

A MULTIPLE CASE STUDY OF THREE MOBILE FARMER'S MARKETS IN GEORGIA

by

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(Under the Direction of Jason Peake)

ABSTRACT

In an effort to combat food deserts, Mobile Farmer's Markets have been introduced by both private and public operators as a viable means to reduce obesity and poor health by increasing the availability of fresh produce. Mobile Farmer's Markets offer fresh fruits and vegetables along with the ability to travel creating close produce proximity for customers located within food deserts. Due to the recent implementation and popularity of Mobile Farmer's Markets across America there are very few established methods of managing, operating, funding, and sustaining a Mobile Farmer's Market. With the overarching intent of creating a healthier society by increasing fruit and vegetable consumption this study sought to discover and record the practices implemented by established Mobile Farmer's Markets in Georgia by performing a multiple case study. This study found that the three mobile farmer's markets shared five common barriers of time, cost, education, location and convenience.

INDEX WORDS: Mobile Farmer's Market, Food Distribution, Diffusion of Innovation, and Food Deserts

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DEDICATION

To Dr. Pritchard for his ability to kindle purposeful creativity

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CHAPTER 1

INTRODUCTION

Concerned with the onset of American obesity and poor health, the First Lady, Michelle Obama mainstreamed the term “food desert” in order to familiarize society regarding the lack of fresh fruits and vegetables available throughout the United States. According to the United States Department of Agriculture, Ploeg (2009) states:

a food desert on the county level is defined as an area where at least 33% of the population, or a minimum of 500 people live more than a mile from a grocery store or large supermarket in an urban area, or more than ten miles away in a rural area. (p.11)

In an effort to combat food deserts, mobile farmer’s markets have been introduced by both private and public operators as a viable means to reduce obesity and poor health by increasing the availability of fresh produce (Blackburn, 2010). Mobile farmer’s markets offer fresh fruits and vegetables along with the ability to travel, creating close produce proximity for customers located within food deserts. As a result of the recent implementation and popularity of mobile farmer’s markets across America there are very few established methods of managing, operating, funding, and sustaining a mobile farmer’s market.

With the overarching intent of creating a healthier society by increasing fruit and vegetable consumption this study seeks to discover and record the established practices

implemented by established mobile farmer's markets in Georgia by performing a multiple case study.

People in the United States are purchasing and eating meals outside of the home an average of four times a week (Centers for Disease Control and Prevention [CDC], 2013). The food people consume when eating outside the home tends to be less healthy (Cutler, 2003). The CDC (2013) stated "In 1996, 26% of the money spent on food in the United States was on food eaten away from home, and by 2011 that number had jumped to nearly half" (para.3).

The food we are eating has evolved for two main reason, cost and convenience. Fats, refined grains and sweets cost less and minimal preparation is needed before serving, therefore consumers allow these energy dense processed foods to become the majority of their diet (Drewnowski,2005). In order to meet the demand of a busy life style, the food industry has adapted to serve the consumer. A meal for four can be obtained with one simple phone call or ordering at a drive through. Fast food chains and retailer marts have capitalized on convenience acting as a lure for precooked meals and processed snacks (Jekanowski, 2001). Having snacks and meals supplemented with additives researched to promote freshness encourages a long shelf life, whereas the shelf life of fresh produce is limited. Packing a child's lunch is quicker when selecting prepackaged snacks rather than baking homemade goods from scratch.

The second driver of the fast food life is cost. It is monetarily cheaper for both the producer and the consumer to rely on fast food corporations, processed snacks and prepackaged meals all containing high amounts of refined grain, fats and sweets, as the main provider for our daily meals (Drewnowski,2005). Production costs are cheaper due to technological advances. For example Rifkin (1996) states, "robots are being developed with artificial intelligence to plow and plant fields, feed dairy cows...Researchers predict that the fully automated factory farm is less

than 20 years away” (p.117). Mass quantities are being produced and assembled on factory like conveyor belts which reduces preparation time ultimately cutting the cost by lowering the need for multiple employees. Waste is remarkably less because the longevity of prepackaged meals, fast food, and processed snacks is notable.

Throughout the twentieth century farming has been industrialized. Factory farms maximize production by using feedlots for beef, confinement operations for pork and poultry to produce mass quantities where animals are fed corn based feed. The meat is then processed and supplemented with fillers such as corn (Finkelstein, 2010). Corn, after undergoing manipulation, is being used as filler in meats and acts as the main ingredient to processed foods (Jahren, 2008). Having meat enhanced with fillers creates additional meat product available for sale to grocery marts and fast food franchises (Schlosser, 2004).

Grocery stores and fast food retailers have created consumer recognition of processed snacks and food, rather than nutritional whole foods, as a typical meal due to the multi-billion dollar industry of marketing (Seiders, 2004). Food industry developers are selective, considering characteristics such as socioeconomic status of communities, when choosing the building location of future fast food franchise and super marts (Smoyer-Tomic, 2008). In efforts to obtain profitably as any sustainable business plan would recommend, fast food franchises and super marts are not evenly distributed throughout states, cities and neighborhoods, but rather positioned in areas predicted to turn a profit limiting the access to food, let alone, nutritional food (Thomadsen, 2007). Unprofitable areas are plagued with a minimal selection of poor quality processed meals and snacks, as well as inadequate access to nutritional foods. This phenomenon of limited access to affordable and nutritional food based on geographic composition is defined as a food desert (Freeman, 2007).

By virtue of industrialized farming, processed foods, fast food franchises and food deserts people have lost connection and access to fresh, affordable and nutritious foods. As a result of society's disconnected relationship with fresh, affordable and nutritional food, obesity and diet related diseases have increased tremendously affecting the health of both adults and children (Srinivasan, 2003). In effort to combat food deserts and redefine the relationship with fresh, affordable and nutritional food mobile farmer's markets have been established. Mobile farmer's markets have been introduced as a viable means to reduce obesity and poor health by increasing the availability of fresh produce. Mobile farmer's markets offer fresh fruits and vegetables along with the ability to travel, creating close produce proximity for customers located within food deserts (Brown, 2008). However, little information is known about mobile farmer's market logistics. Therefore this study sought to record practices from three operating mobile farmer's markets.

