Customers' Willingness to Pay Premium for Locally Sourced Menu Items

Allan Ortiz

Iowa State University

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Customers’ willingness to pay premium for locally sourced menu items

by

Allan Ortiz

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Foodservice and Lodging Management

Program of Study Committee:
Catherine Strohbehn, Major Professor
Clyde Walter
Tianshu Zheng

Iowa State University
Ames, Iowa
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ABSTRACT

While some studies have indicated consumers’ intentions and willingness to pay a premium for local foods, little research has studied what pricing premiums customers will actually pay in restaurant settings. The purpose of this study was to identify perceptions of customers in one educational dining facility about what influenced their willingness to pay a premium price for a promoted, locally sourced menu option, and assess their commitment to pay such a premium. A short questionnaire was used to gather information from patrons dining at an educational restaurant facility during six target days on which three local food items were featured.

Adult customers attending this educational dining facility for lunch during the six target days when a menu item was locally sourced were asked to voluntarily participate in the study \( (N = 279) \). Of the 279 attendees, 202 participants \( (72\%) \) completed the questionnaire during the six target days. Of the 279 attendees, 124 guests selected the local option on one or more of the six trial days for a participation rate of 44 percent. The majority of participants were female \( (n = 161, 80\%) \) and the age categories in which most of the respondents classified themselves were: between 18 and 25 years \( (n = 52, 26\%) \), between 46 and 55 years \( (n = 39, 19\%) \), and over 55 years \( (n = 80, 40\%) \). The majority of respondents identified themselves as either “student” \( (n = 58, 29\%) \) or “staff” \( (n = 75, 37\%) \), although a considerable percent of patrons participating in the trials identified themselves in the “faculty” \( (n = 33, 16\%) \) or “other” category \( (n = 36, 18\%) \).

Of the 124 guests who selected the local option, 119 respondents completed the questionnaire items rating their reasons for choosing this menu. Reasons these customers reported as considerations when purchasing local menu options were: support local economy, better product quality, and environmental concerns. All of these reasons had a mean rating above 3.40 on a 5-point scale \( (1 = \text{strongly disagree} \text{ and } 5 = \text{strongly agree}) \). The highest means were for “support of local economy” and “better product quality” \( (M = 4.68, \text{SD} = 0.83 \text{ and } M = 3.67, \text{SD} = 1.12, \text{respectively}) \). Results from ANOVA analysis showed no significant differences between gender, age, or patron classification and reported reasons for choosing the menu featuring local food items.
Findings from this research indicated that restaurant patrons were willing and did indeed pay premiums for menus featuring local products. All respondents \((n = 202)\) were asked to identify the highest price they would be willing to pay for a lunch in this facility featuring a menu with at least one local food ingredient from various categories: “fruits,” “vegetables,” “meat,” “dairy,” and “other.” Of the 122 respondents to the category “meat,” 49 respondents \((40\%)\) reported they would be willing to pay a price between $7.25 \((16\% \text{ premium})\) and $8.00 \((28\% \text{ over the regular price of $6.25})\). The highest contribution margin was obtained by local menu items featuring meat. This restaurant gained a competitive advantage of $0.60 for each entrée sold \((\text{at a premium price of } $7.25)\) after additional inputs of premium food cost and extra labor time were considered.

Findings of this study suggested that the two activities in the flow of food that presented differences in perceived time inputs between local and non-local ingredients were purchasing and receiving/storing. Foodservices operations interested in working with local suppliers should consider ways to minimize these differences and establish more efficient communication, payment, distribution, and service procedures.
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CHAPTER I. INTRODUCTION

Background

“People throughout the United States are designing and implementing sustainable, local food systems that are rooted in particular places, aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practices, and enhance social equity and democracy for all members of the community” (Feenstra, 1997, p. 1). Interest in local foods is reflected in the increased number of farmers’ markets, Community Supported Agriculture organizations (CSAs), government, and independent initiatives, all which encourage a food system that is sustainable and oriented to connect farmers with consumers.

