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Quantitative Analysis of the Accessibility of Fresh Food for Mississippi Residents

Jessie Lee Hayden

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Quantitative Analysis of the Accessibility of Fresh Food for Mississippi Residents

By

Jessie Lee Hayden III

A Thesis
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Master of Science
in Agricultural and Extension Education
in the School of Human Sciences

Mississippi State, Mississippi

Fall 2017

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Fall 2017

Quantitative analysis on the accessibility of fresh food for Mississippi residents

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Food accessibility was determined for each Mississippi County, based on data obtained from the Retail Survey regarding common fruits and vegetables in available in food stores. Availability data were correlated with four social-economic/demographic variables: race, median household income, SNAP enrollment, and education. There were negative low magnitude correlations between percentages of Africans American and fresh fruit and vegetables availability, and percentages of SNAP benefits recipients and fresh fruit and vegetables availability. Positive low magnitude correlations were found between income and fresh fruit availability, and education and fruit availability. Lastly, moderate positive correlations were found between education and fruit availability and income and availability. This research can be used to help extension agents and farmers' market managers better understand places that may have a lack of fresh food available. This research will also allow SNAP-Ed professionals a chance to have an idea of where their services are needed.

DEDICATION

Dedicated to James (Buddy) Brooks

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CHAPTER I
INTRODUCTION

Introduction

Food accessibility has become a slowly increasing problem in the United States since the great recession of 2007 (Gordon, Briefel, Collins, Rowe, & Klerman, 2016). Some Mississippians, although they live in a state known for agriculture, have experienced limited access to food (Connell, Yadrick, Simpson, Gossett, McGee, & Bogle, 2007; Dai & Wang, 2011; Morton & Blanchard, 2007). Research about food accessibility in Mississippi mainly focuses on areas such as the Delta and Southwest Mississippi (Connell et al., 2007; Dai & Wang, 2011; Morton & Blanchard, 2007). Research has covered a plethora of issues associated with food accessibility, including the causes and the potential results of experiencing low food accessibility (University of Mississippi Medical Center). Despite the fact that some research suggests that people in food deserts do not desire fresh food, examples like the farmers' market placement in urban Illinois and rural Iowa have indicated that people in food deserts sometimes desire fresh foods and improvements in the food accessibility of their community (Morton & Blanchard, 2007; Suarez-Balcazar, Martinez, Cox, & Jayraj, 2006).

A map by the University of Mississippi Medical Center illustrated how and which areas in Mississippi are classified as urban and rural food deserts. Although food deserts commonly have with convenience stores stocked with unhealthy food options, the food

choices of the communities in which these stores are located may influence the available supply of fresh foods (Walker, Block, & Kawach, 2012).

Despite the government's attempts to improve the issues caused by low food accessibility, research has also shown that government food programs are not a definite solution to issues caused by the lack of food insecurity (Coleman-Jensen et al., 2011; Currie, 2003). In some cases, increasing access to government nutritional assistance programs have led to increased rates of diet-related illnesses, which are common in an area experiencing issues with food accessibility (Coleman-Jensen et al., 2011; Currie, 2003).

Statement of Problem

Nationally, food insecurity has been on the rise since the beginning of the great recession of 2007, with a five percent increase in residents experiencing food insecurity between 2007 and 2008 (Gordon et al., 2016). In the past decade, the national issue of food insecurity has slowed nationally but continues to increase (Gordon et al., 2016). In 2014, a survey concluded that food insecurity was an issue with 14 percent of United States' residents, while about 19 percent of American households with children experience some form of food insecurity (Gordon et al. 2016). Many Mississippi areas face issues associated with the lack of food accessibility, especially in Southwest Mississippi and the lower region of the Mississippi Delta (Connell et al., 2007; Dai & Wang, 2011). There has been a significant amount of research dealing with the causes and consequences of having low food accessibility.

There have been many contradictions in the research about the reasons behind food accessibility. One of the identified causes of food insecurity is that low-income

areas have so many convenience stores that do not supply the amount of fresh foods that people in those communities need in order to stay healthy (Gordon et al., 2016). Another cause is that people in areas that experience high levels of food insecurity often have different preferences in food, meaning that they usually shop for unhealthier food options. For example, residents that live in areas that are more likely to have more convenience are more likely to drive to the shop at the convenience store because it is easier to get to. On the other hand, these convenience stores do not have the healthier foods (Walker et al., 2012). With a lack of demand from these neighborhoods, the available stores cannot profit from stocking healthier foods (Walker et al., 2012). To improve the food security of these communities, government programs have been administered (Currie, 2003).

The most popular program for government food assistance programs are the Supplemental Nutritional Assistance Program (SNAP), known as food stamps, and the food program for Women Infants and Children (WIC). The purpose of these programs is to improve the accessibility of healthy food to low income residents. Research has shown that there are no relationships between people's acceptance of these programs' benefits and food security (Currie, 2003). Although government food assistance programs are made to improve the accessibility of food of low income residents, many times these programs do not help with the issues caused by food insecurity (Currie, 2003).

Background of the Problem

Food Deserts

Food deserts are locations that have little or no access to fresh food (Morton & Blanchard, 2007). According to the University of Mississippi Medical Center for

Bioethics and Medical Humanities, there are differences between urban and rural food deserts. Urban food deserts are considered places that are one mile from the closest food vendor, and rural food deserts are classified as locations at least ten miles from the nearest food vendor (Morton & Blanchard, 2007). In these areas, it is normal for the poverty levels to exceed 20 percent (Morton & Blanchard, 2007). In Mississippi, food deserts are common in the Southwest region and lower parts of the Mississippi Delta, located in the western part of the state (Connell et al., 2007; Dai & Wang, 2011). Residents of these areas commonly have higher rates of dietary-related illnesses, such as obesity, diabetes, and heart problems, because of the low access to fresh foods in food deserts, (Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007). On average, people in these areas consume about 20 percent of the recommended amount of produce per day (Connell et al., 2007).

The children in these areas consume less than the nationally recommended amount of nutrients including Calcium, Iron, Vitamin A, Vitamin C, Vitamin B6 and Riboflavin (Connell et al., 2007). Like the rest of the country, the most common food deserts in Mississippi are located in rural areas where residents are associated with low socioeconomic status (Connell et al., 2007). Nationally, food desert residents are common for having large percentages of residents lacking high school degrees (or equivalence), higher poverty rates, lower median family incomes, older families, and a higher amount of convenience stores (Morton & Blanchard, 2007).

Since food deserts have a higher density of convenience stores, which are mostly stocked with unhealthy food, this may contribute more to the unhealthy characteristics of these areas such as the residents' poor diets (Sallis, Nader, Rupp, Atkins, & Wilson,

1986). On the other hand, the lack of availability could be due to the difference in food preference in residents of food deserts and food oases (Walker et al., 2012). Studies have found correlations between obesity rates and food preferences where residents of food deserts are more likely to be less favorable of healthier foods (Walker et al., 2012).

From the vender's perspective, food preferences of residents in food deserts give vendors no reason to supply healthier foods (Walker et al., 2012). When it comes down to the preferences of fresh food to these areas classified as food deserts, there has been research on placement of farmers' markets (Suarez-Balcazer et al., 2016). Although some research discusses residents of food deserts having negative perceptions of fresh foods, many times the presence of the fresher, healthier food options are appreciated by these residents (Suarez-Balcazer et al., 2016).

Political Influences on Food Accessibility

One of the newer governmental food accessibility program is the Summer Electronic Benefits Program. This program is intended to improve the food accessibility of children old enough to be in school (Gordon et al., 2016). The Summer Electronic Benefits Program grants \$60 to a household per school-age child (3 years old to 18 years old) (Gordon et al., 2016). This program is only implemented during summers because of the children's lack of access to school lunch programs (Gordon et al., 2016). Programs such as the Summer Electronic Benefits Programs are important because of the increasing amount of food insecurity in the nation caused by the Great Recession of 2007 (Gordon et al., 2016).

Food insecurity is a nationally increasing problem with a four percent gain from 2007 to 2008. As stated earlier, the issue of food insecurity in the United States is not

increasing as much as it did between 2007 and 2008. Currently the national food insecurity rate has remained between 14 percent and 15 percent as of 2014 (Gordon et al., 2016). According to research, food insecurity is still growing (as of 2014), 19 percent of households with children experienced some form of food insecurity (Gordon et al., 2016). Despite the fact that the SNAP program attempts to decrease the rates of food insecurity, studies have been done suggesting that the children who have access to these programs have higher rates of diet-related health problems, despite SNAP being a program to improve food accessibility (Coleman-Jensen et al., 2011; Currie, 2003).

