

# The Impact of Selected Socioeconomic Factors on Residents' Perceptions of Benefits of Community Gardens

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## Abstract

Participating in community gardens is believed to have several benefits; yet, there has been limited research on socioeconomic factors and their impact on community gardens. Therefore, this study assessed the impact of selected socioeconomic factors on residents' perceptions of benefits of community gardens. Using a questionnaire, data were obtained from a convenience sample of 217 participants from Macon County, Alabama, and analyzed using descriptive statistics and ordinal logit analysis. The results showed that a majority (at least 73%) agreed or strongly agreed with statements regarding nutritional benefits, health benefits, and community benefits of community gardens. In addition, several socioeconomic factors; age, education, and annual household income, had statistically significant effects on perceptions of benefits of participating in community gardens. Consequently, it was recommended that policies and programs that encourage participation in community gardens be put in place for residents in the study area, with cooperation among, county officials, University scientists, and community residents. This will lead to benefits of eating more fruits and vegetables, eating fresher foods, and possibly, in the long-term, reducing chronic diseases.

**Keywords:** Community gardens, Socioeconomic factors, Macon County, Rural communities

## 1. Introduction

According to Patel (1991), community gardening is an educational process for changing minds and actions of people so that they can help themselves attain economic and social well-being. However, Beck (2001, p. 455) defined community gardens as "an organized, grassroots initiative whereby a section of land is used to produce food or flowers or both in an urban environment for the personal use or collective benefits of its members." Moreover, many researchers have discussed several benefits of community gardening. These include health and wellness (Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007); improved security and safety in local communities (Schmelzkopf, 1995; Ferris, Norman, & Semik, 2001); opportunities for community development through education/job skills training (Fusco, 2001; Holland, 2004; Schmelzkopf, 2002); increased social capital, through the development of social ties and an increased appreciation of social diversity (Doyle & Krasny, 2003; Hancock, 2001); improved local ecology and sustainability which in turn leads to improved long-term health (Hancock, 2001; Schmelzkopf, 2002); alleviate financial pressure for residents of low-income communities by providing cheaper sources of food (Kurtz, 2001); creating income and employment for the community, and turning garbage-filled vacant lots into valuable lots (Schmelzkopf, 1995).

The gardens provide produce grown locally, and there is no need to ship long distances. Community residents can experience ecology dynamically linked to their environment, and the garden can help restore the connection to natural processes that have been obscured by mechanization (Nelson, 1996). The gardens can also create commercialization through street food vendors, town squares, and rural markets as well as generate income for poor families (Moron, 2006). These gardens often provide community people with self-reliant strategies for obtaining healthy and affordable food (Malakoff, 1995). In particular, Wakefield et al. (2007) pointed out several positive health benefits from gardening. These benefits ranged from improved access to food, and hence, better nutrition (Patel, 1991; Irvine, Johnson, & Peters, 1999); increased physical activity and relief from stress (Mark & Hester, 1990; Armstrong, 2000; Dickinson, et al., 2003).

Previous research by Wakefield et al. (2007) found that participating in community gardening led to increased access to food, improved nutrition, increased physical activity, and improved mental health. The participants in that study reported that they increased their exercise level working in the garden and ate more vegetables. They ate more vegetables because the produce was fresher and cheaper than the grocery stores, which provided identical produce. The participants also indicated that they raised produce organically, which they believed in the

long-run could improve their health. Low-income urban or rural communities, where vacant lots are common, poverty and malnutrition are pervasive, and grocery stores are limited, can particularly benefit from the presence of community gardens and the produce and other benefits that they offer.

Participating in community gardening can help deal with the overweight and obesity issue. Many risk factors cause overweight or obesity. Improper nutrition and lack of physical activity are two of the main factors that cause overweight or obesity. In fact, many organizations like the American Heart Association, U.S. Department of Health and Human Services, Action for Healthy Kids, and CDC, are concerned about this lack of physical activity. Indeed, there are health conditions that are caused or related to obesity such as heart disease, stroke, diabetes, certain types of cancer (e.g., breast, esophagus, and gastric), hypertension, and impaired respiratory function (U.S. Department of Health and Human Services & The Advertising Council, 2005). A study on state trends regarding the consumption of fruits and vegetables among adults reported for instance, that in 2009, only 25% of adults in Alabama consumed fruit two or more times per day compared to 33% of adults in the U.S., and only 26% of adults in Alabama consumed vegetables three or more times per day compared to 27% of adults in the U.S. (CDC, 2010).

