0.41 |
|  | Years in operation | 1.09 | 0.04 | 0.01 |
| *Regression of Total Vendor Count on Business Motivation Score among North Carolina Farmers Market Managers* | | | | |
|  |  | β | SE | p |
| **Model 1,** n=64 | Business motivation score | 11.76 | 7.31 | 0.11 |
|  |  |  |  |  |
| **Model 2,** n=62 | Business motivation score | 12.79 | 6.89 | 0.07 |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.28 | 0.24 | 0.25 |
|  | Years managing the market | 0.28 | 0.95 | 0.77 |
|  | Pay status (Y/N) ¥ | 22.99 | 6.33 | 0.00\* |
| **Model 3,** n=54 | Business motivation score | 10.78 | 7.91 | 0.18 |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.15 | 0.29 | 0.62 |
|  | Years managing the market | 0.23 | 1.10 | 0.84 |
|  | Pay status (Y/N) ¥ | 23.33 | 7.61 | 0.00\* |
|  | *Market characteristics* |  |  |  |
|  | Volunteers | -0.01 | 0.09 | 0.89 |
|  | Years in operation | 0.44 | 0.39 | 0.26 |
| **Model 4,** n=65 | Business motivation score | 11.18 | 6.67 | 0.09 |
|  | Pay status (Y/N) ¥ | -23.01 | 6.13 | 0.00\*\* |
| *Regression of Average Number of Vendors per Week on Business Motivation Score among North Carolina Farmers Market Managers* | | | | |
|  |  | β | SE | p |
| **Model 1,** n=66 | Business motivation score | 6.92 | 4.30 | 0.11 |
|  |  |  |  |  |
| **Model 2,** n=64 | Business motivation score | 6.82 | 3.95 | 0.09 |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.06 | 0.14 | 0.65 |
|  | Years managing the market | 0.09 | 0.55 | 0.88 |
|  | Pay status (Y/N) ¥ | 15.01 | 3.63 | 0.00\*\* |
| **Model 3,** n=56 | Business motivation score | 4.02 | 4.33 | 0.36 |
|  | *Manager characteristics* |  |  |  |
|  | Age | -0.01 | 0.16 | 0.75 |
|  | Years managing the market | -0.03 | 0.60 | 0.96 |
|  | Pay status (Y/N) ¥ | -13.82 | 4.16 | 0.00\* |
|  | *Market characteristics* |  |  |  |
|  | Volunteers | 0.02 | 0.05 | 0.74 |
|  | Years in operation | 0.45 | 0.21 | 0.04 |
| **Model 4,** n=64 | Business motivation score | 5.82 | 3.82 | 0.13 |
|  | Pay status (Y/N) ¥ | 13.89 | 3.66 | 0.00\*\* |
|  | Years in operation | 0.35 | 0.18 | 0.06 |
| *Regression of Local Vendor Count on Business Motivation Score among North Carolina Farmers Market Managers* | | | | |
|  |  | β | SE | p |
| **Model 1,** n=64 | Business motivation score | 13.05 | 5.67 | 0.03\* |
|  |  |  |  |  |
| **Model 2,** n=62 | Business motivation score | 12.93 | 5.67 | 0.03\* |
|  | *Manager characteristics* |  |  |  |
|  | Age | 0.03 | 0.20 | 0.89 |
|  | Years managing the market | 0.49 | 0.78 | 0.52 |
|  | Pay status (Y/N) ¥ | 12.37 | 5.12 | 0.02\* |
| **Model 3,** n=54 | Business motivation score | 11.41 | 6.62 | 0.09 |
|  | *Manager characteristics* |  |  |  |
|  | Age | -0.79 | 0.25 | 0.75 |
|  | Years managing the market | 0.43 | 0.9 | 0.64 |
|  | Pay status (Y/N) ¥ | 11.64 | 6.22 | 0.67 |
|  | *Market characteristics* |  |  |  |
|  | Volunteers | 0.04 | 0.07 | 0.55 |
|  | Years in operation | 0.46 | 0.36 | 0.21 |
| **Model 4,** n=64 | Business motivation score | 12.55 | 5.45 | 0.03\* |
|  | Pay status (Y/N) ¥ | 12.42 | 4.95 | 0.02\* |
| \*p <.05, \*\*p<.01, ¥ referent category is “Y”, manager is paid to manage the market | | | | |

Discussion

This study recruited a small yet diverse sample of North Carolina’s farmers’ market managers. Only 26% of known farmers’ market managers in NC participated. Participants tended to be middle aged, with about 5 years of experience managing their market (Table 2).