Significance of the Study

This study will contribute to the knowledge base by examining alternative methods, such as a mobile farmer's market, these markets may reduce obesity and increase consumption of fruits and vegetables. By performing a multiple case study on three mobile farmer's markets the researcher will discover and record the practices implemented by three Georgia mobile farmer's markets. This research will provide a foundational understanding of mobile farmer's markets as an alternative form of preventative health care as a result of improved environment.

Statement of the Problem

Obesity has become an epidemic negatively affecting both children and adults. Lavizzo-Mourey (2003) states, "50 percent of Americans are on track to be obese in the next 20 years.

Obesity could even top 60 percent in 13 states” (para.7). Unless daily dietary intake is reconstructed to provide consumers with fresh, affordable nutritious food, the future of personal health and vitality is at risk (Mokdad, 2000). Researching mobile farmer’s markets will provide credible information regarding alternatives to offsetting obesity and other diet related diseases. Can mobile farmer’s markets stem the tide of obesity that is sweeping our nation?

A lack of information makes it difficult for new farmers’ markets to start, operate, and succeed. This study examines the barriers and characteristics of mobile farmers’ markets so that best practices can be shared with those interested in enhancing their own farmer’s markets or starting one from scratch. Performing a multiple case study of the three mobile farmers’ markets in Georgia will allow for credible information to be brought forth, acting as foundational literature creating the mobile farmers’ market cannon. Ultimately this study seeks to further the limited knowledge base of mobile farmers’ markets by providing a thick description of the goals, barriers and key elements related to three individual mobile farmers’ markets in Georgia. After this study is complete, the characteristics of these three mobile farmer’s markets will be shared so that other, similar efforts to combat food deserts can be implemented.

Purpose of the Study

The purpose of this study was to determine the characteristics of three Georgia mobile farmer’s markets. Due to the recent implementation and popularity of mobile farmer’s markets across America there are very few established methods of managing, operating, funding, and sustaining a mobile farmer’s market. With the overarching intent of creating a healthier society by increasing fruit and vegetable consumption by categorizing characteristics of successful mobile farmers’ markets as models for future mobile farmer’s markets, this study seeks to

discover and record the established practices implemented by established mobile farmer's markets in Georgia by performing a multiple case study.

Assumptions

1. Mobile Farmer's Markets desire to reach all areas of race, education and income.
2. Mobile Farmer's Markets operators will be honest and forthcoming with information.
3. Mobile Farmer's Markets desire to be sustainable.
4. Increasing nutritionally dense foods like fruits and vegetables will decrease obesity and improve overall health.

Definitions

- Food Desert- an area where at least 33% of the population, or a minimum of 500 people live more than a mile from a grocery store or large supermarket in an urban area, or more than ten miles away in a rural area.
- Feed Lot-an area or building where livestock are fed or fattened up.
- Obesity- an abnormal accumulation of body fat, usually 20% or more over an individual's ideal body weight. Obesity is associated with increased risk of illness, disability, and death (Dorland's Medical Dictionary, 2007).
- Industrialized Farming- the process of raising livestock in confinement at high stocking density.
- Processed Food-commercially prepared food designed for ease of consumption.
- Whole Food-food that has been processed or refined as little as possible and is free from additives or artificial substances.

- Farmer's Market-an open-air marketplace for farm products.
- Mobile Farmer's Market – a fresh local whole produce and protein market with wheels allowing mobility, excluding pop up stands and fruit trucks.

Limitations

1. This is a qualitative study which examines three mobile farmer's markets in depth. As such the findings of this study should not be generalized beyond these three farmer's markets.
2. No evaluations have been performed by the market operators to see if their patrons have improved health. Therefore one limitation of this study is that only market operators were studied and not the patrons.

CHAPTER 2

LITERATURE REVIEW

Introduction

Concerned with the negative and costly implications of obesity, Congress under the Food, Conservation, and Energy Act of 2008, known as the Farm Bill 2008, requested that the United States Department of Agriculture (USDA) conduct a one year study examining obesity related to limited food access, which verified existing links between obesity and limited food access (Johnson, 2008). Ploeg (2009) reported:

A primary concern is that some poor or rural areas do not have access to super markets, grocery stores, or other food retailers that offer the large variety of foods needed for a healthy diet. For example, fresh fruits and vegetables, whole grains, fresh dairy and meat products. (p.11)

The areas of limited affordable and nutritional food access have been named food deserts. The Rural Sociological Society identified 418 of the 3,143 counties in the United States as food deserts (Ploeg, 2009). The 2008 Farm Bill defined a food desert as “an area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities” (Johnson, 2008, para.9).

National Impact

Whether living in a food desert or not, obesity is a rapidly growing condition throughout the entire United States (Salinsky, 2003). Obesity, pertaining to more than one third of U.S. adults (35.7%) is a preventable condition accruing an estimated \$147 billion in medical costs during 2008 (Ogden, 2012). The Center for Disease Control and Prevention literature highlights the onset of obesity, providing an overview of how obesity affects health, “Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer, some of the leading causes of preventable death” (Ogden,2012).

Dr. Raymond Moreno with Affinity Health Group stated, “We spend a lot of money treating obesity-related diseases, but not nearly as much in trying to prevent obesity-related diseases” (Moreno, 2013). Shifting American culture from the treatment of obesity-related disease to prevention of obesity-related diseases starts with individual communities at the grassroots level along with national initiatives (Moreno, 2013). Along with targeting obesity on a grassroots level, Doctor John Frey advises prevention vs. treatment of obesity must be supported by national policy. Frey (2008) states:

Changing a culture is a slow process, changing factors such as poverty, neighborhood safety, and the influence of advertising-all of which have been shown to heavily influence the prevalence of obesity-are reasons for a national approach to causes as well as effects of obesity. (p.221)

Creating a culture shift from treatment to prevention can be encouraged at the grassroots level with initial support and implementation of public policy.

Richard Lowry (2002) writes, “For positive changes in physical activity and dietary behaviors to occur, other strategies including broad-based community efforts are needed” (p.