The Alabama Black Belt, a region of 17 counties (Center for Economic and Business Research, 2014), has an obesity average of about 40%, which is higher than the average for the state (CDC, 2009). According to Philips (2004), a majority of residents in the Black Belt are at the greatest risk of chronic disease such as diabetes, hypertension, coronary heart disease, and obesity. In addition, in many parts of this region, there are very few major grocery store chains, and scattered with several small grocery or convenient stores. Besides, many residents do not have vehicles to travel to centers of the major grocery store chains. It will be helpful, therefore, to investigate the issue of community gardening relative to these communities as a whole or parts thereof regarding perceived benefits.

A study such as this will add to the literature on community gardens, especially in rural areas. The purpose of the study, therefore, was to assess the impact of selected socioeconomic factors on residents' perceptions of benefits of community gardens. Specific objectives were to (1) identify and describe socioeconomic factors, (2) describe and assess general characteristics of community gardens, (3) develop a model for community gardens, and (4) estimate the extent to which socioeconomic factors influence perceptions of benefits of community gardens.

## 2. Literature Review

Previous studies have shown that socioeconomic factors may be important determinants in participating in community gardens. For instance, Meenar & Hoover (2011) assessed issues of community food insecurity and hunger, and the impact of community gardens on Philadelphia neighborhoods. They found co-occurrence of poverty, hunger, land vacancy, absence of supermarkets and grocery stores, and informal means of fresh food access, mostly in lower-income sections of the city. Specifically, distribution of produce was by informal means (harvested and distributed by participants), sales (farmers markets and community supported agriculture), and donations (to food cupboards). Community gardens were most common in areas experiencing the greatest level of food insecurity, where food access was scarce; and areas where high vacancy and low-income households were common. Also, school children and young adults were more likely to participate in community gardens than to be recipients of produce from gardens; whereas, lower income households, household on government assistance, and seniors were more likely to be the recipients of produce, but not participate in community gardens.

Patel (1991) examined the effects of participating in community gardening on respondents. About 44% of the participants indicated they ate fresh vegetables; 35% indicated they improved their diets; 33% indicated they saved money; and 31% indicated their participation allowed them to socialize with others. He concluded that participating in the community gardens has the potential for improving the diets and health of the participants. Also, Blaine, Grewal, Dawes, & Snider (2010) evaluated community gardeners. They found that regardless of age or income, participants spent more time per week in the garden as their tenure with the community garden increased. The participants also changed their diets by eating more fruits and vegetables. In addition to changing their diets, one-third donated their produce to charity and spent about 40% more time working in the garden than other gardeners did.

Additionally, Alaimo, Packnett, Miles, & Kruger (2008) analyzed the association between household participation in a community garden and fruit and vegetable consumption among urban adults. They found that adults who lived in households with a member participating in community gardening, consumed fruits and vegetables 1.4 times per day than those who did not have a household member participating in a community garden. Those participating in community gardens were also 3.5 times more likely to consume fruits and vegetables at least 5 times per day than those who did not. The researchers concluded that household

participation in community gardens may improve fruit and vegetable intake among urban adults.

Moreover, Phelps, Herman Parker, & Derney (2010) examined the advantage of gardening as a form of physical activity in an after-school program for third to fifth graders. It was found that there were significant differences between pre- and post-test scores of children's self-reported physical activity level. In other words, there was a greater proportion of children engaged in physical activities at the post-test period compared to the pre-test period. The results of the study indicate that gardening is an effective non-competitive way to increase children's self-reported physical activity level in an after-school setting.

Also, Nanney, Johnson, Elliott, & Haire-Joshu (2007) evaluated the association of eating homegrown produce and higher intake among parents and their preschool children. The subjects were enrolled in an adult-child education program. They reported that there were significant differences in the overall fruit and vegetable diets and nutrient quality between before and after enrolling in the program. Frequency of eating home grown fruits and vegetables promoted a positive home environment and healthy lifestyles. Nanney et al. concluded that educational programs promoting awareness of programs may be worth investing time in.