Managers’ motivations to improve access to healthful foods in their communities was not associated with SNAP/EBT placement at their markets. This suggests that the relationship between being motivated by community food access issues and providing SNAP/EBT is not as straightforward as was hypothesized. There are a number of necessary steps between recognizing and being motivated to mitigate food access barriers in the community and actually implementing SNAP/EBT. Market finances, vendor pay, manpower, and the community context are just several of many factors that contribute to the introduction of SNAP/EBT to their markets (ASAP, 2013). Future studies should further explore the barriers to offering SNAP/EBT at markets among a larger sample of market managers. A better understanding of the number of managers who desire to offer SNAP/EBT at their markets and the reasons they do not currently offer SNAP/EBT would highlight key areas for intervention for initiatives aiming to increase SNAP/EBT availability. Improving awareness of the SNAP/EBT program and existing supports for managers could increase the number of managers with high community food access motivation who offer SNAP/EBT.

The relationships between business motivation and total and average weekly vendor count were not significant. However, having a high business motivation score was significantly associated with an increase of 13 more local vendors per season when we controlled for manager pay status (Table 3).This finding indicates that managers who are motivated to influence business through their market, specifically supporting local agriculture, may facilitate greater opportunities for local vendors through their market than managers with a low business motivation. It may also be that mangers with higher business motivation scores are also more likely to know and accurately report market vitality data like customer counts.

Managers who are not highly motivated by food access, but are motivated by business, could be motivated to offer federal nutrition benefit programs, like SNAP/EBT, if they are more knowledge about the economic benefits of program participation. Only a fraction of SNAP/EBT spending in the country goes to farmers’ market vendors, with farmers’ market sales representing 0.01% of all SNAP spending in 2010 (Dixit-Joshi, 2013). The potential customer base and sales potential for markets who expand their SNAP/EBT base is significant.

A key limitation of this study was the small sample size. Only 26% of potential farmers’ market managers participated in the study. This may be due to incomplete or outdated contact information in the FVOI and the university’s requirement of participants to provide their social security number to receive payment. Another limitation of the study was the poor reliability of certain indicators of SNAP/EBT participation and business vitality. Specifically, vendor and SNAP/EBT sales, and SNAP/EBT customer counts would have been important outcomes to examine for this study, but they tend to be unreliable as most market managers do not document them. Future work should attempt to introduce a standard method for collecting these important indicators of market reach and impact, as these metrics could be useful for longitudinal evaluations of farmers’ market based-strategies to improve community nutrition and local economic outcomes. For example, Darcy Freedman and colleagues are developing a mobile device application called “FM Tracks” so that various farmers’ market evaluation metrics can be entered directly into a mobile device (e.g., iPad, iPhone) and uploaded into a standardized database (Freedman, D.A. (2014). FM Tracks (Version 1) [Mobile application software].

Conclusion:

More work should be done to understand the interplay between market manager characteristics and the different environmental and organizational factors that influence market outcomes. As this study suggests, public health interventions should consider the market’s broader mission of creating business opportunities and leverage it to meet their goals. Addressing managers’ motivations will be critical to improving the food environment through farmers’ markets.

Farmers’ markets are uniquely positioned to meet the food access needs of their communities and provide a retail outlet for farmers where supermarkets do not exist. While the body of literature on the use of farmers’ markets for public health goals is growing, there is a gap in the understanding of how market managers’ could influence these goals. This study serves as a starting point for elucidating specific managerial characteristics that could converge with other important facilitators to maximize the potential of farmers’ markets to simultaneously improve healthy food access and business opportunity for farmers.

References:

Appalachian Sustainable Agriculture Project. Farmers Markets for All: Exploring Barriers and Opportunities for Increasing Fresh Food Access by Connecting Low-Income Communities with Farmers Markets. 2012. Available from: http://asapconnections.org/downloads/asap-farmers-markets-for-all-full-report.pdf Accessed September 30, 2013.

Briggs S, Coalition FM. Real food, real choice: Connecting SNAP recipients with farmers markets. Community Food Security Coalition; 2010.

Bullock, S., et al. Availability of Farmers’ Markets and Supplemental Nutrition Assistance Program/Electronic Benefit Transfer Systems and Associations with Rurality, Poverty, Race/Ethnicity, and Obesity among North Carolina Counties. *Journal of Hunger and Environmental Nutrition.* In Press.