In the article “Identifying the Effects of SNAP (Food Stamps) on Child Health Outcomes When Participants are Endogenous and Misreported,” researchers used data from the National Health and Nutrition Examination Survey (NHANES) to determine the effects of government nutritional assistance (Kreider, Pepper, Gundersen, & Jolliffe, 2012). This research not only focused on the effects on children, but the food security and food related health of the population, paying particular attention to issues like obesity and anemia (Kreider et al., 2012). This article suggested that SNAP alone does not improve food insecurity in some areas (Kreider et al., 2012).

Measuring Accessibility

There have been many proposed methods for measuring the accessibility of food and resources (Dai & Wang, 2011). In most studies about food accessibility, their variables include population density and the geographic ratio of grocery store locations (Dai & Wang, 2011). When measuring food accessibility, the most common unit in which to break down results is by county (Dai & Wang, 2011). As stated earlier, population density and ratio are some of the most common variables. These two are used

in reporting food accessibility in grocery store per household per region (Dai & Wang, 2011). This method used for measuring food accessibility simply reflects the ratio between food vendors and the population of a region (Dai & Wang, 2011). However, this method of reporting accessibility has its limitations (Dai & Wang, 2011). When using this method, one cannot accurately describe the distribution of food vendors in an area (Dai & Wang, 2011). In this study done by Dai and Wang (2011), this method of using population density and food venter placement for measuring food accessibility does not take the store size into consideration, and it does not consider the people who lack transportation to stores.

Examining spatial interaction is another method of describing food accessibility, but this approach is more useful when measuring the food accessibility in rural areas, because people in rural areas are more likely to have transportation to buy food (Dai & Wang, 2011). This approach describes the food vendors' competition for the demand from shoppers (Dai & Wang, 2011). This method was based on the understanding that rural residents are more likely forced to travel more to purchase food (Burns, Gibson, Boak, Baudinette, & Dunbar, 2004). Mobility is considered a common barrier for food access in rural communities (Dai & Wang, 2011). When measuring the food accessibility, it is also important to include the non-spatial factors with the average levels of accessibility to food (Dai & Wang, 2011). Dai and Wang (2011) also compared non-spatial factors related to food accessibility. The factors that many researchers have found to have correlations with food accessibility include race, income, educational levels, and unemployment rates of communities (Algert, Agrawal & Lewis (2006); Donkin, Dowler,

Stevenson & Turner, 1999; Guy & David, 2004; Helling & Sawicki, 2003; Larsen & Gilliland, 2008; Raja et al., 2008).

Purpose of the Study

The purpose of this study is to investigate the accessibility of fresh food to Mississippi residents. In addition, this research intends to determine the relationship between government food program compliance and food accessibility. This study will determine the relationship between income and food accessibility. This research will give a general idea about which areas in Mississippi experience the least food accessibility.

Research Questions

1. What is the correlation between median county income and the amount of common, fresh, good quality fruits sold in the county?
2. What is the correlation between median county income and the amount of common, fresh, good quality vegetables sold in the county?
3. What is the correlation between counties' percentage of participants enrolled in SNAP and the amount of common, fresh, good quality fruits sold in the county?
4. What is the correlation between counties' percentage of participants enrolled in SNAP and the amount of common, fresh, good quality vegetables sold in the county?
5. What is the correlation between the percentage of African Americans in a county and the amount of common, fresh, good quality fruits sold in the county?
6. What is the correlation between the percentage of African Americans in a county and the amount of common, fresh, good quality vegetables sold in the county?

7. What is the correlation between the percentage of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality fruits sold in the county?
8. What is the correlation between the percentage of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality vegetables sold in the county?

Summary of Methodology

The survey method was used for collecting data about the accessibility of fresh food to residents of Mississippi. The tool used in this research was a questionnaire. The survey results were analyzed for correlations between the variables. Data were collected from the Census Bureau in regard to the non-spatial factors, such as educational level, the median income and racial diversity of different Mississippi counties.

Significance to the Current Study

Significance to Policy

This research may be of importance to fresh food vendors who can travel to locations where their products are desired. According to Xiang Chen and Xining Yang (2014), "Access to nutritious food is imperative to physical well-being and quality of life." There has been a rapid increase of money that farmers' have earned in direct market sales. Research has stated that from 2006 to 2007, farmers' markets and other forms of direct sales of produce have jumped from 812 million dollars to 1.2 billion dollars (Bletzacker, Holben, & Holocomb, 2009). This study is important because it will allow managers to have better understanding of the accessibility of fresh produce in

Mississippi. This information is important to farmers', for they are more capable than large food retailers of capitalizing on new market niches and adjusting production (Sommer & Nelson 1985). This research will give an understanding of the accessibility of fresh produce in Mississippi. Mississippi is saturated with food deserts, especially in the Lower Delta and Southwest Mississippi (Dai & Wang, 2011). This research can persuade policy makers to supply registered farmers' markets access to federal food programs like Women, Infants, and Children (WIC), Farmers' Market Nutrition Program (FMNP), Senior Farmers' Market Nutrition Program (SFMNP), and Supplemental Nutrition Assistance Program (SNAP), increasing the food accessibility of low-income Mississippi residents. With this research it will also be easier for SNAP-Ed workers the chance to see which areas are more in need of their services.

Limitations

This research has a quantitative, descriptive-correlational research design. The data collection methods of surveying also have a set of limitations. Correlational research describes the relationship between two or more variables ("Strengths and limitations | Better Thesis," n.d.). On the other hand, correlation is not causation, meaning one variable does not cause a reaction in the other. In quantitative research, one of most common limitations for quantitative research is how background literature is not as abundant as qualitative research. The situations of the study are hard to understand, and the data collected from the research may not be robust enough to explain certain issues ("Strengths and limitations | Better Thesis," n.d.). Descriptive research may be effective but cannot conclusively demonstrate how two variables are related. Descriptive research is closely related to correlational research and cannot conclusively demonstrate that two

variables are related. This research cannot manipulate any of the variables or groups. Methods of collecting data have limitations as well. For the survey study method, one disadvantage is that information is usually unable to study scenarios as much as a researcher would like. Survey findings sometimes lack internal validity, and these studies are consistently overdone. On the other hand, the survey study method is useful when describing the characteristics of a population, such as statewide and countywide food accessibility. The last limitation of this study is the impossibility of getting in contact with all food vendors like roadside food sellers.

Assumptions

1. Respondents will understand the questions asked on the questionnaire.
2. Respondents will honestly answer the questionnaire.

Definitions

Food Deserts- Areas that lack easy access to fresh food (American Nutrition Association, 2011)

Food Oasis- Any place where people have the best possible access to healthy options and eating environments ("Food oasis: Washington State Department of Health," n.d.)

FMNP - Farmers' Market Nutrition Program to "provide fresh, unprepared, locally grown fruits and vegetables to WIC participants, and to expand the awareness, use of, and sales at farmers' markets" ("WIC Farmers' Market Nutrition Program (FMNP) | Food and Nutrition Service," n.d.)

- SFMNP- Seniors Farmers' Market Nutrition Program "awards grants to States, U.S. Territories, and federally recognized Indian tribal governments to provide low-income seniors with coupons that can be exchanged for eligible foods at farmers' markets, roadside stands, and community-supported agriculture programs" ("Senior Farmers' Market Nutrition Program (SFMNP) | Food and Nutrition Service," n.d.).
- SNAP- Supplemental Nutrition Assistance Program, commonly known as the food stamp program. The program is implemented by the government to stretch food budget to improve on the issues associated with food accessibility. SNAP benefits can be used to purchase food at several types of food vendors.
- SNAP-Ed- SNAP-Ed is a government based program used to educate people on healthier practices when using SNAP benefits. Programs held by this program usually come in the form of nutrition education classes. SNAP-Ed is influential in the improvement of policies that better the environment of the communities that they are associated with (United States Department of Agriculture, 2017).

CHAPTER II

LITERATURE REVIEW

Introduction

Contrary to popular belief, food accessibility is related to many factors other than the transportation to the food vendors. Food accessibility can be linked to anything that may alter eating patterns of an individual. Some factors that affect food accessibility include the food environment, perception of fresh food in that area, cost of food, government assistance, or the income of residents of a particular area. Researchers have found correlations between these variables and low food accessibility. For example, some literature suggests that food deserts (places of low food accessibility) commonly have high levels of low-income homes, low levels of education, and little to no access to fresh food in the available vendors that usually leads to high levels of dietary related health issues in these areas.