420). Food environments need to be redeveloped providing patrons with the opportunity to afford and consume nutritional food (Gereffi, 2009). By offering affordable and convenient access, a food environment has the ability to encourage the consumption of fresh local produce and protein hopefully resulting with improved health of the community due to improved dietary conditions (Huang, 2009).

Marketing

Frequency and exposure has an effect on what people consume. However, frequency and exposure is persuaded by the availability and accessibility of foods (Jamelske, 2008). Erin Mader (2011) conducted the study, *Hungry in the Heartland: Using Community Food Systems as a Strategy to Reduce Rural Food Deserts* and found:

Scientific evidence demonstrates that individuals who live in supportive nutrition environments rich in a variety of fresh, nutritious, affordable, and accessible foods such as fresh fruits and vegetables, are healthier: they have better diets and health outcomes, including lower rates of diabetes, obesity, cardiovascular disease, and other chronic illnesses. (p.46)

Before people can choose healthy food in efforts to prevent obesity there must be healthy food available. “It is important to recognize that the disparities in obesity are also associated with disparate access to the structures necessary to make healthy choices” (Baker et al, 2006, p.202).

Direct Access

Creating direct access to affordable and nutritional foods is necessary for individuals to make the decision to eat healthy food in efforts to prevent obesity (Ver Ploeg, 2010). Multiple

benefits arise for not only the consumer but also the supplier by implementing an option for direct purchase of affordable and nutritious food. Eliminating retailers as the middleman, farmers are able to reduce overhead cost and receive higher monetary return as a result of lowering the need for packaging, handling and transport. Direct sales from farmer to customer are an important practice enabling price control, for both producer and consumer (Mother Nature Network Farmers Markets News, [MNNFM], 2013).

Alternative Methods

One strategy for providing communities with affordable and nutritious food is by starting a community garden. A community garden is an alternative method of prevention related health care. Introducing affordable fresh produce local food environments are altered. For example, The St. Louis Garden of Eden, community garden was created to provide access to fresh affordable fruits and vegetables to the low income African American communities surrounding the garden (Morgan-Smith, 2007).

Indiana University Health has partnered with Green B.E.A.N. Delivery (Biodynamic, Education, Agriculture, Nutrition) to provide local access to affordable and nutritious food. Together they created a mobile farmer's market housed from the back of a delivery truck, named Garden on the Go (GOTG). Making full use of GOTG's biggest asset, mobility, the truck makes "16 weekly stops in community centers, libraries, neighborhood health centers and senior centers" (Howell, 2012, p. 20).

Similar to the design of Garden on the Go, the Weld Food bank received grant money of \$125,000 to purchase a truck needed to create a mobile food pantry. "With this grant from Kraft we will be able to purchase a truck capable of delivering fresh produce, dairy, meat, bakery and

dry goods directly to distribution sites where people need food, stated Bob O'Connor, Weld Food Bank interim executive director, "We plan to make deliveries throughout the county six times a week"(Greeley Tribune, 2012, p. 1).

Despite the strategy used to provide communities with affordable and nutritious food, two key components are needed to ensure success. First, the method of provision must be sustainable ensuring longevity and dependability of consumers. Second, the stakeholders of the strategy must be local creating community ownership (Power, 1999). Referring to the Garden of Eden Program, Smith states, "An important feature of the project was its design to maximize sustainability and community ownership"(Morgan-Smith, 2007, p. 202).

Theoretical Framework

The theoretical framework guiding this study is Rogers' Diffusion of Innovation. Ultimately mobile farmers markets are an idea (innovation) brought forth within a community to either be rejected or adopted. Rogers' theory defines determinate benchmarks needed to assess rates of diffusion of an innovation. He defines diffusion as "the process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas" (Rogers, 2003, p. 5). It is a special process for an innovation to seep through all socioeconomic levels of a community. An innovation is defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). A traveling meat and produce stand is an ancient practice designed by the first farmer wanting to sell his product in the market place where customers gathered. However, mobile farmer's markets are considered an

innovation because the idea of creating local access to fresh affordable produce and protein not inside a retail vendor is new to most communities throughout the United States.

According to Rogers, when an individual considers adopting or rejecting an innovation five characteristics are studied by the individual to consider if the innovation is worth adopting. First, the innovation must have a relative advantage, “the degree to which an innovation is perceived as better than the idea it supersedes” (Rogers, 2003, p. 15). Purchasing protein and produce at a mobile farmers market must be of more benefit to the customer than shopping at a grocery store. Second, the innovation must be compatible. Rogers defines compatibility as “the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters” (Rogers, 2003, p. 15). For an individual to adopt an innovation must fit into a preexisting set of cultural, societal, and personal norms valued by the adopter. Third, Rogers urges the importance of complexity, “the degree to which an innovation is perceived as difficult to understand and use” (Rogers, 2003, p. 16). If an innovation is extremely complex requiring years of training it will be less likely to diffuse within a community, ultimately being rejected. The fourth characteristic highlighted by Rogers is triability, “the degree to which an innovation may be experimented with on a limited bases” (Rogers, 2003, p. 16). Being able to test a product creating a trial stage producing outcomes desired by the consumer allows for a better rate of adoption. Lastly, Rogers identifies observability as a necessary factor of diffusion. Observability is “the degree to which the results of an innovation are visible to others” (Rogers, 2003, p.16). An individual is more likely to see adopt an innovation when the results are visibly of direct benefit to the consumer.

Innovations exhibiting all five characteristics of Rogers’ theory are more likely to be adopted at a faster rate. Throughout this study the mobile farmer’s markets will be viewed with

the lens of Rogers Diffusion of Innovation theory describing the perceived attributes of the innovation exemplified by each mobile farmer's market. Mobile farmer's markets possessing all five perceived attributes will be more likely to be adopted at a faster rate allowing the operator of the mobile farmer's market to manage a sustainable and profitable business.