CDC Community Transformation Grant. Available from: http://www.cdc.gov/communitytransformation/. Accessed September 30, 2013.

Cole, Kate, et al. "Peer Reviewed: Increasing Access to Farmers Markets for Beneficiaries of Nutrition Assistance: Evaluation of the Farmers Market Access Project." *Preventing chronic disease* 10 (2013).

Dixit-Joshi, S., Barnali, JB, Steketee, DM. Nutrition Assistance in Farmers Markets: Understanding Current Operations. United States Department of Agriculture. April 2013.

Evans AE, Jennings R, Smiley AW, Medina JL, Sharma SV, Rutledge R, et al. Introduction of farm stands in low-income communities increases fruit and vegetable among community residents. Health Place. 2012;18(5):1137-43

Freedman DA, Bell BA, Collins LV. The veggie project: A case study of a multi-component farmers’ market intervention. The journal of primary prevention. 2011;32(3-4):213-24.

Glanz, K., Hewitt, A., Rudd, J. Consumer behavior and nutrition education: An integrative review.

Grace C, Grace T, Becker N, Lyden J. Barriers to using urban farmers' markets: An investigation of food stamp clients' perceptions. Journal of Hunger & Environmental Nutrition. 2007;2(1):55-75.

Grimm K, Blanck H, Scanlon K, Moore L, Grummer-Strawn L, Foltz J. State-specific trends in fruit and vegetable consumption among adults—United states, 2000–2009. Morb Mortal Weekly Rep. 2010;59(35):1125-30.

Haynes-Maslow L, Parsons SE, Wheeler SB, Leone LA. A qualitative study of perceived barriers to fruit and vegetable consumption among low-income populations, North Carolina, 2011. Prev Chronic Dis. 2013;10:E34.

Heidemann C, Schulze MB, Franco OH, van Dam RM, Mantzoros CS, Hu FB. Dietary patterns and risk of mortality from cardiovascular disease, cancer, and all causes in a prospective cohort of women. Circulation. 2008;118(3):230-7.

Jilcott SB, Keyserling T, Crawford T, McGuirt JT, Ammerman AS. Examining associations among obesity and per capita farmers' markets, grocery stores/supermarkets, and supercenters in US counties. J Am Diet Assoc. 2011;111(4):567-72.

Jones, Paula, and Rajiv Bhatia. "Supporting equitable food systems through food assistance at farmers' markets." *American journal of public health* 101.5 (2011): 781-783.

Khan, LK et al. Recommended community strategies and measurements to prevent obesity in the United States. US Department of Health & Human Services, Centers for Disease Control and Prevention, 2009.

McCormack, LA, Laska, MN, Larson, NI, Story, M. Review of the nutritional implications of farmers' markets and community gardens: A call for evaluation and research efforts. J Am Diet Assoc. 2010;110(3):399-408.

McGuirt JT, Jilcott SB, Liu H, Ammerman AS (2011) Produce price savings for consumers at farmers' markets compared to supermarkets in North Carolina. J Hunger & Environ Nutr 6:

Ogden, Cynthia L., et al. "Prevalence of childhood and adult obesity in the United States, 2011-2012." *JAMA* 311.8 (2014): 806-814.

Project for Public Spaces, Columbia University. Farmers markets as a strategy to improve access to healthy food for low-income families and communities. Robert Wood Johnson Foundation; 2013. Report No.: Healthy Eating Research: Round 3.

Ragland E, Tropp D. USDA National Farmers Market Manager Survey, 2006. 2009

Stewart H. How low has the farm share of retail food prices really fallen? US Department of Agriculture, Economic Research Service; 2006.

Stephenson, GO, Lev, L, Brewer, LJ. Understanding the link between farmers’ market size and management organization. 2007.

Suarez--Balcazar Y, Martinez LI, Cox G, Jayraj A. African Americans’ views on access to healthy foods: What a farmers’ market provides. Journal of Extension. 2006;44(2):2FEA2.

United States Department of Agriculture. Agriculture Marketing Services. Available from www.ams.usda.gov/FARMERSMARKETS‎ Accessed September 23, 2013.

Ward, Brian W. "Prevalence of multiple chronic conditions among US adults: estimates from the National Health Interview Survey, 2010." *Preventing chronic disease* 10 (2013).