Income

There are many articles about relationships between income and its impact on the food environment. There is a negative correlation between fresh food accessibility and income (Suarez-Balcazar, Martinez, Cox, & Jayraj, 2006). In South Chicago, a survey was done on the views of African Americans on their accessibility to healthy foods (Suarez-Balcazar et al., 2006). In this study, food vendors were available, but underserved the surrounding residents when it came to supplying fresh, healthy foods (Suarez-Balcazar et al., 2006). The stores in this food environment were stocked primarily with processed goods (Suarez-Balcazar et al., 2006). Residents in this low-

income area of Chicago felt that they were underserved by the food vendors because of the lack of healthy or organic food options (Suarez-Balcazar et al., 2006).

There were issues with the generalizability, including the fact that this study was done in an environment composed of 90 percent of minorities (Suarez-Balcazar et al., 2006). According to the U.S. Census Bureau (2000), this area had the average yearly income of about \$34,000 and the problem with accessibility was not that people of low economic status did not desire fresh food, but that residents did not have the access to the fresh foods that they desired (Suarez-Balcazar et al., 2006).

People that have lower incomes are likely to receive federal food assistance from programs like Women, Infants, and Children (WIC) and Supplemental Nutrition Assistance Plan/Food Stamps (SNAP) (Kreider et al., 2012). Despite the efforts for these programs to decrease the quantity of negative influences on these low-income communities, the results of these programs have been the opposite in some cases (Kreider et al., 2012). For example, research shows that, although federal food assistance is supposed to improve food accessibility, sometimes the implication of these food assistance programs lead to the exact opposite, causing an increase in the rate of negative impacts of low food accessibility (Kreider et al., 2012).

Webber, Sobal, and Dollahite (2010) did research on shopping preferences for vegetables and fruits in low-income areas and the demographic qualities of these residents. This research was a quantitative study based on grounded theory where the population was the quantity of residents of rural Upstate New York (Webber, Sobal, & Dollahite, 2010). In this study, respondents were asked about their internal store environment, product quality, product price and patrons' relationships with the stores

(Webber et al., 2010). For the participants in this study, fresh food seemed to be very convenient (Webber et al., 2010). The residents of the area often based their buying practices on the prices of food, meaning that when people in this area with low-incomes shop, price extremely influential (Webber et al., 2010). On the contrary, the primary stores for most of the respondents in this study were the closest to the food vendors, meaning that transportation may be a factor because these respondents tended to shop at the places that were closes to them regardless of the quality of the food (Webber et al., 2010).

Rural New York is different from most low-income places, because of the extensive access that they have to food compared to other low-income areas where food accessibility is an issue such as Chicago (Suarez-Balcazar et al., 2006; Webber et al., 2010). Though there is a correlation between food accessibility and low-income households, it does not mean that all low-income areas are deprived of food accessibility (Webber et al. 2010).

Farmers' markets in low-income communities can positively impact the food environment. As stated earlier, people in low-income areas are more likely to participate in government assistance programs, access to these programs also impacts the food accessibility of low-income areas (Young, Karpyn, Wich & Glyn, 2011) Available food vendors commonly under-serve the low-income neighborhoods (Young et al., 2011). In the demographic used in this study, farmers' markets tend to fill the shopping gaps (missing foods from other vendors) of low-income food shoppers caused by the other vendors (Giang, Karpyn, Burton Laurison, Hiller, & Perry, 2008; United States Department of Agriculture [USDA], 2002). Due to the issues caused by some of these

areas being plagued with different types of food insecurity, farmers' markets operating in these areas have many challenges (Young et al., 2011). When farmers' markets operate in these areas, the markets must address the needs of a community, including price constraints, transportation barriers, and health problems (Young et al., 2011).

Yousefian, Leighton, Fox, and Hartley (2011) also tried to understand the perspectives of low-income parents. During this qualitative study, residents of rural and urban low-income areas in Maine answered questions associated with food accessibility (Yousifian et al., 2011). In this study, researchers asked questions about where respondents got their food, what problems do residents face when buying food, how far are people willing to travel for food, what are the alternative food vendors, what was the quality of food that was available, how did they decide where they buy their food, and what was the respondent's definition of healthy food (Yousifian et al., 2011). This study had 48 participants and also used focus groups as the research method (Yousifian et al., 2011).

Issues with validity include the demographic of a vast majority of respondents being mostly Caucasian (Yousifian et al., 2011). The limitations of this study include the small sample sizes and the lack of generalizability because of the lack of racial diversity (Yousifian et al., 2011). Another limitation is that a large portion of the participants in this study possibly only participated because of their higher than average value in obtaining healthy food, causing biased opinions of the food accessibility of the community (Yousifian et al., 2011). In this study, it is also possible that answers may have been altered to appear more acceptable to people with healthier diets (Yousifian et al., 2011). This research concluded by describing the challenges associated with food

accessibility in rural communities, for rural low-income residents; food availability was mostly affected by cost, distance, and quality (Yousifian et al., 2011).

In 2010, there was research done on low-income mothers and their perceptions about barriers associated with using farmers' markets and access to food (Misyak, Ledlie, McFerren, Culhane, Niewolny, Hosig, & Serrano, 2015). This study was performed in Virginia and used for understanding the factors that affected low-income mothers who were eligible for SNAP benefits (Misyak et al., 2015). This study was a qualitative study and used the focus group research method, similar to the study in Maine (Misyak et al., 2015; Yousifian et al., 2011). In this study, participants underwent three sessions (Misyak et al., 2015). In the first session, participants were given cameras where they had to take a picture of themselves for identification purposes (Misyak et al., 2015).

Next, the participants in this study were asked to take pictures representing their shopping experiences (Misyak et al., 2015). The second meeting was when researchers taught the participants about healthier food options (Misyak et al., 2015). During this session, researchers taught participants about food preparation, adding produce to diets, and choosing to exercise more (Misyak et al., 2015). After teaching participants about better buying practices, participants were given another camera to take pictures to show if their food purchasing practices changed (Misyak et al., 2015).

In the last meeting, participants were given copies of their photos, then participants discussed the changes in their shopping due to the new information that they learned about food shopping (Misyak et al., 2015). This research was concluded by figuring the factors affecting the participants' accessibility to food (Misyak et al., 2015). The most important factors that influence the accessibility were inconvenience and

awareness. Inconvenience included farmers' market hours of operation, the availability of the food, children coming on shopping trips, and the navigation and organization of the store (Misyak et al., 2015). Under awareness, the primary factor affecting food accessibility for these low-income mothers included not knowing if the store accepted food stamps (Misyak et al., 2015). The last category of factors affecting availability includes social stigma because many of the participants said that they did not want others to know they used food stamps (Misyak et al., 2015).

In West Virginia, there was a study about the factors that affect food accessibility of the low-income, rural, women residents (Andress & Fitch, 2016). The population for this qualitative study was every woman enrolled in the WIC programs in six rural counties in West Virginia; the convenience sampling method was used (Andress & Fitch, 2016). The research method that was utilized in this study was also a focus group (Andress & Fitch, 2016). Similar to many rural low-income areas, rural West Virginia has limitations with food accessibility, primarily because of these areas' available infrastructure (Liese, Wesi, Pluto, Smith & Lawson, 2007; Pitts, Whetstone, Wilkerson, Smith & Ammerman, 2012) In the focus groups, researchers asked questions about the sources of food, the availability of food, price of food, if the vendors serve the needs, and if the food meets the population's standards (Andress & Fitch, 2016). After the transcripts from the focus groups had been coded, conclusions regarding food environment, household determinants, and the social cultural environment were reached (Andress & Fitch, 2016).

A commonly mentioned barrier to food accessibility included the lack of transportation. Some people went over their budgets because of transportation cost and

their lack of public transportation (Andress & Fitch, 2016). Income was also an issue impacting accessibility. Some people had to sacrifice quality for lower prices (Andress & Fitch, 2016). When referring to the cultural environment, similar to many food deserts, the available stores under-serve their patrons (Andress & Fitch, 2016). This research concluded that the most influential factors that affect food accessibility in rural West Virginia are price and transportation (Andress & Fitch, 2016).