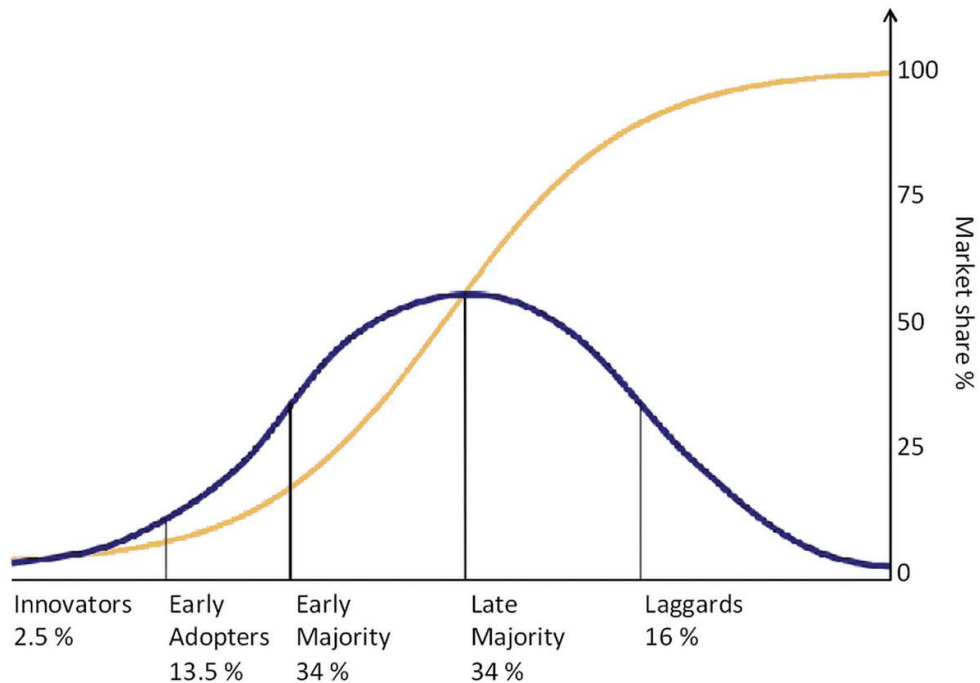
Conceptual Framework

Rogers defined diffusion as "...the process by which an innovation is communicated through certain channels over time among members of a social system" (Rogers, 2003, p. 5). As Rogers further defined and refined his diffusion of innovation framework he drew components which include the innovation-decision theory, the individual innovativeness theory, the theory of rate of adoption, and the theory of perceived attributes (Rogers, 2003).

Rogers theoretical framework is often conceptualized as a bell-shaped graph illustrating a very low number of innovators who comprise 2.5% of the population (figure 1). The three participants included in this study are the innovators of mobile farmers' markets. The graph illustrates the rates of adoption defined by Rogers. Understanding the conceptual framework explaining the adopting rate of innovations is highly important to the further development and success of mobile farmers' markets. Allowing the appropriate time for innovation adoption is essential when determining if the innovation is that of a success or fail. Enough time must be allowed, before termination of mobile farmers' markets, giving the laggards, making up 16% of adopters, a chance to decide whether to adopt or reject the innovation. This is important because it is unknown if the community of which the mobile farmers' markets exist are comprised of Early Adopters or Late Majority.

Figure 1.

Bell-Shaped Graph Depicting Levels of Adopters (Rogers, 2003)



Summary

Literature confirms the need for direct access to affordable and nutritious food needed as a preventative measure in order to reduce obesity throughout the United States. However, very limited research has been published identifying the most effective and successful community based strategy needed to create direct access to nutritious food. This study seeks to perform a multiple case study on three mobile farmer's markets in Georgia to further and create credible information in hopes of indentifying the best methods of operation to ensure mobile market success and ultimately reducing obesity.

CHAPTER 3

METHODS

This study consisted of a multiple case study documenting the experiences of three mobile farmers markets who were engaged in food distribution as part of their core mission or part of a private business enterprise. Each mobile farmers market had a unique approach and business model and this provided the context for this study. The wide variance in mobile farmers' market operators' goals for their respective markets made it likely that a multiple case study was the most appropriate research design. There is little existing research regarding mobile farmers markets and this is a poorly understood area which dictates the use of qualitative research methodologies (Leedy & Ormrod, 2001 p.141).

Participant Selection

In the broadest sense the search for participants began with an Internet search of mobile farmers markets within the state of Georgia. This search lead to multiple veins of information regarding mobile farmers markets which further led to search professional organizations within Georgia who supported farmers markets. The Snowball Sampling (Merriam,1998) technique was used to perpetuate identifying all of the mobile farmers' markets within Georgia and this technique was used until saturation was reached and no additional information was being garnered from additional queries.

Number of Participants

Following an exhaustive search of mobile farmer's markets within Georgia a total of four existing mobile farmers' markets were identified. The operators for each of these markets were identified and an initial email was sent to them asking if they would be willing to participate in this study and to expect a follow-up phone call within the week. A follow up phone call was made one week later explaining the purpose of the study and confirming the operator's willingness to participate in this multiple case study. One operator declined and three operators confirmed their willingness to participate in this study.

Selection Criteria

For the purpose of this study individuals selected had to meet the following criteria: operate a mobile farmers' market having wheels and be self-contained, excluding pop up markets and fruit stands. Pop up markets and fruit stands located roadside were excluded because of the unreliable nature of the operator as a result of seasonal availability. Such markets are not advertised in advanced but rather observed in the moment. The seasonal temperance of road side pop up markets and fruit stands excluded these markets from the study.

Further excluded from the study were food trucks selling prepared meals due to the varying laws requiring specific licensure when preparing and handling food. Vendors of whole unprepared foods receive licensure under the Department of Agriculture. Food trucks retailing prepared meals fall under the jurisdiction of the Department of Health. Protocol and logistics for operation vary greatly between the two departments and are not easily interchangeable.

Collection of Data

The general process of collecting data entailed a personal interview and observation with each market operator at their location. Upon arrival at each location a tour of the mobile market facility was given. Next a face to face interview was conducted using previously developed questions reviewed by a panel of experts. The panel of experts was comprised of three university professors, professionally familiar and well practiced with maintaining research credibility, validity, and questionnaire protocol. During the interview hand written notes along with an audio recorder documented the detailed dialogue between operator and researcher.

Data Analysis

First the data was processed by hand recording notes during the interview with each mobile market operator. Then the written notes were transcribed and recorded using a digital word file.