Furthermore, Twiss et al. (2003) assessed aspects of community gardens in cities of California. The results showed that communities with gardens provided nutrition and physical activities; participants self-reported that they increased the number of physical activity as well as increased consumption of fruits and vegetables per day. Also, students who participated in gardening at school started gardens at home. Participation in community gardens caused the cities to establish policies for land and water use; improved access to produce; elevated public consciousness about public health; and created culturally appropriate education and training materials and strengthened community building skills.

Litt et al. (2011) examined involvement in community gardens and fruit and vegetable consumption. They reported that neighborhood aesthetics, social involvement and community garden participation were significantly associated with fruit and vegetable intake. Community gardeners consumed fruits and vegetables 5.7 times per day compared with home gardeners (4.6 times per day), and non-gardeners (3.9 times per day). Moreover, 56% of community gardeners met national recommendations to consume fruits and vegetables at least 5 times per day compared with 37% of home gardeners, and 25% of non-gardeners. Similarly, Armstrong (2000) assessed health promotion and community development aspects of community gardens. He reported that the most commonly expressed reasons for participating in community gardens were access to fresh foods, to enjoy nature, and health benefits. The results also revealed that participation in community gardening in low-income neighborhoods were four times more likely to lead to addressing other issues in the neighborhood compared to participation in community gardening in non-low-income neighborhoods.

Also, Carney et al. (2012) analyzed the impact of a community gardening on vegetable intake, food security, and family relationships. After establishing the community garden, the frequency of adult vegetable intake of "several times a day" increased from 18 to 85% and frequency of children's vegetable intake increased from 24 to 64%. Also, the sum of the frequencies of "Sometimes" and "Frequently" worrying in the past month that food would run out before money was available: dropped from 31% to 3%. They concluded that a community garden program could be a way to reduce food insecurity, improve dietary intake, and strengthen family relationships.

Relatedly, Zick, Kowaleski-Jones, Uno, & Merrill (2012) examined the association of participation in community gardening with healthy body weight, in body mass index (BMI). They found that both male and female community gardeners had significantly lower BMIs than their counterparts who were not participating in the community gardening program. The results also showed that community gardeners had lower odds of being overweight or obese than did their counterparts. They concluded that the health benefits of community gardening could go beyond enhancing the gardeners' intake of fruits and vegetables.

### **3. Methodology**

#### *3.1 Data Collection*

A questionnaire was developed, and used to collect the data for the study. It had three sections: general; specific: health and nutrition; and demographic information. The questionnaire was submitted to the Human Subjects Committee of the Institution for approval before being administered. The questionnaire was administered to a convenience sample of Macon County, Alabama, residents. Macon County was chosen because it is a Black Belt county, and as stated previously, most of the Black Belt has abysmal economic and health statistics. In fact, according to the CDC (2009), the Black Belt had an average obesity of about 40%, and Macon County's average obesity is also about 40%. As indicated earlier, Philips (2004) also indicated that residents of the Black Belt are at the greatest risk of chronic diseases such as diabetes, hypertension, coronary heart disease, and obesity. Additionally, because of time and other resource constraints, Macon County was chosen for the study.

Convenience sampling technique was used because of the lack of a sampling frame. However, convenience

sampling has a limitation; and that is, it can under-represent or over-represent particular groups. This notwithstanding, it is still used in research because of its ability to yield quick and useful information that would not be possible using other techniques. Convenience sampling was used in this study, because of the lack of a known sampling frame from which participants could be selected. The data were collected using self-administered questionnaire techniques at grocery store sites and the farmers market in Tuskegee, the county seat for Macon County, in the summer of 2013. The total sample used for the study was 217; and all of the 217 questionnaires were useable and considered adequate for the study.

### 3.1 Data Analysis

The data were analyzed by using descriptive statistics and ordinal logit regression analysis. The regression model used, a modified version of the one used by Banterle & Cavaliere (2009), is stated as follows:

$$C_j(X_i) = \ln[P(Y > j | X_i) / P(Y \leq j | X_i)] = \beta_1 X_{i1} + \dots + \beta_n X_{in} - \tau_j + 1 \quad (1)$$

Where:

$C_j(X_i)$  = cumulative odds of being at or below category  $j$  of an ordinal variable with  $k$  categories,  $1 \leq j \leq k-1$