Food Environment

As stated earlier, food deserts are places that experience a lack of food accessibility, and many studies have explained how supermarket and fresh food access can influence the food accessibility in certain communities. In 2009, researchers used the before and after concept to understand the influence of farmers' markets on the food accessibility of communities experiencing low levels of food accessibility (Larson & Gilliland, 2009). The issues in food deserts are not that residents do not have any access to food so much is it that they do not have access to quality food, such as fresh meat and produce (Larson & Gilliland, 2009). Because of supply and demand, this causes another issue with accessibility associated with the price of the food (Larson & Gillard, 2009). Because of this, supermarkets can make fresh food more expensive (Larson & Gilliland, 2009).

With the implementation of farmers' markets in this area, there was a decrease in the price of fresh foods in London (Larson & Gilliland, 2009). Food deserts are also usually characterized as low-income areas, which may cause some the available vendors of fresh foods to move to different neighborhoods (Alwitt & Donley, 1997; Eisenhauer, 2002; Morland, Roux, & Wing, 2002; Weinberg, 2000). In this study, researchers

concluded that farmers' markets with more reasonable prices placed in food deserts could help the accessibility of fresh food in these areas (Larson & Gilliland, 2006).

Accessibility is also associated with the lack of variety which can easily be helped by farmers' markets (Larson & Gilliland, 2006).

Food deserts are more than just demographic regions characterized as areas with food accessibility and low-income residents (Morton & Blanchard, 2007). In 2007, there was a study done on the socio-economic factors of residents in demographic areas labeled as food deserts (Morton & Blanchard, 2007). Food desert residents have larger rates of people without high school diplomas or equivalence (Morton & Blanchard, 2007). The vast majority of individuals who live in food deserts also have a higher poverty rate, which is usually associated with lower median incomes (Morton & Blanchard, 2007). Lastly, these areas are associated with higher density of older people (60 and older) and higher quantity of convenience stores (Morton & Blanchard, 2007). This quantitative study was done by surveying 1500 residents in rural areas of Iowa (Morton & Blanchard, 2007). This survey also asked about dietary factors of food desert residents, which may also affect the accessibility of these neighborhoods from the supply standpoint (Morton & Blanchard, 2007). For example, an excess of 45% of respondents in this study did not consume the recommended amount of fresh fruit, 66% of respondents did not consume the recommended amount of fresh vegetables. 34% of respondents did not consume the correct quantity of dairy products, and almost 25% of the respondents lacked the recommended quantity of protein in their diet (Morton & Blanchard, 2007). This research also included a map of the nation showing the areas in Mississippi that experience the

most food insecurity, including the Southwest region and the lower part of the Mississippi Delta (Morton & Blanchard, 2007).

The lower Mississippi Delta is one of the prime regions in Mississippi that is plagued with issues associated with food accessibility (Connell et al., 2007; Morton & Blanchard, 2007). In 2007, a quantitative study was done on the food supply adequacy in the lower Mississippi Delta (Connell et al., 2007). Food supply adequacy is associated with the components of availability of food, including variety, and price (Connell et al., 2007). Like most regions that experience higher levels of food insecurity, the lower Mississippi Delta is an area saturated with higher than average rates of poverty, food insecurity, and nutrition-related diseases. In this area, people also have eating habits that are subpar to today's nutritional standards (Connell et al., 2007). The study methods used in this research included the survey method with a randomly selected sample of five different types of stores in each county of the lower Mississippi Delta (Connell et al., 2007). After collecting the data, the research concluded that the vast majority of the supermarkets in this area carried 96% of the Thrifty Food Plan foods, meaning that almost all of the recommended healthy food was available in supermarkets (Connell et al., 2007). Small and medium stores carried only about 50% of the Thrifty Plan Foods, and convenience stores sold about 28% of these type foods (Connell et al., 2007). Even though the supermarkets had more fresh foods, they were scarcer. This means that transportation is one of the main barriers to food accessibility in the lower Mississippi Delta (Connell et al., 2007).

Another area in Mississippi characterized with a lack of food accessibility is Southwest Mississippi (Dai & Wang, 2011). One of the problems associated with the

food accessibility is an area's public health, since that lack of food access can lead to less healthy food choices (Dai & Wang, 2011). These areas commonly have lower access to fresh fruits and vegetables (Dai & Wang, 2011). On the other hand, in these areas, because of the easy access to convenience stores, residents are commonly bombarded with unhealthy food choices (Dai & Wang, 2011). This study included 13 counties in southwest Mississippi, where researchers observed the factors affecting the food accessibility of residents in both rural and urban food deserts (Dai & Wang, 2011).

The findings of this research show how rural and urban desert residents share some of the same factors associated with food accessibility (Dai & Wang, 2011). Both experience geographic issues. This is usually tied to transportation in low-income, rural areas. Residents have to travel too far. For urban residents, being that convenience stores are more available, they are used the most (Dai & Wang, 2011). Despite having public transportation in many urban food deserts, the usage of public transportation by citizens is decreased by residents, because of the lack of storage, residents buy cheaper and less healthy foods because of the easier transport to their home (Algert, Agrawal, & Lewis, 2006). Similar to other studies, the neighborhoods in this study had similar nonspatial factors regarding food insecurity including high levels of poverty and low incomes (Dai & Wang, 2011).

In 2007, a study was conducted on food availability in regard to the types of stores available and the cost of food in these areas (Liese, Weis, Pluto, Smith, & Lawson, 2007). This study was a quantitative study where the research method was the cross-sectional study method, meaning that the survey was only implemented once (Liese et al., 2007). 92,000 residents populated the 1,106 square mile area of Orangeburg County

South Carolina (Liese et al., 2007). While working on this study, researchers noticed disadvantages with food accessibility in this area (Liese et al., 2007). Overpopulation, lower incomes, people lacking transportation, and poor nutritional practices usually characterize areas of low food accessibility (Liese et al., 2007). Because some of these regions lack convenient access to supermarkets, this variable is usually related to the lack of fruits and vegetables in the diets of these individuals (Liese et al., 2007). Researchers believe that increasing the access to these types of foods can improve the health of residents who do not have access to fresher produce (Liese et al., 2007). The researchers found what several others have, that convenience stores saturated with unhealthy options were more accessible than the stores with healthy foods (Liese et al., 2007).

Food Accessibility Programs

In 2012, research was done on the possible effects of food availability on children's health. In this research, the governmental nutritional program that was studied was the Supplemental Nutrition Assistance Program (SNAP) (Kreider et al., 2012). Although these governmental programs are implemented to slow down the adverse effect of low food accessibility, they often do not address issues associated with food insecurity (Coleman-Jensen et al., 2011; e.g., Currie, 2003). People who accepted federal food assistance from these programs were worse off than people who didn't receive assistance, meaning that statistically, the policies associated with the SNAP program were a failure in regards to helping the negative results of low food accessibility (e.g., Currie, 2003). This article concluded that there may be some variability in the effects of government nutritional assistance programs such as the SNAP program (Kreider et al., 2012). Although previous research has suggested that government assistance does not help with

food accessibility, researchers were able to determine that these types of programs contribute to reducing the quantity of food insecurity (Kreider et al., 2012).

There have also been alterations to government nutritional assistance programs including the Summer Electronic Benefits Transfers for Children (Gordon et al., 2016). This is in addition to the SNAP benefits program, but was specifically created for the improvement of food accessibility for the summer (Gordon et al., 2016). This program gives households \$60 per school aged child in a residence and works through the WIC program (Gordon et al., 2016). The objective of this study was to describe the different impacts of WIC and SNAP on families and their issues with food accessibility (Gordon et al., 2016). In this quantitative study, researchers randomly selected students from different school districts where they measured the effect of the \$60 food vouchers on the food security of the participants (Gordon et al., 2016). Researchers in this study used the United States Department of Agriculture Food Security Scale to determine the effects. The researchers concluded that children who lived in areas that received higher levels of WIC assistance experienced fewer food insecurities (Gordon et al., 2016).

Summary of Literature Review

The literature related issues regarding food accessibility have revealed many similarities in areas that experience food insecurity. Similarities of these regions included the how issues with lower food accessibility are related to lower socioeconomic statuses. For example, people who live in food deserts not only have low access to food, the areas in which these people reside are characterized as areas with low incomes and low levels of education. These areas associated with low food accessibility are often saturated with

convenience stores, which may affect the demand for fresh, healthy foods available at grocery stores.

Government programs have been implemented to improve on issues dealing with food insecurity, but many times fail. The literature also suggests that the quantity of benefits gained by residents varies place to place, and transportation plays a large role in food insecurity as much as price. Although these programs allow extra money for food, some areas suffering from food insecurity are rooted from other problems like transportation and availability. Many times, people who accept benefits from the federal food programs still experience the problems associated with food insecurity, including dietary related health concerns.