Next, the recorded dialogue was coded to identify the frequency of domains within each transcription. The domains identified, consisted of influencing ideas, themes, or characteristics.

Validity

As an ethical standard of conduct demonstrated by qualitative research, it is appropriate to ensure the validity and reliability of the study. A research must identify the methods used achieve reliability and accountability within the research, only then can research be deemed trustworthy (Merriam, 1998).

The validity of a study represents how accurately the research exemplifies reality. One method to ensure validity is triangulation. Merriam (1998) defines triangulation as “the use of multiple investigators, multiple sources of data, or multiple methods to confirm the emerging

findings” (p.204). Verification with subjects ensured accuracy of transcription. First, a digital transcription was emailed to each mobile market operator to ensure the truthfulness of the initial interview notes. Second, an area expert validated coding procedures and frequency of domains, therefore triangulation was achieved.

Reliability

Merriam (1998) defines reliability as, “the extent to which research findings can be replicated” (p.205). Questions were analyzed by a panel of experts. The questions were presented by the researcher in numerical order to the mobile farmer’s market operator during the face to face interview. In accordance with the research of Merriam (1998) the Triangulation that ensured validity also ensured reliability, an audit trail further ensured reliability by checking consistency in interpretation of the findings. The audit trail was comprised by the panel of experts selected as the researcher’s supporting committee.

CHAPTER 4

FINDINGS

Four mobile markets were identified. Initial contact with each market was made with only three responding. Face to face interviews were conducted asking a set of twelve prefabricated questions. Each question sought to procure a response needed to build a fundamental understanding by forming an overarching description of the individual mobile market description, goals and barriers. Mobile market goals and descriptions varied greatly among the three mobile markets. However, five perceived barriers were a commonality shared by all three markets. Collectively shared yet individually brought forth, the three mobile markets highlighted five common barriers faced when operating a mobile market: time, convenience, cost, education, and location.

After interviewing each mobile farmer's market operator, it was found that mobile farmer's markets are comprised of ten key foundational elements. Despite the great variance of the mobile farmer's markets the foundational elements were found to be a cornerstone of each mobile farmer's market. The ten essential characteristics identified represent the building blocks essential for operation of all three mobile farmer's markets. The ten essential characteristics are: local whole foods, partnership and strong support within the community, patron education of whole food preparation, evaluation to further determine location and customer needs, methods of food distribution, sustainability, possible barriers of time and cost, health and nutritional benefits,

logistics, and overarching goals set forth by each mobile farmer's market acting as their personal mantra and vision.

Foundational Elements

First, local whole foods are found to be a key component of the three mobile markets. Mobile market A operator stated, "we purchase our fresh produce from a local farm which not only provides us with produce but community partnerships." Echoing the importance of local whole foods, mobile market B said, "we are not only bringing fresh local food to communities that don't have easy access, but we are also assisting other local farmers by getting their products on the market." Providing access to local whole food reduces the need for chain super markets. "Conceivably between a local farmer's market on Saturday and the mobile market midweek, our hope is that people never buy food at grocery stores again," commented mobile market C.

Second, partnership and support within the community is a foundational element for the success of mobile farmer's markets. "Purchasing our produce from a local farm has created community appreciation and support. People now want to be help with our mobile farmer's market, which creates strong ties of people wanting us around" stated mobile market A operator. Partnering with the community also attracts more customers. "this is the business side of me talking, that fact we can sale more of our product if we have other peoples stuff in the truck is great," replied mobile market B operator. Communities seem to joy having access to mobile farmer's markets and recognize the effort put into establishing a local business. "They actually appreciate that you are doing something to help the county," stated mobile market c operator.

Knowledge of food preparation and nutritional benefits of fresh whole foods for both the consumer and producer are two foundational elements to mobile farmer's markets. For people to support and shop at a mobile farmer's market, first, they must understand how to prepare the

food and second, the important health benefits acquired when eating whole foods. Mobile market A states, “people aren’t eating fruits and vegetables because they are not fully aware of how beneficial they are for your health.” Mainstream education does not typically include food preparation, therefore whole food preparation is a skill acquired elsewhere. “In efforts to change directions in schools and save money and focus on test scores and every other thing you can think of we have gotten rid of our home economics program in schools” elaborated mobile market B operator. Mobile market C found education to be important when choosing cuts of meat and sharing ideas on different methods of preparation “we orally shared recipes about our select cuts of meat, for example, pork back.” Sharing oral cooking lessons assured the customer that less expensive meat could still be flavorful.

The fifth foundational element key to mobile farmer’s market success is evaluation. Evaluation was used by all three mobile markets to determine future parking locations, “we counted the customers at each location and use that as a reference point when deciding to revisit the location or not” stated mobile market A operator. Evaluation helped determine the types of advertising methods, “seeing that our clientele is technologically savvy we decided to give our mobile market a twitter,” commented mobile market B operator. Evaluation of sales has led to a better understanding of the local supply and demand of the community. Mobile market c shares, “50%-60% protein, 30% cheese, the rest is like honey and produce. The produce is strongly bias with seasonal fruit and eggs.”

The sixth foundational element identified is the method of food distribution. This element particularly looks at how produce and protein is obtained from the community for resale or distribution on the mobile market. Mobile market A operator commented, “because our food is free to recipients, first come first serve, we are always trying to improve our method of food

distribution. On busy days it can get hectic because we don't have an established method. We just focus on getting the food off our truck and in the hands of the people the best we can." Both mobile market B and mobile market C faced the challenge of conserving resources of time and gas while picking up local produce for resale. "That is a lot of fuel to bring items from surrounding cities...pay a person just to drive; your time is still worth something, the cost of getting everything ready, etc. At the end of the day you only clear 20 dollars, what is the point?" explained mobile market B operator.

Next, sustainability was found to be very important among all three mobile farmer's markets. Mobile market B and mobile market C shared common goals related to sustainability. Both mobile markets wanted to cover costs and generate revenue, profitability seen as the benchmark ensuring sustainability. Mobile market A operator strives to create a sustainable local and affordable access point, providing the community with fresh fruits and vegetables.

