# Urban Garden, Where Art Thou? A Study of Urban Agriculture in the Dallas Metropolitan Area.

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## Executive Summary[1]

Food security, the constant access to a variety of food at all times by everyone (USDA), is something not all Americans have the pleasure of experiencing. Beaulac et al. (2007) found evidence of disparities in food access by income and race. A neighborhood lacking access to food is what researchers in Scotland defined as food deserts in the 1990's (Cummins and McIntyre 2002). Food deserts exist all across America leaving citizens with the hardship of deciding to travel for healthy food options or settle for the poor grocery option in their neighborhood. Millions of Americans are faced with this battle, because their neighborhood lacks a supermarket.

Predominately Black neighborhoods include 52 percent less supermarkets than White neighborhoods (Powell 2007), and higher income areas have 30 percent more supermarkets than those with the lowest income (Weinberg 1995). Researchers conducted studies to better understand the impact of a lack of supermarkets that provide healthy food options to residents in these neighborhoods. Because people primarily choose their food based upon the food outlets in their neighborhoods (Furey, et al. 2001), it is important to find a solution to the food desert issue.

Various solutions to food insecurity have been tested, both in America and other countries. One solution presented was urban gardens (Ente and Achike 2008). Urban gardens, a form of urban agriculture, offer its surrounding community the access to fresh fruits and vegetables in place of supermarkets. In this paper, I attempt to determine what characteristics of a neighborhood influence the development of an urban garden as a solution to the problem of food deserts in the Dallas-Fort Worth, Texas area. I find that an area being classified as a food desert is positively correlated with the development of urban gardens.

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## Introduction

In 2015, roughly 31.6 million American households were located in areas with moderate to very low food security (US Department of Agriculture 2016). Food security refers to the ability to access healthy, affordable food and to choose where healthy foods will be purchased. The US Department of Agriculture (2016) more specifically defines food security as "access by all people at all times to enough food for an active healthy life." Furthermore, neighborhoods with food insecurity are also considered food deserts. Citizens in these areas are constrained to purchasing lower quality food at a higher cost given the need to travel farther distances to obtain healthier food for lower prices (Alwitt and Donley 1997). Food insecurity occurs in both rural and urban cities though this study will focus on an urban environment.

Urban food insecurity is not limited to one specific region. It affects multiple areas and in different ways. Research has looked at major cities across the country, yet few have looked at areas in Texas. Texas has the second largest population in the United States with 27.8 million citizens. As of 2016, the Dallas metropolitan area was the fourth largest in the country with 24 percent of citizens living in poverty (US Census). The Texas state government implemented an urban agriculture policy in 2011 in an effort to promote healthy food options in urban areas with the hope of increasing food security in urban parts of the state with higher food insecurity. The 2011 policy established an urban farm microenterprise support program which supplies loans that expand, renovate, improve, or establish new urban farm microenterprise programs (HB 2994). The state legislature defined a microenterprise is "a small business in which the owner operates the enterprise" (HB 2994). Some cities throughout Texas had created urban/community gardens prior to this piece of legislation. It is important to understand the impact of the policy on the development of urban garden microenterprises.

For this study, I seek to answer the question of what factors influence whether a neighborhood develops an urban garden. Are the gardens located in areas defined as having food insecurity? First, we will look at the impact of food insecurity and what demographics might lead to a region being defined as a food desert.

## Food Insecurity and Its Impact

Research has classified food deserts in a few different ways. The first states that a food desert is an area with a lack of acceptable retail outlets whose citizens have low socioeconomic status and poor health and nutrition (Guy and David 2004). In the United Kingdom, lawmakers define these areas of relative exclusion in which residents incur "physical and economic barriers to accessing healthy food" (Reisig and Hobbiss 2000). This definition includes the additional layer of barriers to access rather than focusing solely on the presence of quality food retailers. Some researchers have summed these definitions into four key requirements for classifying an area a food desert: accessibility, affordability, nutritional adequacy, and quality (Short, et al. 2007). However, for this research design, I utilize the definition provided by a 2008 U.S. Farm Bill. It classifies a food desert as "an area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominately lower income neighborhoods and communities" (Title VI, Sec 7527).