CHAPTER III

METHODOLOGY

Introduction

This chapter gives justification for the research design and describes how research questions in chapter one will be answered. First, there is a description of the research design and the justification. Next, the research questions from chapter one are repeated. After the research questions, there is a description of the population, and how the population was determined. The measurements and instruments section talked about which tools that were used to collect the data. After this, the sources of data were matched with their variables, and the data level for each variable was explained. Lastly, the data analysis section gave justification for the statistics ran to find correlations between the variables.

Description of Research Design

This quantitative research has a descriptive correlational design, using secondary data from the Census Bureau, the Mississippi 2016 Annual Health Report, and the Mississippi State University Extension Service Retail Survey for the development of the variables. Since this study has a correlational research design, there is no manipulation of variables. The purpose of this research is to find the correlation between the variables discussed in the research questions.

Research Questions

1. What is the correlation between median county income and the amount of common, fresh, good quality fruits sold in the county?

2. What is the correlation between median county income and the amount of common, fresh, good quality vegetables sold in the county?
3. What is the correlation between counties' percentage of participants in SNAP and the amount of common, fresh, good quality fruits sold in the county?
4. What is the correlation between counties' percentage of participants in SNAP and the amount of common, fresh, good quality vegetables sold in the county?
5. What is the correlation between the percentage of African Americans in a county and the amount of common, fresh, good quality fruits sold in the county?
6. What is the correlation between the percentage of African Americans in a county and the amount of common, fresh, good quality vegetables sold in the county?
7. What is the correlation between the percentage of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality fruits sold in the county?
8. What is the correlation between the percentage of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality vegetables sold in the county?

Population and Sample

The population includes all 82 counties located in Mississippi. The questionnaire was given to 466 stores around Mississippi that sell food, ranging from gas stations to grocery stores. To complete the questionnaire, the stores had to have at least 25% of store space for selling food.

Measurements and Instruments

The instrument used was the Mississippi State University Extension Service Retail Survey. This survey was given to all registered food vendors in Mississippi who have 25% of their store space for selling food. On the cover page, representatives for each store were asked to give the date that they filled out the questionnaire, their name, the name of the store, and that particular store's address. After this, respondents recorded the time that it took to complete the survey, the quantity of registers, the quantity of real estate occupied by purchasable food, and a section for comments. Next, the questionnaire has measures for different types of food categories. The two categories used in this study were for fresh fruit and fresh vegetables. Under these areas are the variables that were used in this study. The questions under these sections asked if these fresh products were available, if different fruits and vegetables were available, the price of the products, the quantity of the products, and the quality of the foods. The next instrument used was information gathered from the Census Bureau, including the county's median income, educational levels, racial diversity, and government nutritional assistance program enrollment.

Description of Variables

The variables in the study are defined operationally below.

Amount of common, fresh, good quality fruits sold in a county.

Data about the amount of common, fresh, good-quality fruit was calculated from the instrument by using measure two of the questionnaire (Appendix I). This variable was calculated by recording the sum of common fresh good-quality fruits sold in a county.

For example, if a county had two stores that sold apples, three stores that sold grapes, and one store that sold bananas, that county was recorded as a county that sold three common fruits. The data level for this variable is ratio. For gathering this data, the questionnaire had a column where they could check yes or no pertaining to the availability of a fruit in a store.

Amount of common, fresh, good quality vegetables sold in a county.

Data about the amount of available good quality, fresh vegetables was calculated from the instrument by using measure four of the questionnaire (Appendix II). This variable was calculated by recording the sum of common, fresh, good-quality vegetables sold in a county. For example, if a county had two stores that sold carrots, three stores that sold onions, and one store that sold tomatoes, that county was recorded as a county that sold three common vegetables. The data level for this variable is ratio. For gathering this data, the questionnaire had a column where respondents could check yes or no pertaining to the availability of a vegetable in a store

Percentages of African Americans that live in a county

These data about the percentage of African Americans that live in a county were collected in the United States Census. Since all counties in Mississippi report their African American population by percentages, this is a ratio level statistic.

Percentage of citizens with either a high school degree or equivalence

These data about the percentage of citizens in a county that have a high school degree or equivalence were collected in the United States Census. This variable was

calculated by anybody in the county that has a high school diploma or equivalence. The data level for this variable is ratio.

Median County Income

These data about the median household income in the county were collected from the United States Census. The data level for this variable is ratio. Median income was used as a statistic rather than mean income because it reduces the influence of outliers on the statistic.

SNAP Participation

SNAP participation percentage came from the Mississippi Department of Health's Annual Report (2016). This variable was calculated by counting the current recipients of the SNAP food benefits program. The reported quantities are reported in exact numbers but were converted into percentages because of the variances in county populations. The data level for this variable is ratio.

Data Collection & Procedures

Data about the amount of common were collected by the Mississippi State University Extension Services. Data were gathered from the measure two (Appendix I) and four (Appendix II) of the questionnaire about retail availability of fresh fruits and fresh vegetables. Demographic data came from the Census Bureau. Data about SNAP program came from the 2016 Mississippi Department of Health's Annual Report which gives a county map with the exact number of SNAP participants in each county. The survey was collected by Mississippi State University Extension professionals in the office of Nutrition Education . The survey was administered from January 25, 2017 to February

9, 2017. When collecting data about the amount of common, fresh, good-quality fruit, there was an 85% response rate. For the amount of common, fresh, good-quality vegetables, there was a 90% response rate.

Data Analysis

Research Question One

For research question one, the independent variable was the median county income and the dependent variable was the amount of common, fresh, good-quality fruits sold in the county. Because both of these variables are ratio level, the data analysis for this question was Pearson's r (r).

Research Question Two

For research question two, the independent variable was the median county income and the dependent variable was the amount of common, fresh, good quality vegetables sold in the county. Because both of these variables are ratio level, the data analysis for this question was Pearson's r (r).

Research Question Three

For research question three, the independent variable was the percentage of county participants in SNAP, while the dependent variable was the amount of common, fresh, good quality fruits sold in the county. Because both of these variables are ratio statistics, the data analysis for this question is Pearson's r (r).

Research Question Four

For research question four, the independent variable was the percentage of county participants in SNAP, while the dependent variable was the amount of fresh and good-

quality vegetables. Because both of these variables are ratio statistics, the data analysis for this question is Pearson's r (r).

Research Question Five

For research question five, the independent variable was the percentage of African Americans that live in each county and the dependent variable was the amount of available fresh, good quality fruits. For this research question, the variables are both ratio level, therefore the data analysis for this question is Pearson's (r)

Research Question Six

For research question six, the independent variable was the percentage of African Americans that live in each county and the dependent variable was the quantity of available fresh, good quality vegetables. For this research question, the amounts are both ratio level, therefore the data analysis for this question is Pearson's (r)

Research Question Seven

For research question seven, the independent variable was the percentage of high school dropouts and the dependent variable was the amount of common, fresh, good quality fruits sold in the county. Because this research question has interval and ratio level variables, the data analysis that was used is Pearson's r (r).

Research Question Eight

In research question eight, the independent variable was the amount of people who have a high school degree or equivalence in a county; the dependent variable was the amount of common, fresh, good quality vegetables sold in the county. Because this

research question compares interval and ratio level variables, the data analysis that was used is Pearson's r (r).

CHAPTER IV

RESULTS

Introduction

This chapter describes the data analysis and magnitude of correlations found in this study. The purpose of this study was to determine the correlations between demographic factors of counties in Mississippi and the amount of fresh, good quality fruits and vegetables that are sold in a county. Variables for this study include county median household income (income); county percentage of people with high school diplomas or GEDs (education); county percentage of people who receive SNAP benefits (SNAP); county African American percentage (AARace); the amount of common fresh, good quality fruits sold in a county (Fruit); and amount of common fresh, good quality vegetables sold in a county (vegetables). Table one shows a simplified version of the data used to create the variables. Table two shows the central tendencies of the variables, and table three shows the correlations found between the variables.