$i$  = number of participants considered

$j$  = score for a category

$Y$  = response variable

$n$  = number of independent variables

$X_i$  = independent variables

$\beta_i$  = coefficients

$\tau$  = cut points between categories

The empirical model is stated as:

$$\ln(PPFV > j / PPFV \leq j) = \beta_1 GEN + \beta_2 AGE + \beta_3 EDU + \beta_4 HHI - \tau + 1 \quad (2)$$

Where:

$\ln(PPFV > j / PPFV \leq j)$  = cumulative odds of being at or below a category within the statement: "participating in a community garden makes one eat more fruits and vegetables." A value of 5 was assigned if a respondent indicated "strongly agree;" 4 was assigned if a respondent indicated "agree;" 3 was assigned if a respondent indicated "disagree;" 2 was assigned if a respondent indicated "strongly disagree;" and 1 was assigned if a respondent indicated "don't know"

GEN = 1 if respondent was male, and 0 if respondent was female

AGE = 1 if respondent was under 18 years, 2 if respondent was 18-24 years, 3 if respondent was 25-34 years, 4 if respondent was 35-44 years, 5 if respondent was 45-54 years, 6 if respondent was 55-64 years, and 7 if respondent was 65 years or older

EDU = 1 if respondent had less than high school education, 2 if respondent had high school diploma or equivalent, 3 if respondent had technical/vocational degree, 4 if respondent had some college education but with no degree, 5 if respondent had an associate's degree, and 6 if respondent had a bachelor's degree

HHI = 1 if respondent indicated he/she earned \$10,000 or less; 2 if respondent indicated he/she earned \$10,001-20,000; 3 if respondent indicated he/she earned \$20,001-30,000; 4 if respondent indicated he/she earned \$30,001-40,000; 5 if respondent indicated he/she earned \$40,001-50,000; 6 if respondent indicated he/she earned \$50,001-60,000, and 7 if respondent indicated he/she earned more than \$60,000

In brief, the estimated model hypothesizes that the cumulative odds of being at or below a category within the statement that participating in a community garden makes one eat more fruits and vegetables, is influenced by gender (GEN), age (AGE), education (EDU), and annual household income (HHI). It was assumed that the expected signs of the independent variables were not known a priori. Identical models were set up for the statements:

"Participating in community gardens makes one eat fresher food"

"Participating in community gardens makes one more physically active"

"Participating in community gardens makes one alter one's diet"

"Participating in community gardens makes one's health improve"

The ordinal logistic regression analysis was run for the various models. The criteria used to assess the models were the model chi-squares, beta coefficients, and  $p$  values.

## 4. Results and Discussion

Table 1 describes the socioeconomic characteristics of the respondents. About 51% of the respondents were males and 48% were females. Regarding age, 44% were in the age range of 18-34 years; 36% were in the range

of 35-54 years, and 14% were in the range of 55-64 years. Considering education, about 31% had at most a technical/vocational degree and 64% had some college education or a college degree. Approximately 43% earned \$30,000 or less, and 39% earned over \$30,000 but not exceeding \$60,000. The socioeconomic characteristics reflected about equal proportions of males and females, with a higher proportion of younger and middle-aged adults, with a relatively higher educational level, and with a relatively lower middle annual household income level.

Table 2 presents the responses regarding nutritional issues. About 96% agreed or strongly agreed that participating in a community garden makes one eat more fruits and vegetables. Eighteen percent disagreed that participating in a community garden makes one eat more organic food; however, 80% agreed or strongly agreed that participating in a community garden makes one eat more organic food. Also, 98% agreed or strongly agreed that participating in a community garden makes one eat fresher food. Approximately 12% disagreed that participating in a community garden makes one eat less fast food; contrarily, 83% agreed or strongly agreed that participating in a community garden makes one eat less fast food. Exactly 83% agreed or strongly agreed that participating in a community garden makes one eat more traditional food, i.e., food relative to one's culture/family background; nearly 81% agreed or strongly agreed that participating in a community garden makes one eat new kinds of food. Almost 96% agreed or strongly agreed that participating in a community garden makes one feel better about the origin of food. Exactly 89% agreed or strongly agreed that participating in a community garden makes one alter one's diet choices. These findings are generally in agreement with Patel (1991), Armstrong (2000), Blaine et al. (2001), Twiss et al. (2003), Nanney et al. (2007), Alaimo et al. (2008), and Litt et al. (2011) who all found higher consumption of fruits and vegetables associated with participation in community gardens, in addition to other nutritional benefits.