Urban food insecurity has led to various health disparities between very food insecure regions and food secure regions. For instance, disadvantaged areas performed poorer in terms of availability and quality of healthy foods (Beaulac, et al. 2009). By living in a food secure area, an individual has more access to healthy, quality food. Furthermore, in a study of students from 3$^{rd}$ to 8$^{th}$ grade, Shier et al. (2012) found that children who lived in a neighborhood with multiple

types of food outlets, e.g. large grocery stores, fast food restaurants, etc., had a higher Body Mass Index (BMI) than students who lived where there was only one option. In 2009, Zick studied the Salt Lake County, Utah region and concluded that low-income neighborhoods, who had at least one healthy grocery option, saw a reduction in BMI/obesity risk compared to those with zero options. Health disparities are associated with a lack of healthy food options across neighborhoods.

Communities across the world have taken various approaches to solving the problem of a food desert. In Sub-Saharan Africa, they turned to urban agriculture as a means to accessing healthy foods (Ente and Achike 2008). The US Department of Agriculture (USDA) notes that "city and suburban agriculture takes the form of backyard, roof-top, and balcony gardening, community gardening in vacant lots and parks, roadside urban fringe agriculture and livestock grazing in open space." This new notion of growing fresh produce in urban communities has popped up across a wide variety of regions including third-world, developing, and developed countries.

One example of this was in the southeast Nigerian city of Ohafia which includes urban and rural communities. Ente and Achike (2008) studied the difference between outputs in rural versus urban farms and found that outputs were significantly lower in urban communities than in rural areas. This suggests that urban farming in Ohafia communities did not produce the same amount of goods as a rural farm. The researchers noted that most of the farmers in the rural area were also farmers in the urban communities where they desired to expand their income by developing a farm in urban cities. There was still an effect of urban agriculture in the region on improving the food security.

Racial and ethnic minority neighborhoods experience a higher rate of morbidity, mortality, and adverse health outcomes (Cubbin 2001 and Deaton 2003). As urban cities in America move toward finding ways to gain access to healthy foods in neighborhoods where a national grocery store chain or regional chain are absent, research has tried to estimate the effectiveness of those new outlets. For instance, in a study of the San Francisco Bay area, Short et al (2007) found "that small, full-service markets, well-dispersed in several low-income neighborhoods, can and do provide" culturally acceptable food for a low price. This was in a predominately Latino neighborhood. They used the criteria for community food security to measure this and used the standard market basket analysis which lists food for various demographics in order to maintain a healthy lifestyle. This research showed that food deserts can be reduced by providing culturally acceptable foods in a smaller grocer rather than requiring a large national grocery store chain.

A mixed methods research design was conducted in Pittsburgh. There, researchers sought to determine factors which influenced how residents with poor supermarket access and those with high supermarket access purchased their food (Walker, et al. 2011). Residents of a food desert and those from a food oasis, a low-income neighborhood with large grocery store chain readily accessible, were chosen to generate statements of factors influencing how they buy their food. They came up with 3 broad topics: neighborhood issues, areas for improvement, and high risk. One of the topic issues for the neighborhood was the economy which led to "poor neighborhoods and store closings." The largest area for improvement was the source of income for residents indicating that without money they are not able to purchase food. Lastly, the participants' lifestyle was deemed high risk. These factors indicate that individuals consider a number of things when deciding what food to purchase. Specifically, residents of the Pittsburgh

area take into account the economy, their income, and their lifestyle when purchasing food. As research continues to develop regarding food deserts and their solutions, what they did in Pittsburgh can be useful. Understanding restrictions on residents of a food desert, demographics, and food buying factors are all important as this area of research is explored.

Solutions for reducing food deserts have been around resources that already exist, such as national grocery stores; however, in the case of sub-Saharan Africa, new outlets are capable of solving the low food security in urban regions. Detroit, Michigan is an urban area with one of the largest food deserts with 82.7 percent of their population being Black/African-American and roughly 40 percent of the total population being in poverty (United States Census Bureau). Detroit also has a growing urban agriculture sector through community gardens. The research on the effectiveness of this new idea of access to fresh fruits and vegetables is understudied.