Table 1 Amount of common fresh, good quality fruits and vegetables sold in a county

County	Income	Education	SNAP	AARace	Fruit	Vegetable
Adams	\$28,869	80.7	21.4	53.3	9	8
Alcorn	\$36,163	80.8	15.1	12.6	8	8
Amite	\$30,704	74.6	17.7	40.5	7	7
Attala	\$32,886	76.8	20.5	42.5	8	8
Benton	\$33,141	76.8	22.8	36.3		
Bolivar	\$27,585	73.5	31.6	64.1	2	2
Calhoun	\$31,098	72.9	19.3	28.3	8	6
Carroll	\$37,289	78.9	14.8	33.5		
Chickasaw	\$30,926	72.2	21.5	44.1		10
Choctaw	\$30,926	72.2	21.5	44.1	10	9
Claiborne	\$23,259	78.1	37.1	84.6	10	9

Table 1 continued

County	Income	Education	SNAP	AARace	Fruit	Vegetable
Clarke	\$35,993	79.8	21.1	34.2	10	10
Clay	\$31,669	78.6	24.2	58.5	10	9
Coahoma	\$28,851	77.1	37.9	75.4	10	10
Copiah	\$33,150	79.5	23.1	51.4		10
Covington	\$31,631	78.6	19.8	36		
DeSoto	\$58,278	88.7	10.9	25.8	9	8
Forrest	\$36,416	84.8	18.8	37.3	10	10
Franklin	\$38,170	82.3	17.9	35.8		
George	\$44,258	80	17.4	8.6	10	8
Greene	\$40,176	74.3	16.3	25	7	7
Grenada	\$31,779	76.9	19.4	42.4	7	9
Hancock	\$43,355	84.3	15.4	8.7	8	9
Harrison	\$41,722	85.5	18.8	24.4	8	10
Hinds	\$37,324	85.8	23.2	71.1	9	10
Holmes	\$20,732	71.9	35.4	82	9	9
Humphreys	\$23,216	63.5	44.8	74.9	8	9
Issaquena	\$23,491	60.5	20	64		
Itawamba	\$35,004	79.8	12.3	7.1	7	10
Jackson	\$48,406	87.5	15.1	22.1	10	10
Jasper	\$31,578	78.9	18.8	52.4	9	10
Jefferson	\$20,743	76.6	30	84.8	7	2
Jefferson	\$26,279	79.9	21.6	59.3	9	9
Davis						
Jones	\$37,143	79.4	15.7	29.6	9	9
Kemper	\$30,056	76.8	18.9	60.9	7	6
Lafayette	\$44,643	89.2	8.4	23.9	9	9
Lamar	\$52,035	91.2	11.7	20.9	9	7
Lauderdale	\$38,132	85.7	19.4	43.2	10	10
Lawrence	\$35,634	79.3	20.4	31.9	7	8
Leake	\$33,452	75.4	17.4	41.8	9	10
Lee	\$42,784	83.9	15.2	29	10	10
Leflore	\$36,665	82.3	32.5	73.1	10	10
Lincoln	\$36,473	84.3	17.2	31.1		
Lowndes	\$40,239	83	20.6	44.2	10	9
Madison	\$64,376	89.8	14.8	38.4	10	10
Marion	\$30,668	76.7	18.1	32.7	9	10
Marshall	\$37,419	77.5	17.9	48	9	8
Monroe	\$36,783	77.1	17.5	30.7	9	8
Montgomery	\$30,146	73.2	21.7	45.6	6	9
Neshoba	\$35,645	77.7	23.9	21.6	9	10
Newton	\$37,045	82.5	17.1	30.6	7	6
Noxubee	\$26,677	65.3	34.9	71.43	9	8

Table 1. Continued

County	Income	Education	SNAP	AARace	Fruit	Vegetable
Oktibbeha	\$32,485	86.2	15.2	37.1	9	7
Panola	\$36,555	80.5	24.4	49.9	10	10
Pearl River	\$40,976	82	18.6	12.9	9	10
Perry	\$34,045	82	17.9	20.3	7	5
Pike	\$31,677	80.5	24.9	52.9	10	10
Pontotoc	\$40,645	77.4	15.1	15.8	10	9
Prentiss	\$32,954	76.2	14.2	14.3	9	7
Quitman	\$24,583	67.4	32.3	69.6	3	2
Rankin	\$58,801	89.7	8.7	20.5	9	8
Scott	\$32,935	71	20.4	38.1	10	10
Sharkey	\$30,525	77.5	38.5	69.7	3	
Simpson	\$35,375	79.6	18.4	35.7	9	8
Smith	\$32,951	81.5	14.5	23.4		
Stone	\$45,035	83.6	14.1	19.7		
Sunflower	\$27,384	71.4	32.5	73	6	8
Tallahatchie	\$29,731	64.1	22.1	56.3	6	7
Tate	\$42,880	79.8	16.3	31.4	8	10
Tippah	\$35,609	75.1	16.4	16.6	8	10
Tishomingo	\$35,143	77.1	10.3	2.8	7	9
Tunica	\$31,211	76.2	43.3	75.7	8	7
Union	\$35,865	76.2	11.9	15.2	10	6
Walthall	\$31,384	78.2	18.5	43.6	10	10
Warren	\$41,121	86	22.1	48.4	8	9
Washington	\$29,144	76.8	36.8	71.4	9	9
Wayne	\$32,557	76.6	24.4	39.7	6	8
Webster	\$39,665	82.3	20	19.4	9	
Wilkinson	\$29,931	70.9	25.1	70	9	8
Winston	\$33,202	77.6	19.9	46.5	7	10
Yalobusha	\$36,502	78.3	21	38.9	3	3
Yazoo	\$28,961	75.5	28.2	57.4		1

Table 2 Descriptive Statistics

Variable	N	M	SD
County median household income	82	\$ 35,133.10	7,701.92
County percentage of residents of high school diplomas or GEDs	82	78.53%	5.87
County Percentages of residents who receive SNAP benefits	82	21.16%	7.60
County percentages of African American residents	82	41.46%	20.40
Amount of common fresh, good quality fruits sold in a county.	82	8.30	1.80
Amount of common fresh, good quality vegetables sold in a county.	82	8.25	2.13

Table 3 Correlation Matrix

Variable	1	2	3	4	5	6
1. County median household income	-					
2. County percentage of people with high school diplomas or GEDs	0.74	-				
3. County percentage of people who receive SNAP benefits	-0.62	-0.50	-			
4. County African American percentage	-0.61	-0.44	0.83	-		
5. The amount of common fresh, good quality fruits sold in a county	0.28	0.34	-0.22	-0.15	-	
6. The amount of common fresh, good quality vegetables sold in a county	0.25	0.25	-0.16	-0.17	0.69	-

Research Questions and Analysis

Research Question One

What is the correlation between median county income and the amount of common, fresh, good quality fruits sold in the county?

This question was investigated using Pearson's r (r). This was to find the correlation between the two ratio level variables, county median household income and the amount of common, fresh, good quality fruits available to purchase in a county. The correlation between these two variables was 0.28, a positive correlation of a moderate magnitude (Davis, 1971).

Research Question Two

What is the correlation between median county income and the amount of common, fresh, good quality vegetables sold in the county?

This question was investigated using Pearson's r (r). This was used to find the correlation between the two ratio level variables, including county median household income and the amount of common, fresh, good quality vegetables available to purchase in a county. The correlation between these two variables was 0.25, a positive correlation of a low magnitude (Davis, 1971).

Research Question Three

What is the correlation between counties' percent of participants in SNAP and the amount of common, fresh, good quality fruits sold in the county?

This question was investigated using Pearson's r (r). This found the correlation between the two ratio level variables, percentage of people in a county who receive SNAP benefits and the amount of common, fresh, good quality fruits available to purchase in a county. The correlation between these two variables was -0.22, a negative correlation of a low magnitude (Davis, 1971).

Research Question Four

What is the correlation between counties' quantity of participants in SNAP and the amount of common, fresh, good quality vegetables sold in the county?

This question was investigated using Pearson's r (r). This was to find the correlation between the two ratio level variables, percentage of people in a county who receive SNAP benefits and the amount of common, fresh, good quality vegetables available to purchase in a county. The correlation between these two variables was -0.16, a negative correlation of a low magnitude (Davis, 1971).

Research Question Five

What is the correlation between the percentages of African Americans in a county and the amount of common, fresh, good quality fruits sold in the county?

This question was investigated using Pearson's r (r). This was to find the correlation between the two ratio level variables, the percentage of African Americans that live in a county and the amount of common fresh, good, quality fruits available to purchase in a county. The correlation between these two variables was -0.15, a negative correlation of a low magnitude (Davis, 1971).

Research Question Six

What is the correlation between the percentage of African American residents of a county and the amount of common, fresh, good quality vegetables sold in the county?

This question was investigated using Pearson's r (r). It found the correlation between the two ratio level variables, the percentage of African Americans that live in a county and the amount of common, fresh, good quality vegetables available to purchase in a county. The correlation between these two variables was -0.17, a negative correlation of a low magnitude (Davis, 1971).