Table 3 shows the responses regarding health issues. About 83% agreed or strongly agreed that participating in a community garden makes one physically active. Almost 97% agreed or strongly agreed that participating in a community garden makes one's health improve. The findings are similar to those reported by Armstrong (2000), Twiss et al. (2003), Nanney et al. (2007), Phelps et al. (2010), and Zick et al. (2012) who found association of physical activity and/or improved health with participation in community gardens.

Table 4 describes the responses regarding community issues. Nearly 95% agreed or strongly agreed that participating in a community garden makes one spend less money on food. About 13% disagreed that participating in a community garden makes one learn about running a small business; however, 73% agreed or strongly agreed that participating in a community garden makes one learn about running a small business. Approximately 95% agreed or strongly agreed that participating in a community garden makes one feel more involved in one's neighborhood. Also, 96% agreed or strongly agreed that participating in a community garden makes one teach one's family and friends how to garden, and almost 89% agreed or strongly agreed that participating in a community garden makes one donate extra food to other people. The results are in concert with Patel (1991), Armstrong (2000), Blaine et al. (2001), and Twiss et al. (2003), who reported some community benefits to participating in community gardens. Some of these benefits included saving money, socializing, enjoying nature, donating food, and developing community building skills.

Table 5 shows estimates for the various models. Regarding the eating more fruits and vegetables model, it reflects overall significance of the model ( $p = 0.017$ ), i.e., at least one or all of the socioeconomic variables jointly explain the dependent variable (participating in community gardens makes one eat more fruits and vegetables, PFV). The perception that participating in a community garden allows one to eat more fruits and vegetables is significantly affected by age, education, and annual household income, respectively,  $p = 0.001$ ;  $p = 0.091$ ; and  $p = 0.011$ . The coefficient for age, for example, implies that for one unit increase in age, the expected ordered log odds decreases by 0.38 as one moves to the next higher category of participating in a community garden makes one eat more fruits and vegetables. Similarly, the coefficient for education implies that for one unit increase in education, the expected log odds decreases by 0.21 as one moves to the next higher category of participating in community gardens makes one eat more fruits and vegetables. For annual household income, one unit increase in income causes the expected log odds to increase by 0.27 as one moves to the next higher category of participating in a community garden makes one eat more fruits and vegetables. Identical explanations apply to the other models. In sum, age, education, and annual household income contribute immensely to the perception that participating in a community garden makes one eat more fruits and vegetables. The higher the age or educational level, the less likely the perception that, participating in a community garden makes one eat more fruits and vegetables. On the contrary, the higher the annual household income, the more likely the perception that, participating in a community garden makes one eat more fruits and vegetables. Gender was statistically insignificant.

Regarding the eating fresher food model, it shows overall significance of the model ( $p = 0.054$ ), i.e., at least one

or all of the socioeconomic variables jointly explain the dependent variable (participating in community gardens makes one eat fresher food, PFF). The perception that participating in a community garden allows one to eat fresher food is significantly affected by education,  $p = 0.041$ . The higher the education, the more likely the perception that, participating in a community garden makes one eats fresher food. Gender, age, and annual household income were statistically insignificant.

Also, considering the physically active model, it reflects overall significance of the model ( $p = 0.007$ ), i.e., at least one or all of the socioeconomic variables jointly explain the dependent variable (participating in community gardens makes one physically active, PPA). The perception that participating in a community garden allows one to be more physically active is significantly affected by annual household income,  $p = 0.043$ . The higher the annual household income, the more likely the perception that, participating in a community garden makes one to be more physically active. Gender, age, and education were statistically insignificant.

Considering the altering diet choices model, it shows overall significance of the model ( $p = 0.004$ ), i.e., at least one or all of the socioeconomic variables jointly explain the dependent variable (participating in community gardens makes one alter one's diet choices, PDC). The coefficient of age was statistically significant,  $p = 0.010$ . The higher the age, the more likely the perception that, participating in a community garden makes one alter one's diet choices. The coefficients of gender, education, and annual household income were statistically insignificant.