Urban agriculture has become a local resource for providing fresh produce and livestock to community residents. It is still something that is under-researched. However, as a means to reducing food deserts, urban agriculture could become a viable resource. While looking at census tracts and defined food desert regions, it is beneficial to delve into new resources that can benefit the residents by providing them access to healthy food. Since the research is not out there on the impact of urban gardens in this setting, it is necessary to understand how these developments impact the communities.

## Research Design

*Problem:*

Around our country, families are faced with a choice between traveling to the large grocery store for healthier food options or picking something with a low nutritional value from a

local convenience store. Neighborhoods are not equal, which has led to grocery stores closing, leaving behind poor families to figure out a solution to their health problems. This lack of access to grocery stores with healthy food has led to food deserts in the Dallas-Fort Worth (DFW), Texas metropolitan area. Past research dove into the food insecurity problems of other metropolitan areas, like Pittsburg (Walker, et al. 2011) and Detroit (Draus, et al. 2014); however, none have conducted research in the Texas region.

*Research Question*

The research question I want to answer is; what are the factors that predict whether an area develops an urban garden in areas that need them? I hypothesize that the presence of a food desert increases the probability of there being an urban garden in a zip code.

*Unit of Analysis*

My unit of analysis will be neighborhoods of the Dallas-Forth Worth metropolitan area, as identified by individual zip codes. There are 272 zip codes in the Dallas metropolitan area. I am looking at both regions defined as food deserts and non-food deserts. Some zip codes had no Census data available, as zip codes are constantly changing, so they have been eliminated. I chose the years 2000 and 2010 due to the decennial Census occurring in those years. The Census only had representative data for 2000, 2010, and 2015 which are the three years I use in this research.

*Data Source*

Demographic data for each zip code is drawn from the 2000 and 2010 United States Census and estimated data from the US Census Bureau American Community Survey for 2015. The Texas Department of Agriculture maintains a current list of gardens in the Dallas metro area with addresses. However, for some of the gardens, I conducted a simple web search to pinpoint

the date they were established, as not all of this information was available on the Texas Agriculture website. I also use the USDA's classification of each zip code tabulation area as being a food desert or not.

*Research Design*

I measure a food desert by zip code tabulation areas. Tabulation areas are utilized by the Census to add an additional specification which makes it easier to identify the exact location and also ties data to the specific area. The US Department of Agriculture measures food deserts using census tracts. These tracts are geographic areas with populations between 1,200 and 8,000 residents (US Census). The Census website converted all zip code tabulations to census tract which allowed me to measure at the zip code level while gathering some census tract data.

*Variables*

The Dallas Fort Worth, Texas metropolitan area is my focus. For each of the 272 zip codes (*i*), I used the USDA's website to determine the food deserts in Dallas-Fort Worth. They developed an atlas of all food insecure census tract areas in America.

I use demographic data from the US Census for years 2000, 2010, and 2015 (*t*). The 2015 data is estimated based upon past trends of the American Community Survey. This will be a panel data design where I look at the characteristics of food deserts and non-food deserts to determine what might cause an area to develop an urban garden.