Research Question Seven

What is the correlation between the quantity of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality fruits sold in the county?

This question was investigated using Pearson's r (r). This helped find the correlation between the two ratio level variables, the percentages of people in each county that have a high school diploma or GED and the amount of common, fresh, good quality fruits available to purchase in a county. The correlation between these two variables is 0.34, a positive correlation of a moderate magnitude (Davis, 1971).

Research Question Eight

What is the correlation between the quantity of people in a county who have a high school degree or equivalence and the amount of common, fresh, good quality vegetables sold in the county?

This question was investigated using Pearson's r (r). This question found the correlation between the two ratio level variables, including the percentages of people in each county that have a high school diploma or GED and the amount of common, fresh, good quality vegetables available to purchase in a county. The correlation between these two variables was 0.25, a positive correlation of a low magnitude (Davis, 1971).

Summary

This chapter illustrates the relations between every variable mentioned in the research questions. Research questions one and seven both had positive, moderate magnitude correlations. Research question six focused on the only negative, moderate magnitude correlation. The low magnitude positive correlations were between the variables mentioned in research questions two and eight. Lastly, the negative, low magnitude correlations include those mentioned in research questions three, four and five.

CHAPTER V

CONCLUSIONS

Introduction

This chapter summarizes the data analysis discussed in chapter four. This chapter also provides discussions for eight research questions. Each question addresses the correlations between demographic characteristics on a Mississippi county and how they correlate with the amount of common fruits and vegetables available to purchase in a county. The demographic variables of counties used in this research include the median county income, the county percentage of people with high school diplomas or GEDs, county percentage of people who receive SNAP benefits, and the percentage of African Americans that live in a county. Food availability was measured as amount of common, fresh, good quality fruits available to purchase in a county and amount of common, fresh, good quality vegetables available to purchase in a county.

Discussion

Research Question One

The correlation between the median county income and amount of fresh, good quality fruits was 0.28. This correlation means that as county median household income increases, the amount of common, fresh, good quality fruits available to purchase in a county increases as well. This correlation was predicted in the literature when a study showed how low incomes areas are commonly associated with lower rates of fresh fruits and vegetables such as the study done on food accessibility in Chicago (Suarez-Balcazar et al., 2006). This correlation is also influenced by the increased amount of convenience

stores that are located in lower income areas, thus impacting the demand for fresher, good quality foods (Dia & Wang, 2011).

Research Question Two

The correlation between county median household income and the amount of fresh, good quality vegetables available to purchase in a county was 0.25. This correlation means that as county median household income increases, the amount of common, fresh, good quality vegetables available to purchase in a county increases. The same literature that supported research question one supports research question two. These variables also had similar correlations, and also had a low magnitude, positive correlation (Davis, 1971).

Research Question Three

In question three, the correlation was between percentage of county residents who receive SNAP benefits and the amount fresh fruits available for purchase in a county. This variable had a negative, low magnitude correlation of -0.22 (Davis, 1971). This correlation means that as percentage of people in a county who receive SNAP benefits increases, the amount of common, fresh, good quality fruits available to purchase in a county decreases.

This was predicted since SNAP is used to help low income people, and counties with lower incomes have a lower level of food accessibility. The relationship between percentage of county residents who receive SNAP benefits and the median county income is a negative very high magnitude correlation of -0.62 (Davis, 1971).

Research Question Four

The correlation between percentage of county residents who receive SNAP benefits and the amount of fresh vegetables available for purchase in a county was -0.16. This negative, low magnitude correlation means that as percentage of people in a county who receive SNAP benefits increases, the amount of common, fresh, good quality vegetables available to purchase in a county decreases. The justification for research question three applies to this question as well.

Research Question Five

The correlation between the percentage of African Americans in a county and the amount of fruits available to purchase in a county was -0.15. This negative, low level correlation means that as the percentage of African Americans that live in a county increases, the amount of common, fresh, good quality vegetables available to purchase in a county decreases. Several articles have mentioned how African Americans are commonly associated with low food accessibility. The county percentages of African Americans are also positively correlated with factors that are associated with low food accessibility. For example, in Mississippi, the percentage of African Americans in a county and county percentage of people who receive SNAP benefit have a very high magnitude correlation of 0.83 (Davis, 1971). The African Americans percentages are also associated with lower median incomes, which impacts the amount of food accessibility of a county.

Research Question Six

The correlation between the percentage of African Americans in a county and the amount of vegetables available to purchase in a county is -0.17. This negative, low magnitude correlation means that as the percentage of African Americans in a county increases, the amount fresh vegetables available for purchase in a county decreases. The justification of this correlation is the same as it was for research question five. The African Americans percentages are also associated with lower median incomes, which impacts the amount of food accessibility of a county.

Research Question Seven

The correlation between the county percentage of people with high school diplomas or GEDs, and the amount fresh fruits available for purchase in a county was 0.34. This positive, moderate correlation means that as the percentage of people in each county that have a high school diploma or GED increases, the amount of common fresh good quality fruits available to purchase in a county increases. Literature has talked about how food deserts are commonly associated with lower county percentage of people with high school diplomas or GED (Dia & Wang, 2011).

Research Question Eight

The correlation between the county percentage of people with high school diplomas or GEDs, and the amount fresh vegetables available for purchase in a county was 0.25. This low magnitude positive correlation means that as the percentage of people in each county that have a high school diploma or GED increases, the amount of common, fresh, good quality vegetables available to purchase in a county increases. The

literature that predicted this correlation is the same literature that suggested the correlation in research question six.

Limitations

The population of this study included the 82 Mississippi counties. On the other hand, when collecting data, some counties did not respond to the survey. For the amount of fresh fruits available for purchase in a county, this study is missing data for Benton County, Carroll County, Copiah County, Covington County, Desoto County, Forrest County, Franklin County, Issaquena County, Lincoln County, Smith County, Stone County, and Webster County. For the amount of fresh vegetables available for purchase in a county, the counties that did not complete the survey includes, Benton County, Carroll County, Choctaw County, Franklin County, Issaquena County, Lincoln County, Smith County, and Webster County.

Since this is a correlational study, these conclusions are not to be interpreted that the specific demographic factors are associated with the levels of food accessibility for every individual resident of the county. This research can give an idea of food accessibility in Mississippi, but it does not account for people who live in counties with low food accessibility that can simply travel to neighboring counties where food accessibility is higher. Because Mississippi has an agriculture-driven economy, common fruits and common vegetables were not as accurate as others. In Mississippi, there are several ways of acquiring produce other than purchasing from official vendors. For example, in many of the rural areas, road side vendors are a normal occurrence. This may have skewed the results of this study.

Another justification for the lack of magnitude of the correlations is that variables were defined as total “common” fruits and vegetables, and many of the participants in the survey had other fruits and vegetables. These could not be included because it was impossible to determine the freshness and quality of the fruits and vegetables that were listed by participants. Another limitation of this study was the consideration of how it is more convenient for residents to have a can of vegetables in their cabinet than having fresh vegetables in their possession. Lastly, because of the seasonal availability of some fruits and vegetables, the variables five and six may have been skewed. For example, the data were collected in February, a time where fruits such as watermelons and peaches are not as abundant as they are in the summer.

Recommendations

This study provides information that makes it evident demographic factors have correlations with the food accessibility in Mississippi counties. The results of the research can lead to the placement of better quality foods in Mississippi counties with higher African American populations, as well as counties with lower median county incomes, lower percentages of people with high school diplomas or equivalency, and counties with higher percentages of people who receive SNAP benefits. In addition to the measures used, there is a need for a better measure of the variables that describe the availability of fruits and vegetables.

Extension agents play a significant role in the accessibility of fresh fruit and vegetables in both communities that lack food availability and communities that have an oasis of fresh fruits and vegetables. One of Extension’s primary methods of increasing food availability in communities is through development of farmers’ markets. Extension

agents also teach classes about the benefits of fresh food and food preparation classes to create a higher demand for fresher produce in certain areas. When teaching classes about the benefits of farmers' market, the most significant benefits that should be taught include the heightened quality of the farmers' market products, the variety of the goods, and the price of the farmers' market products (Govindasamy, Italia, & Adelaja, 2002).