Time and cost are foundational elements affecting all areas of mobile market operation. Time and cost can act as both a barrier and asset to mobile farmer's markets, "what time of year it is effects the cost of purchasing produce, the direct and indirect cost of maintain the truck and manning the market affects how much we earn," stated mobile market B operator. "Determining how to manage time and allocate cost should be decided upon at the very beginning," encouraged mobile market A operator.

The ninth essential element of mobile farmer's markets is logistics. Development and detailed records of directions, dates, times, prices, laws, policy and technical skills are a few of the mobile farmer's markets logistics. These logistics are important for the daily and long term success of mobile farmer's markets.

The tenth and final, essential element of mobile farmer's markets are goals. Goals help identify and encourage direction for individual markets. Depending on the operators and the community of each mobile farmer's market, the goals can be very different. Mobile market A operator shares the market goal by stating, "The goals of this market are to promote healthier eating along with food preparation techniques among community members and reduce food deserts by providing access to healthy whole foods." Concerned less with food deserts and more with organics, mobile market B creates a goal of availability, "The driving goal of mobile market B is to provide shoppers with local organic grass-fed meats and produce." Designing mobile market C after a business model with the overarching intent to create revenue while preserving native animal breeds, the operator shares, "Mobile market C seeks to distribute local foods supporting and preserving local tradition, food, economy, environment and farmers. Low capital, low interest way of selling our farm products."

Case A: Mobile Market Description

Mobile market A is managed by a Cooperative Extension service program, the mobile market is one of many community projects initiated by the operator. The mobile market is funded by a three year grant and is currently in the second year of operation. Fruits and vegetables are given out to the county residents at no cost. In return the recipient supplies the mobile market volunteer staff with their street address; this is later used for mapping and evaluation purposes. Using Cooperative Extension Service resources, healthy recipes are combined with fruits and vegetables in a bag creating "meals in a bag." A team of volunteers must be found before every distribution day to pack the meal bags and operate the mobile market. Dedicated volunteers are vital for the success of this mobile market. A partnership with a

local produce company provides fresh fruits and vegetables for the mobile market to purchase. The produce company provides the mobile market volunteers and operators with a space in their warehouse to assemble the fruit and vegetable bags for distribution. The mobile market is a rented refrigerated truck used only during the distribution days. Distribution days occur monthly.

Goals

The goals of this market are to promote healthier eating along with food preparation techniques among community members and reduce food deserts by providing access to healthy whole foods. The mobility of the farmer's market allows for the customers without means of transportation to have access to fresh fruits and vegetables. Therefore all members of the county have access to fresh fruits and vegetables despite their socioeconomic status or geographic location. Improving the health of individual residents will allow for a stronger community. Mobile market A displays overarching themes of community strength and health.

Barriers

The first of the five barriers faced by all three markets is time. The particular time issue mobile market A faces is volunteer time. Mobile market A operator states, "volunteers are a vital asset when packing and distributing produce. Without volunteers giving their time during the week we would not have the labor necessary for operating the market." Mobile market A is only one of the many responsibilities of the operator. It is impossible for the mobile market to be successfully operated during distribution day with only one individual. By not having full time employees whose sole focus is operating and managing the mobile market there is a heavy (debilitating) reliance on volunteers ranging from high school students to the local garden club.

Having local volunteers shows that the community supports the mobile market but this practice of having only a volunteer staff may not promote long term sustainability for the market.

There are a set number of meal bags given out during distribution day. Typically about one hundred meal bags are prepared. However, the number of residents present to receive a meal bag is a constant fluctuation. One day all the meal bags will be given out within an hour at one location, but other days it may take several hours and multiple location stops. The uncertainty of participants has made advertising for the distribution days problematic because they cannot predict the availability of the meal bags due a fixed amount of supplies purchased creating a cost barrier. Mobile market A operator states, “We do not want to advertise for something that may or may not be available. We cannot predict if we are going to run out of produce in thirty minutes or three hours.” There is a set budget allotted for each distribution day allowing a limited amount of produce, bags, fuel and supplies to be purchased which can create a barrier.

Trying to stay true to their goal of increasing fruit and vegetable intake among county residents mobile market A had found it difficult to identify and reach their target audience, further resulting in problematic location selection. Mobile market operator A states, “One of our biggest problems is location, trying to understand the best way to reach our target audience is all about picking the right location to park our mobile market. We want the location of where we park to allow for the most people to benefit from having access to our market which they might not typically have due to transportation issues.” In hopes of combating this barrier mobile market A has partnered with a local public health organization providing the mobile market with a distribution location targeting county residents. Distributing the meal in a bag at the office of public health enables all members of the county to be recipients of the meal in a bag program.

Recipient participation of seems to be directly tied in to how convenient the location is to access. Mobile market operator states, “We don’t want to make people go too far out of their way to receive a meal in a bag, if it is too much unnecessary work then people will avoid the mobile market altogether.” Parking at this location does not limit the meal in a bag distribution to a single neighborhood or street but rather an entire community.

Education related to whole food preparation and nutrition pose as barriers. “Even though we include a recipe, teaching how to prepare the produce you can’t help but notice a slight disappointment when they realize they have to take the time to go home and cook it.” Food preparation is not a skill taught in schools therefore people are not as familiar with culinary techniques needed to prepare whole foods.

Case B: Mobile Market Description

The second participant, mobile market B is operated and funded by an established farm specializing in wholesale meats and produce. Mobile market B defines their mobile market by stating, “We’re a mobile farmer’s market truck that makes stops throughout central area every week, year round.” The transactions of this mobile market are for profit. Mobile market B is a business with weekly hours, employees and a verified schedule. Customers of mobile market B have no particular commonality and span many different races, ages, social status, and salaries. The items sold are from the parent farm supplemented with produce from local farmers. The vehicle housing the mobile market is a gutted package car, resembling a UPS van, lined with recycled shelving and storage units. The coolers were purchased second hand from a local vendor. The mobile market has a rustic earth friendly farm style with professional vinyl logos on

the outside. Social media, flyers, mailing lists, and local marquees are used to advertise the mobile market stops in advance.