**Table 1:**

Descriptive Statistics

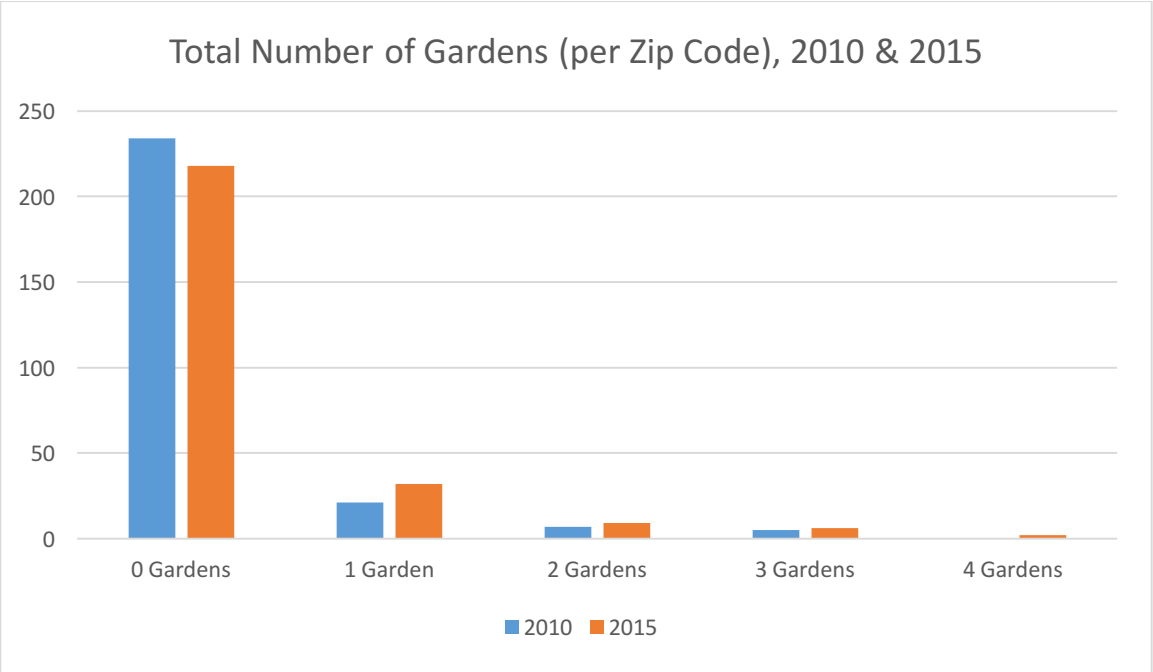
| **Variable** | **Observations** | **Mean** | **Std. Dev.** | **Min** | **Max** |
|---|---|---|---|---|---|
| Presence of a Garden | 801 | .11 | .31 | 0 | 1 |
| Total Number of Gardens | 801 | .16 | .54 | 0 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| Food Desert | 798 | .31 | .46 | 0 | 1 |
| Population (%) | 789 | .23 | .18 | .00035 | .91137 |
| White (%) | 789 | 72.30 | 19.72 | 2.9 | 100 |
| Black (%) | 789 | 13.03 | 16.06 | 0 | 93 |
| Hispanic (%) | 789 | 22.18 | 17.15 | 0 | 92.7 |
| Median Household Income ($) | 784 | .5809157 | .2380476 | .15058 | 1.83656 |
| Poverty (%) | 786 | 10.46 | 10.35 | 0 | 173 |
| Female (%) | 789 | 50.12 | 4.05 | 15.6 | 84.8 |
| High School Diploma (%) | 787 | 8.85 | 13.51 | 0 | 100 |
| Bachelors (%) | 787 | 9.89 | 16.99 | 0 | 80.9 |
| Average Size of Household | 784 | 2.83 | 1.33 | 0 | 38 |
| Average Age | 789 | 34.80 | 5.02 | 19.5 | 66.8 |
| Local Sales Tax | 763 | 1.39 | .41 | 1 | 2 |
| Urban Agriculture Policy | 801 | .333 | .471 | 0 | 1 |

A dummy variable will be used to annotate whether or not a zip code has developed a garden. This will serve as my main dependent variable. In addition, a second, continuous, dependent variable with the number of gardens established in each zip code is used. This is meant to determine what characteristics prompt more than one garden to be developed. There was a growth in the number of urban gardens between 2010 and 2015 (Image 1). Adding a second dependent variable can measure what is impacting the increased number of gardens.

**Image 1:**

Comparison of total number of gardens in the Dallas area between 2010 and 2015




Since food deserts have higher rates of families with low socioeconomic status, I am including Median Household Income as an independent variable. Within the United States, research found that food insecure areas had higher proportions of Black/African-American citizens (Beaulac, et al. 2009), so I included the percentage of Black, White, and Hispanic residents as independent variables. The Hispanic variable is included in the regression equation, because it is defined differently from the White and Black percentages. Whereas, in other data sets, ethnicity is measured using 100 percent as the total combined value, this is not true for the Census. In many instances, the total percentage of the three variables exceeded 100. I included all three variables in the equation since the impact was different.