As stated earlier, the data from this research give an idea of where the supply of fresh food is low, and naturally, when supply decreases, demand increases. According to Hughes and Mattson (1995), several tests have shown how people prefer the taste of farmers' market produce compared to that of their average food retailers. Extension agents should use the comparison in taste to promote farmers' market products to counties that experience the worst food insecurity. When Extension agents go into these counties to market farmers' markets, research has shown that the three most effective methods of advertising for farmers' markets are roadside signs, newspapers, and word of mouth (Govindasamy et al., 2002). In some food deserts, the accessibility of fresh fruits and vegetables decreases because of the influx of convenience stores. Since the fruits and vegetables available at these stores are more convenient, the demand for fresher fruits and vegetables is not as high.

One of the most commonly mentioned reasons that people do not shop at farmers' markets is because they are not convenient enough. This is helped by the development of mobile farmers' markets (Bruhn et al., 1992; Connell et al., 1986; Eastwood et al., 1995; Hughes & Mattson, 1995; Kezis et al., 1984; Lockertz, 1986). If Extension agencies would work with farmers' markets to make them more convenient, the accessibility of fresh foods in these communities may increase. For example, in counties where

accessibility is little, Extension agents organize farmers' markets that are conveniently placed and open at times that are suitable for the demographic of people that are in the community.

The people that experience the least amount of food accessibility are also the least likely to consult with Extension agencies. Because of this, Extension agencies must take a proactive approach in helping to develop farmers' markets in these underprivileged areas. Extension agents should sell to these demographics by using effective rhetoric to illustrate the benefits of buying from farmers' markets. According to Abel, Thomson & Maretzki (1999), consumer benefits of farmers' markets include the availability of the freshest possible produce, knowledge of people who provide the food, better tasting food, and the variety of foods that are available to purchase.

The results of this study can also be used to help Extension agents in the development of mobile farmers' markets. The development of mobile farmers' markets is a newer approach to help aid in the food accessibility of places that experience food insecurity, especially when these areas are associated with low-income customers (Monaghan, Watie, Dinkins, Johns, Swisher & DeLong, 2015). Income has a positive correlation with the accessibility of fresh food, and usually lower income is associated with fewer means of transportation; this causes people to depend more on convenience stores for groceries thus stated earlier, these farmers' markets should be strategically placed (Monaghan et al., 2015; Morton & Blanchard, 2007).

An example of a successful farmers' market strategically placed is the farmers' market in South Chicago (Suarez-Balcazar et al., 2006). It showed how transportation and the influx of convenience stores is a cause of food accessibility for fresh fruits and

vegetables in some communities. If Extension agencies utilize this data to determine food deserts in Mississippi, they can start to plan tours for mobile farmers' markets depending on the income of the counties they plan to visit (Monaghan et al., 2015). According to the data, there is a negative correlation between the percentage of people who receive SNAP benefits and food accessibility in a county.

Using the data described in chapter four, Extension agents should begin to implement a way for farmers' markets to be able to accept SNAP benefits, utilizing electronic benefit transfer machines (Parsons & Morales, 2013). The placement of these machines in farmers' markets can cause the demand for these goods to increase because people have more means of buying the fresh fruits and vegetables (Parsons & Morales, 2013). Lastly, when Extension agents are planning farmers' markets, they should consider the appearance of the facility, where the farmers' market is held, the convenience of the location, the attitudes of the employees, the cleanliness of the facility, and the availability of parking (even though transportation is sometimes not as abundant in areas where food accessibility is lower) (Dai & Wang, 2011; Govindasamy et al., 2002).

When talking about SNAP and SNAP-Ed, different initiatives can be used to weaken the barriers for people who experience food insecurity (Misyak et al., 2015). The goal of the SNAP-Ed program is to teach those with limited-resources to make healthier food choices (Misyak et al., 2015). The literature review contained research that stated that low-income residents usually do not prefer fresher food options (Misyak et al., 2015). There was also another article that talked about how Extension agents have gone into communities in Virginia to teach low income mothers how to prepare fresher foods

making them more likely to change their food shopping habits (Misyak et al., 2015). As stated in chapter one, SNAP-Ed is a government-based program used to educate people on healthier practices when using SNAP benefits. Activities held by this program usually come in the form of nutrition education classes. SNAP-Ed is influential in the improvement of policies that better the environment of the communities that experience low accessibility. These SNAP-Ed workers will also be able to use this information to get an idea of what areas are more likely to use their services.

Increasing the food accessibility in these communities can be improved by going to communities that have a high percentage of demographics that correlate with low food availability, along with syncing with the schedules of the people who live in these communities (Misyak et al., 2015). While visiting these communities, Extension agents should teach communities to prepare foods sold at farmer markets, how to add products to diets, reading nutrition labels, understanding portion sizes, and encourage more people to move during the day (Misyak et al., 2015). Research has shown how these types of lessons can lead to an increase in the demand of fresher foods, along with the acceptance of SNAP benefits at these food vendors (Misyak et al., 2015).

Concerns

Response Bias

There are several counties that failed to respond to the survey. When collecting data for variable five (availability of common fresh fruits to purchase in a county), only 85.37% of Mississippi counties responded to the survey. On the other hand, when collecting the data for variable six (availability of fresh vegetables available to purchase in a county), only 90.24% of Mississippi counties responded to the survey. The counties

that did not respond to the survey also had relatively low incomes, which can be considered response bias. With the exception of Stone County, counties that did not respond to the survey with lower incomes included Smith County, Covington County, Franklin County, Issaquena County, and Lincoln County. Because income is commonly related to the availability of fresh food, this may have impacted the magnitude of some of the correlations mentioned in this research. Additionally, in some cases, the survey questions may have been misunderstood.

Measurements of Fruit and Vegetable Availability

The questionnaire that was used to collect data for this study may have impacted the accuracy of the correlations found in this study. The checkboxes on the questionnaires only allowed counties to report the availability of commonly purchased fruits and vegetables. There were more than 10 fruits and vegetables available to purchase in each county, but the quality could not be determined.

Population

Due to the availability of the data, the accuracy of this research is limited to the population of 82 counties. The population is a limitation because it does not consider how modern transportation impacts food accessibility. For example, people in rural communities, where income is generally lower, can likely just drive to a place where food is sold. People that live in urban areas can simply use public transportation. Since the population includes Mississippi counties, the study cannot account for the people who live in areas where it is more convenient to drive to other counties to buy produce.

Conclusions

This examination of the correlations that demographic factors have with the accessibility of fresh, good quality foods led to the conclusion that it is possible that demographic factors have an impact on the amount of fresh food available to purchase in counties in Mississippi. Demographic factors also have correlations to each other; the strongest correlation was between percentages of African Americans in a county had with the amount of people in a county who receive SNAP benefits. Several of these correlations were predicted by the literature. The implications of this study are that there may be a demand for fresher foods in areas where the African American population is higher, the county median incomes are lower, and the high school and GED percentage is lower.

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APPENDIX A

MEASURE 2 OF THE MISSISSIPPI STATE UNIVEIRSITY EXTENSION RETAIL
SURVEY

**Measure 2
Fruit**

Is fresh fruit sold at this store? Yes No

Produce Type	Available		Price	Number	Unit		Quality		Comments
	Yes	No			size or pound	good or bad			
1. Bananas	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
2. Apples									
<input type="radio"/> Red Delicious	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
3. Oranges									
<input type="radio"/> Navel	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
4. Grapes									
<input type="radio"/> Red Seedless	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
5. Cantaloupe	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
6. Peaches	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
7. Strawberries	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
8. Honeydew melon	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
9. Watermelon									
<input type="radio"/> Seedless	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
10. Pears									
<input type="radio"/> Anjou	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

11. Total types (count the number of "yes" responses):

12. Are other fresh fruits available? If so, list them. Yes No

APPENDIX B

MEASURE 4 OF THE MISSISSIPPI STATE UNIVEIRSITY EXTENSION RETAIL
SURVEY

**Measure 4
Vegetables**

Are fresh vegetables sold at this store? Yes No

Produce Type	Available		Price	Number	Unit <small>piece or pound</small>	Quality		Comments	
	Yes	No				good	or bad		
1. Carrots									
(not baby)									
<input type="radio"/> 1-lb bag	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
2. Tomatoes									
<input type="radio"/> Loose	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
3. Sweet peppers									
<input type="radio"/> Green bell	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
4. Broccoli									
<input type="radio"/> Bunch	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
5. Lettuce									
<input type="radio"/> Green leaf	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> 6. Corn	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> 7. Celery	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> 8. Cucumbers	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
9. Cabbage									
<input type="radio"/> Head	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> Alternate	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
<input type="radio"/> 10. Cauliflower	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____