Goals

The driving goal of mobile market B is to provide shoppers with local organic grass-fed meats and produce. Having local food reduces the use of fossil fuels and un-renewable resources ultimately providing a healthier earth and community. Building relationships with local farmers is a vital part of mobile market B. Without these local relationships mobile market B would not have access to edible resources outside the parent farm.

The second goal of mobile market B is to create and operate a sustainable business. The operator states, “the ultimate goal is to give the parent farm more outlets to sale their products. That is the main goal and quite frankly, we can sale more of our products if we act as aggregators, partnering with the local farmers to sale their products by having their product in our truck shelf.” Acting as an aggregator the mobile farmer’s market must establish business principles and practices that ensure longevity for both the operator, farmer, and customers. Without mobile farmer’s market sustainability the innovation becomes unreliable and sporadic.

Barriers

Education was identified as a barrier faced by mobile market B, specifically lack of basic patron culinary education. After observing the whole food selection a percentage of customers were intimidated because they lacked the culinary skills and preparation knowledge needed to prepare fresh whole produce and protein. The mobile market B representative stated “The obstacle is that the people (customers) have to know how to cook. That is the biggest thing, is having people know what to do ...when buying a box of food you read the instructions on the

side on how to prepare it, but that is not what we do...these people do not understand what we do with a bulb of fennel and a bag of Swiss Chard.”

Two barriers of time and convenience are identified in mobile market B. Finding preparation of whole food and shopping at a mobile market, with limited hours, a time consuming process, community patronage and sales seem to be negatively affected. Concerning convenience, mobile market B operator states, “the customers must understand they are not going to get everything they want every day. They have to think about seasonal local real food. That is a hard sale for people because people like the convenience, especially around holidays.”

Another barrier faced by mobile market B is cost. The cost of purchasing local produce for resale, the operating cost of the mobile market both direct and indirect, and the low cost of supermarket produce and protein as well as fast food retailers. “It is everything to pay to run a car plus everything you pay to run a building. It is kind of the worst of both worlds,” commented the mobile farmers’ market operator on cost. Despite being financially backed by a parent farm the mobile market desires to be financially self-sufficient resulting in a profit increasing sustainability of the business.

Choosing a location to park the mobile market is another barrier. Mobile market B partners with businesses in order to secure popular market locations. “It is finding the partners in the community who are not only going to let you show up but the way the vending laws are you cannot have the vehicle parked on public property. You cannot be parked in the street to sale.” Typically the partnership proves beneficial to both the business and the mobile market. “You must have an agreement with a business owner who is willing to let you take up two or three of his parking spaces and let people come in and out who may or may not do business with his business.”

Case C: Mobile Market Description

Mobile market C, the third mobile market participant is an extension of a previously established meat wholesale operation. Mobile market C seeks to distribute local foods supporting and preserving local tradition, food, economy, environment and farmers. The transactions of this mobile market are for profit. Clientele of mobile market C typically consisted of affluent communities with individuals wanting specialty meats. The mobile market is a pull behind trailer refurbished by design and architectural students from a local college. The mobile market was created to provide access of local areas to the already established meat wholesale business. The mobile market introduced new communities to organic grass fed heritage meat. The relationship between the mobile market and the community acted as a valuable segway creating potential wholesale customers such as chefs and restaurant owners. The operator of mobile market C has found the business to be neither profitable nor sustainable therefore suspending operation.

Goals

Mobile market C seeks to distribute local foods supporting and preserving local tradition, food, economy, environment and farmers. Native livestock, poultry and swine are raised as step towards preserving traditional breeds historically found in the area of operation. Providing access to native breeds of meat introduces individuals to the historic environment further encouraging and preserving heritage and tradition.

The second goal of mobile market C is to create a sustainable profit earning business. Concerning the goals of the mobile farmers' market the operator stated, "Low capitol, low interest way of selling our farm products." Earning a profit promotes sustainability of the mobile market creating appropriate dependency of farmers, employees, and customers. Desiring to

uphold business ethics of operation allows for mobile market C to not become a community crutch but rather a dependable source for financial flow, protein, and produce availability.

Barriers

Striving to exemplify an efficient model of sustainable business, the operator of mobile market C found that running the mobile market and role of aggregator did not compare to the time spend and the profitability of the standalone wholesale meat distribution business previously established. The mobile farmers' market commented, "The logistics associated with aggregating for multiple people was a problem and our volumes weren't high enough to entice, if we were only going to pay the farmers fifty bucks they aren't going to drive an hour to sell a handful of vegetables."

The time spent coordinating delivery and pick up with local produce farmers, training and paying an employee to work the mobile market, maintaining certification of necessary licensure and ensuring product freshness were the logistical cost operation barriers perceived by mobile market C. Describing the confusion and time spent figuring out licensure, mobile market C operator stated, "Permitting was big. Strange because we didn't really know how the tax department in a certain county would classify us. We would operate under the mobile license under the department of agriculture which allowed us to be a business and we could be registered and basically collect sales tax."

Cost of staffing mobile market C created a barrier. Wanting to maintain ethical business standards and practices the mobile market found a barrier when comparing the weekly profit, which varies depending on patronage, to the salary of the employee, which is predetermined and unchanging. "It starts to all measure against paying someone 15-20 dollars an hour to work the

mobile market and the benefits they receive and then you think...is the upfront cost of running the mobile market worth to the finicky patronage?" The time and effort spent coordinating and funding the mobile farmers' market was too costly when compared to the profit earned.

Mobile market C found the weather to be a barrier related to convenience. "You can basically predict the flow of customers based on the weather. Too hot or too cold results and little to no customers and rain is a nightmare." Because the mobile market is located outside, the customers must do their shopping outside directly facing the elements. "When the weather is bad even our most devote customers wants to shop inside."

Determining location was a barrier faced by mobile market C, "at some places we could not get the traffic needed to generate revenue," stated mobile market C operator. Mobile market c relied on partnerships with companies, wanting to reach similar customers within the community, to choose parking locations. "The same people that go to their restaurant buy from us. We would be parked out front and the people would stop by before they would go in the restaurant or come back after they eat. They would make a trip out of it."