A lack of education was identified as a cause to food poverty (Reisig and Hobbiss 2000). In measuring total educational attainment of the citizens in each zip code, the Census breaks each level down individually. The high school diploma variable indicates citizens in the area who only have a high school or equivalent education. The percentage of residents with a Bachelors degree or higher is all included in the 'bachelors' variable.

The poverty variable for 2015 is a five-year average of documented poverty by the American Community Survey. For example, the poverty rate reported in my data for the year 2015 is taken from 2011-2015 data and averaged out. The reporting for the 2000 and 2010 data was from the decennial Census, so it was not averaged since it was the most accurate account of poverty for those years.

Lastly, I included a variable for the Urban Agriculture Policy that Texas implemented in 2011. It is a dummy variable that is 1 for 2015, and a 0 for the other two years. The idea is to understand the impact of the policy on the development of urban gardens throughout the region.

*Regression Equation*

A logit or probit regression could be used to estimate a binary dependent variable with marginal impacts then computed. Due to unique panel data, the probit or logit model could not work properly. Instead, I use a panel using the linear probability model, because it is "valid for the average marginal effects in the sample" (Wooldrige 2006).

$$\text{Urban Garden}_{it} = \alpha_0 + \text{fooddesert}_{it} + \text{ug\_policy}_{it} + \text{medianhhincome}_{it} + \text{poverty}_{it} + \text{female}_{it} + \text{localsalestax}_{it} + \text{hsdiploma}_{it} + \text{bachelors}_{it} + \text{avgsizeofhousehold}_{it} + \text{vacanthomesapt}_{it} + \text{avgage}_{it} + \text{white}_{it} + \text{black}_{it} + \text{hispanic}_{it}$$

$$\text{Number of Gardens}_{it} = \alpha_0 + \text{fooddesert}_{it} + \text{ug\_policy}_{it} + \text{medianhhincome}_{it} + \text{poverty}_{it} + \text{female}_{it} + \text{localsalestax}_{it} + \text{hsdiploma}_{it} + \text{bachelors}_{it} + \text{avgsizeofhousehold}_{it} + \text{vacanthomesapt}_{it} + \text{avgage}_{it} + \text{white}_{it} + \text{black}_{it} + \text{hispanic}_{it}$$

The second regression equation measures whether these variables have an effect on the number of gardens in each area. Not only are we looking at the correlation between the independent variables and the development of a garden, but also whether they have any correlation with the number of gardens.

There were 789 observations across all the zip codes and years. However, some of the observations were missing some variables, so only 742 were used in the regressions. Through my first regression, the food desert variable was omitted due to collinearity when using fixed effects, because there is no variation in the variable across time span. Any effect gets folded into the fixed effects. It was also omitted with the number of gardens set as the dummy variable. I took it out of the equation and ran the regression using fixed effects (Table 3), then ran a cross-sectional regression for 2015 including food deserts in order to measure the correlation between food deserts and the presence of an urban garden (Table 2).

## Results

The presence of a food desert was positive and statistically significant at the 0.1 level indicating that a food desert increases the probability that an area will develop an urban garden (Table 2). This result provides support for my hypothesis; however, food deserts had no effect on the number of urban gardens developed in a given zip code.

**Table 2:**
Cross-Sectional prediction of urban gardens (2015)

| VARIABLES | Presence of a Garden |
|---|---|
| Local Sales Tax | -0.0493 |

| | |
|---|---|
| | (0.435) |
| Average Age | 0.0126* |
| | (0.072) |
| Percent Vacant Homes | 0.00345 |
| | (0.646) |
| Average Household Size | 0.00840 |
| | (0.937) |
| Percent Bachelors + | 0.00989** |
| | (0.036) |
| Percent High School | -0.00515 |
| | (0.500) |
| Percent Female | -0.0176* |
| | (0.092) |
| Percent Poverty | 0.00537 |
| | (0.344) |
| Percent Hispanic | 0.00535* |
| | (0.063) |
| Percent Black | 0.00942*** |
| | (0.008) |
| Percent White | 0.00815** |
| | (0.011) |
| Median Household Income | -0.322 |
| | (0.188) |
| Total Population | 0.547*** |
| | (0.0005) |
| Food Desert | 0.0980* |
| | (0.0819) |
| Constant | -0.413 |
| | (0.586) |
| Observations | 248 |
| R-squared | 0.259 |