Based on the results of the improve health model, it shows overall insignificance of the model ( $p = 0.444$ ), i.e., all of the socioeconomic variables jointly did not explain the dependent variable (participating in community gardens improves one's health, PIH). All the coefficients were statistically insignificant. This means gender, age, education, and annual household income do not immensely contribute to the perception that, participating in a community garden makes one's health improve. This is surprising, yet, it is possible that respondents did not directly equate participating in a community garden to leading to improvement in health. They most likely saw a direct tie to nutrition and being physically active. This notwithstanding, there was a positive relationship between all the socioeconomic factors and the notion that participating in a community garden makes one's health improve.

## 5. Conclusion

The study assessed the impact of selected socioeconomic factors on residents' perceptions of benefits of community gardens. Specifically, it identified and described socioeconomic factors, described and assessed general characteristics of community gardens, developed a model for community gardens, and estimated the extent to which socioeconomic factors influenced benefits of community gardens. The results revealed about equal proportions of males and females, with a higher proportion of younger and middle-aged adults, with a relatively higher educational level, and with a sizeable proportion of lower middle annual income households. Not surprisingly, at least 80% of respondents agreed or strongly agreed with statements regarding nutritional benefits of participating in a community garden; at least 83% agreed or strongly agreed with statements regarding health benefits of participating in a community garden, and at least, 73% of respondents agreed or strongly agreed with statements concerning community benefits of participating in a community garden. The ordered logit analyses showed that socioeconomic factors do influence perceptions of benefits of participating in a community garden: specifically, age, education, and annual household income for the eating fruits and vegetables model; education for the eating fresher food model; annual household income for the more physically active model; and age for the altering diet model.

From the foregoing, it is clear that there is interest in community gardening and awareness of the benefits, such as nutrition, health, and community benefits. There is a need, therefore, to influence policy makers in the local community to support the establishment of community gardens. There is also a need for a partnership between the University located in the county and community to undertake this endeavor; that is, the establishment of community gardens and continuing education/training programs in the community. The obvious benefits of this partnership and the presence of several community gardens in the community will be: availability of fresh produce, change or improvement in diet choices, increase in physical activity, less money spent on food, sale of excess produce at the local farmers market, and the improvement of community relations. The long-term benefit is the possible reduction of the incidence of chronic diseases. Moreover, the youth especially, can be targeted to establish gardens and consume more fresh produce. This may decrease their propensity toward fast food.

This study has contributed an insight into how socioeconomic factors affect perceptions of the benefits of participating in community gardens, especially in a rural county. Its major contribution is the indication that age, education, and annual household income influence or affect perceptions of benefits of participating in community gardens. Future studies may include replicating the study, adding more socioeconomic factors, using

a larger sample size, and/or covering a wider area. Replicating the study could confirm the results. Adding more socioeconomic factors will further provide insights on factors that impinge on participating in community gardens. Finally, increasing the sample size and/or covering a wider area will further substantiate the results.

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**Table 1. Responses Regarding Selected Socioeconomic Characteristics of Respondents**

Variable	Frequency	Percent
<b>Gender</b>		
Male	110	50.7
Female	104	47.9
No Response	3	1.4
<b>Age</b>		
Under 18 years	2	0.9
18-24 years	51	23.5
25-34 years	45	20.7
35-44 years	29	13.4
45-54 years	48	22.1
55-64 years	31	14.3
65 years or older	8	3.7
No Response	3	1.4
<b>Educational Level</b>		
Less than 12 years	7	3.2
High School Graduate/GED	26	12.0
Technical/Vocational Degree	34	15.7
Some College	60	27.6
Associate's degree	64	29.5
Bachelor's Degree	14	6.5
No Response	12	5.5
<b>Annual Household Income</b>		
\$10,000 or less	50	23.0
\$10,001-20,000	16	7.4
\$20,001-30,000	28	12.9
\$30,001-40,000	54	24.9
\$40,001-50,000	21	9.7
\$50,001-60,000	9	4.1
Over 60,000	13	6.0
No Response	26	12.0