Mobile market C is a strict policy of only organic produce and protein. "our mobile market carriers only organic produce and protein." Customers questioned if the organic status of the food was really worth the price. Not knowing the nutritional implications associated with organic food revealed an education barrier face by mobile market C. "I know the science behind organics and chemicals. As a result, I do not want to eat food with chemicals in it. If more people were educated on the pros and cons of eating chemicals they would understand paying the cost is achieved better with money than your health."

CHAPTER 5

CONCLUSION

The mobile farmer's market exemplifies Rogers' perceived attributes of innovations; relative advantage, compatibility, complexity, triability, and observability, which will help predict and explain rates of mobile farmer's market adoption by individual communities (Rogers, 2003). For the purpose of this study, adoption of a mobile farmer's market implied that mobile farmer's markets were found to demonstrate relative advantage due to the nature of local accessibility. In the future if every community or neighborhood established a mobile farmer's market the relative advantage would only increase. This is especially beneficial for areas not having established supermarkets.

Second, the mobile farmer's markets offer compatibility. All three markets were not found to be culturally abrasive or conflicting with societal norms therefore mobile farmer's markets are compatible with communities, farmers, and individuals.

Third, mobile farmer's markets are not too complex of an operation for an individual, organization or business to operate with minimal training.

Mobile farmer's markets offer triability. A customer can purchase a single item from a mobile farmer's market without committing to any further investment or agreeing to a contract. The triability component of the mobile farmer's market allows farmers, individuals and communities the freedom of adopting the innovation by testing out the product on a trial basis.

The last attribute of Rogers' diffusion of innovation theory is that of observability. Mobile farmer's markets allow individual community members to observe the results of the innovation. For example, a community member may observe a friend purchase vegetables from the mobile farmer's market. The friend of the community member may be encouraged to verbalize the positive experience of he or she had with the mobile farmer's market. The overall interaction between the community member and the friend resulted in the observability of a positive transaction between mobile farmer's market and friend.

All three mobile farmer's market participating in the study satisfied the attribute requirement of Rogers' theory. So why do these three mobile farmer's markets seem to struggle with sustainability? The three mobile farmer's markets have been established and operating for less than three years which highlights the indeterminable characteristic of time. Time, is a major role during the diffusion of an innovation. However, there are no established recommendations used to project the span of time needed before determining if an innovation is a success or fail. It is possible for all three mobile farmer's markets to have only reached the Early Adopters, 13.5% of the population, during their three years of operation. Excluding the Innovators, 2.5%, and the Early Adopters, 13.5%, there remains 84% of the community undecided, therefore, still needing time to adopt or reject the innovation. Having mobile farmer's markets embody Rogers' attributes of the perceived characteristics needed for an individual to adopt or reject the mobile market will allow for a variety of mobile farmer's markets to develop based on their community personalities and partnerships.

Implications

The success, sustainability, and profitability of each mobile farmers' market have direct correlation to community participation and support. These findings indicate that the mobile

farmer's market is not a standalone entity rather it is a culmination of community effort, support, partnership, and patronage. The amount of fossil fuels is reduced when growing and selling the produce and protein is done locally rather than shipping or transporting the product to another state or region. If produce and protein is grown and or secured locally the cost of packaging, handling and transferring is reduced, as a result the product costs less for both the consumer and the producer. Therefore, the partnership between the mobile farmer's market and the community is beneficial for the farmer and the patrons, monetarily profitable for the operator and nutritionally profitable for the consumers.

The barriers faced by the mobile farmers' market can be offset with active community support of both patronage and policy. If individuals within the community committed to purchase the bulk of their produce and protein at mobile farmers' markets the business would result in profitably further ensuring sustainability of both the mobile farmers' market and the community. Also, if policy was reformed to provide support from the local government such as developed protocol for licensure, title classification for tax purposes, and benefits for farmer involvement with local aggregators, this policy support could act as a major role promoting further development and introduction of mobile farmers' markets throughout America.

Despite the differences of daily operations, funding and location of the three mobile farmers' markets the foundational elements remained shared as essential for initial startup and further development. The foundational elements were identified as the following: local whole foods, partnership and strong support within the community, patron education of whole food preparation, evaluation to further determine location and customer needs, methods of food distribution, sustainability, possible barriers of time and cost, health and nutritional benefits, logistics, and overarching goals set forth by each mobile farmer's market acting as their personal

mantra and vision. These elements have been identified as the key ingredients acting as the take away message for any organization or individual wanting to create, operate or further develop a mobile farmers' market.

Lack of formal evaluation concerning the health benefits of patronage allows for no firm health factors to be determined. Therefore it cannot be stated that the future implementation of mobile farmers' markets will act as a preventative measure towards reducing obesity throughout United States. However, capitalizing on the direct community contact and involvement, mobile farmers' markets are an efficient methods of creating direct change among individuals in all variances of food environments. Mobile farmers' markets can be designed to represent and reflect the desires of individual communities while promoting healthy habits. This flexibility of design based upon the consumer offers greater representation of individual communities whereas policy can sometimes be a one size fits all approach. Possibly combining the efforts of both policy and obesity prevention could result in the national support of mobile farmers' markets as an innovative design needed to curb obesity throughout the United States.

As a result of establishing a mobile farmer's market the community now has direct access to fresh affordable local whole foods despite the preexisting food environment. Ultimately the access to affordable local whole foods will promote healthier eating habits acting as a preventative step which will likely reduce obesity.

Recommendations for Research

Areas of further research needed to provide a more expansive description of mobile farmer's markets are as follows. Research of mobile farmer's market infrastructure and architectural design would create technical data identifying methods of construction and

efficient affordable design. Mobile farmer's market economic sustainability research would identify the active role economics plays related to the sustainability of mobile farmer's markets. Further understanding the role of mobile farmer's markets to act as a community aggregator can strengthen the benefits perceived by communities to encourage adoption. Evaluating mobile farmer's markets as an alternative solution related to preventing obesity could encourage policy makers to promote mobile farmer's markets at both the grassroots and national level.

Researching the effects government crop subsidizing has on the affordability of mobile farmer's market produce and protein may lead to a better understanding on how policy affects the mobile farmer's markets. Understanding community perceptions of mobile farmer's markets is an area of research needed to identify the thoughts, concerns and perceptions of mobile farmer's market patrons.

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