pval in parentheses
*** p<0.01, ** p<0.05, * p<0.1

According to the study, the implementation of urban agriculture policy in Texas was also positive and statistically significant at the 0.1 level. This indicates that urban gardens are more likely to be developed when there is policy supporting the creation of these gardens.

The percentage of Hispanic residents and those with a Bachelors degree or higher are positively correlated with the development of an urban garden at the 95 percent confidence level.

In contrast, the percent of residents with a high school diploma or equivalent had a negative effect on whether an area had an urban garden.

**Table 3:**

Probability of an urban garden being developed

| VARIABLES | Presence of a Garden |
|---|---|
| Urban Garden Policy | 0.346* |
| | (0.066) |
| Local Sales Tax | -0.0221 |
| | (0.66) |
| Average Age | 0.0101* |
| | (0.086) |
| Percent Vacant Homes | 0.0182*** |
| | (0.001) |
| Average Household Size | 0.00221 |
| | (0.786) |
| Percent Bachelors + | -0.000233 |
| | (0.925) |
| Percent High School | -0.0119** |
| | (0.013) |
| Percent Female | -0.00375 |
| | (0.358) |
| Percent Poverty | -0.00198 |
| | (0.208) |
| Median Household Income | -0.0606 |
| | (0.664) |
| Percent Hispanic | 0.00633*** |
| | (0.003) |
| Percent Black | -0.000215 |
| | (0.949) |
| Percent White | 0.00653*** |
| | (0.001) |
| Total Population | 0.418* |
| | (0.057) |
| Constant | -0.837*** |
| | (0.007) |
| | |
| Observations | 742 |
| Number of Zip Codes | 254 |
| R-squared | 0.185 |

pval in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Food deserts was not a predictor for how many gardens a neighborhood will develop. The percent of White and Hispanic residents, the percent of resident with a Bachelors degree, and the percent of vacant homes were positively correlated with whether or not an area will develop more than one urban garden. Similar to the first regression, as the number of residents with only a high school diploma increased by one percent, the number of gardens decreased.

## Limitations

The first limitation to this research design is the lack of data available through the US Census. I was restricted to the three years, because they were the only three years of data available that described the entire population. The American Community Survey collects data every year starting from 2006. However, that data is from a very small sample within each population. They do not survey every zip code each year, so there would be inconsistencies.

Another limitation to this research is the lack of data pertaining to food deserts from 2000. The USDA has extensive data for 2010 and 2015 for the entire United States, yet I was not able to locate data from years prior. This created a hurdle with regards to truly measuring the correlation between food deserts and urban gardens in a panel data regression with fixed effects. With more data across multiple years, the collinearity would decrease allowing for more specific impacts on the dependent.

## Conclusion and Recommendations

Urban gardens have been around for decades, yet they only recently gained attention. This lack of research in the field makes it difficult to understand their impacts on a community,

whether positive or negative. The findings in this paper show a positive correlation between food deserts and urban gardens in the Dallas-Fort Worth metropolitan region. Texas' 2011 urban agriculture policy could be deemed a success with regards to reaching areas with a lack of access to healthy, affordable food through urban gardens. For a city similar to Dallas looking to develop urban gardens, I would recommend they adopt urban agriculture policy wording like the 2011 Texas state policy.

Urban gardens offered additional healthy food options for those who already have access to it as having a Bachelors degree or higher led to a positive increase in the likelihood of an urban garden developing. A more educated population will lead to the presence of an urban garden in that area, whereas, a higher population with only a high school diploma will lead to a decrease in urban gardens. This is important to note moving forward, because it shines light onto the types of communities where an urban garden might be successfully developed.