**Table 2. Responses Regarding Nutritional Issues**

Variable	Frequency	Percent
<b>Eat More Fruits and Vegetables</b>		
Don't know	6	2.8
Strongly Disagree	0	0.0
Disagree	3	1.4
Agree	123	56.7
Strongly Agree	85	39.2
<b>Eat More Organic Food</b>		
Don't know	4	1.8
Strongly Disagree	0	0.0
Disagree	39	18.0
Agree	117	53.9
Strongly Agree	57	26.3
<b>Eat Fresher Food</b>		
Don't know	0	26.0
Strongly Disagree	0	74.0
Disagree	4	3.4
Agree	119	42.6
Strongly Agree	1	34.3
No Response	1	0.5
<b>Eat Less Fast Food</b>		
Don't know	8	3.7
Strongly Disagree	2	0.9
Disagree	27	12.4
Agree	111	51.2
Strongly Agree	68	31.3
No Response	1	0.5
<b>Eat More Traditional Food</b>		
Don't know	18	8.3
Strongly Disagree	5	2.3
Disagree	13	6.0
Agree	105	48.4
Strongly Agree	75	34.6
No Response	1	0.5
<b>Eat New Kinds of Food</b>		
Don't know	19	8.8
Strongly Disagree	1	0.5
Disagree	21	9.7
Agree	128	59.0
Strongly Agree	47	21.7
No response	1	0.5
<b>Feel Better about Origin of Food</b>		
Don't know	0	0.0
Strongly Disagree	0	0.0
Disagree	7	3.2
Agree	109	50.6
Strongly Agree	99	45.6
No Response	2	0.6
<b>Alter One's Diet Choices</b>		
Don't know	9	4.1
Strongly Disagree	0	0.0
Disagree	13	6.0
Agree	111	51.2
Strongly Agree	82	37.8
No Response	2	0.9

**Table 3. Responses Regarding Health Issues**

Variable	Frequency	Percent
<b>More Physically Active</b>		
Don't know	9	4.1
Strongly Disagree	3	1.3
Disagree	21	9.7
Agree	105	48.4
Strongly Agree	76	35.0
No Response	3	1.4
<b>Improved Health</b>		
Don't know	9	4.1
Strongly Disagree	0	0.0
Disagree	13	6.0
Agree	111	51.2
Strongly Agree	82	37.8
No Response	2	0.9

**Table 4. Responses Regarding Community Issues**

Variable	Frequency	Percent
<b>Spend Less Money on Food</b>		
Don't know	1	0.5
Strongly Disagree	1	0.5
Disagree	8	3.7
Agree	108	49.8
Strongly Agree	97	44.7
No Response	2	0.9
<b>Learning about Small Business</b>		
Don't know	29	13.4
Strongly Disagree	0	0.0
Disagree	28	12.9
Agree	109	50.2
Strongly Agree	49	22.6
No Response	2	0.9
<b>Involvement in Neighborhood</b>		
Don't know	5	2.3
Strongly Disagree	0	0.0
Disagree	3	1.4
Agree	127	58.5
Strongly Agree	80	36.9
No Response	2	0.9
<b>Teach Family/Friends</b>		
Don't know	1	0.5
Strongly Disagree	0	0.0
Disagree	4	1.8
Agree	130	59.9
Strongly Agree	79	36.4
No Response	3	1.4
<b>Donation of Food</b>		
Don't know	11	5.1
Strongly Disagree	3	1.4
Disagree	9	4.1
Agree	120	55.3
Strongly Agree	72	33.2
No Response	2	0.9

**Table 5. Estimates for Various Models on Participating in Community Gardens**

Variable	PFV		PFF		PPA		PDC		PIH	
	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>
GEN	0.171	0.565	-0.418	0.164	-0.452	0.110	0.123	0.669	0.103	0.729
AGE	-	0.001	0.167	0.147	0.047	0.659	0.282***	0.010	0.041	0.719
EDU	0.379***	0.091	0.252**	0.041	0.006	0.961	-0.028	0.810	0.131	0.278
HHI	-0.205*	0.011	-0.031	0.766	0.196**	0.043	0.111	0.258	0.084	0.403
	0.266***									
Chi-square	12.035** ( <i>P</i> = 0.017)		9.298** ( <i>P</i> = 0.054)		14.063*** ( <i>P</i> = 0.007)		15.377*** <i>P</i> = 0.004)		3.726 ( <i>P</i> = 0.444)	
Nagelkerke R <sup>2</sup>	0.070		0.057		0.074		0.083		0.023	

\*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%

**Note:**

PFV = Participating in a community garden makes one eat more fruits and vegetables

PFF = Participating in a community garden makes one eat fresher food

PPA = Participating in a community garden makes one more physically active

PDC = Participating in a community garden makes one alter one's diet choices

PIH = Participating in a community garden makes one's health improve

GEN = Gender

AGE = Age

EDU = Education

HHI = Annual Household Income

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