Further, the number of urban gardens grew from 2010 to 2015 in the region. The urban agriculture policy variable was statistically significant in whether or not an area developed a garden, but not with regards to the number of gardens. It is important to note that more gardens are popping up which shows progress toward more citizens having access to healthy food options.

Neither the percentage of Black citizens nor median household income had no effect on the presence of an urban garden which one might predict they would impact this due to past literature. However, the percentage of Black people was positively significant for predicting an urban garden and increasing the number of gardens for the cross-sectional regression. In terms of the literature, this shows a possible solution for racial minorities, who overwhelmingly make up food deserts, having a solution to their food insecurity in the future.

A recommendation for future research is to compare a policy's impact across states. There are a total of 17 states with some form of urban agriculture policy. Some policies are as recent as 2016 (SB 191), yet at least one state has a piece of legislation from 2007 (HB133). Evaluating across state lines could prompt governments to re-evaluate their legislation in order to provide the needed resources for organizations and individuals to start urban gardens in their communities.

As an extension to this research, I recommend future researchers study the individual characteristics of the gardens. By studying these characteristics, the true impact of the gardens can be measured. My research looked at whether or not there was a garden in zip codes. The characteristics give additional insight into how much produce is being grown, the number of people reached, etc. which provides further understanding of the outreach and outputs.

A last recommendation is to study multiple cities within a state that implemented urban agriculture policy. To truly measure the success of a state-wide policy, it is important to include multiple regions which the policy affects. Although it was significant for the Dallas-Fort Worth area, the policy could show negative or no effect in other urban cities across Texas.

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## Appendix

**Table 4:**
Panel data predictions on the total number of gardens developed

| VARIABLES | Total Num. of Gardens |
|---|---|
| Urban Agriculture Policy | 0.306 |
| | (0.339) |
| Local Sales Tax | -0.0403 |
| | (0.635) |
| Average Age | 0.0125 |
| | (0.215) |
| Percent Vacant Homes | 0.0279*** |
| | (0.0002) |
| Average Household Size | 0.00353 |
| | (0.800) |
| Percent Bachelors + | 0.00344 |
| | (0.415) |
| Percent High School | -0.0144* |
| | (0.078) |
| Percent Female | -0.00764 |
| | (0.272) |
| Percent Poverty | -0.00189 |
| | (0.482) |
| Median Household Income | -0.114 |
| | (0.633) |
| Percent Hispanic | 0.0134*** |
| | (0.0003) |
| Percent Black | 0.00112 |
| | (0.846) |
| Percent White | 0.0150*** |
| | (0.001) |
| Total Population | 0.678* |
| | (0.0704) |
| Constant | -1.538*** |
| | (0.004) |
| | |
| Observations | 742 |
| Number of Zip Codes | 254 |
| R-squared | 0.182 |

pval in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**Table 5:**
Cross-Sectional regression for total number of gardens developed (2015)

| VARIABLES | Total Num. of Gardens |
|---|---|
| Local Sales Tax | -0.0931 |
| | (0.431) |
| Average Age | 0.0132 |
| | (0.316) |
| Percent Vacant Homes | 0.00216 |
| | (0.878) |
| Average Household Size | -0.0836 |
| | (0.674) |
| Percent Bachelors + | 0.0188** |
| | (0.033) |
| Percent High School | 0.00156 |
| | (0.913) |
| Percent Female | -0.0341* |
| | (0.081) |
| Percent Poverty | 0.0145 |
| | (0.174) |
| Percent Hispanic | 0.00928* |
| | (0.086) |
| Percent Black | 0.0182*** |
| | (0.006) |
| Percent White | 0.0152** |
| | (0.011) |
| Median Household Income | -0.415 |
| | (0.364) |
| Total Population | 1.005*** |
| | (0.0006) |
| Food Desert | 0.0436 |
| | (0.678) |
| Constant | -0.471 |
| | (0.741) |
| Observations | 248 |
| R-squared | 0.218 |

pval in parentheses
*** p<0.01, ** p<0.05, * p<0.1