Farmers’ markets and CSAs have been identified as clear representatives of local foods (Zepeda & Li, 2007). According to the U.S. Department of Agriculture (USDA) the number of operating U.S. farmers’ markets has increased 13 percent between the years 2008 and 2009, from 4,685 to 5,274 (USDA, Agricultural Marketing Service). Data collected in 2007 indicated that 12,549 farms in the United States reported marketing products through a CSA, an arrangement where the primary objective is to create a local food system that connects farmers with community members (USDA, National Agricultural Library, 2007). LocalHarvest, a public nationwide online directory of CSA farms in the United States, reported a registry of more than 2,500 CSA farms with 557 new affiliations in 2008 and at the beginning of 2009, an additional 300 new CSAs (LocalHarvest, 2009).

Government initiatives supporting local foods are also in development. The USDA (2009) launched the “Know your farmer, know your food” campaign to connect consumers with local producers in order to create new economic opportunities for communities, improve access to healthy, nutritious food for families, and decrease the amount of resources to transport food. Since the 2002 Farm Bill was passed, schools have been encouraged to purchase from local farmers. The 2008 Farm Bill allowed schools to use a geographic preference for the procurement of unprocessed agricultural products. Farm-to-School programs have been coordinated also by many independent non-profit agencies, such as the Community Food Security Coalition, in an effort to raise awareness among school children
about where and how food is grown and produced (more information at www.foodsecurity.org).

While efforts have been successful between farmers and consumers as well as farmers and schools, connections between farmers and restaurants or other foodservice institutions are less developed. However, increasing availability of and demand for locally sourced products have now gained the attention of many in the restaurant industry.

At the end of 2008, the National Restaurant Association (NRA) released its chef survey, “What’s Hot in 2009.” Each year the NRA asks professional chef members of the American Culinary Federation to rank food and beverage menu items, preparation methods, and other culinary themes as a hot trend, yesterday’s news, or a perennial favorite on restaurant menus. “What’s Hot in 2009” ranked locally grown produce as the hottest menu trend. According to the NRA, locally grown produce is popular with consumers because of product freshness and perceptions of environmental benefits due to fewer transportation miles. Another reason for ranking this as the hottest trend is that sourcing locally is a way to support local farmers, and ultimately, communities and businesses. The NRA chef survey “What’s Hot in 2010” (NRA, 2009) revealed that local sourcing is keeping its place as the hottest menu trend. In this recent survey, locally grown produce resulted in a first place ranking, followed by locally sourced meats and seafood, and with locally produced wine and beer ranked fifth.

The restaurant industry is facing new challenges, particularly in the current economic climate. Operations are focused on finding competitive advantages (Technomic Inc., 2009). Additionally, more consumers are looking for new food alternatives on which to spend their money, based on their dining habits and eating preferences (Sloan, 2010). Thus, offering menu options in restaurants that feature local foods with source clearly identified would appear to be a sound business strategy. However, local food costs are generally more expensive because of seasonality reasons, the labor intensive nature of production, or market constraints (Monroe, 2007); thus this additional cost would need to be passed to the restaurant customer.
Case studies of successful farm-to-restaurants initiatives have appeared in some media, but many restaurant owners/managers are uncertain as to how to translate interest in local foods into operations. Some research has found that both local food producers and restaurant and foodservice buyers in other sectors of the industry (schools, nursing homes, and colleges and universities) perceive there are benefits, as well as obstacles, to including local foods on menus (Gregoire, Arendt, & Strohbehn, 2005; Gregoire & Strohbehn, 2002; Strohbehn & Gregoire, 2003). While some studies have indicated consumers’ intentions and willingness to pay a premium for local foods, only one preliminary research study in a restaurant setting has been published which found what pricing premiums customers will actually pay (Sharma, Gregoire, & Strohbehn, 2009). Given the current interest in local foods, and considering that local food tends to be more expensive, this study will investigate actual costs for restaurant use of local foods and the extent that patrons of restaurants are willing to pay for local food choices.

**Purpose**

The purpose of this study was to identify the perceptions of patrons in one educational dining facility influencing their willingness to pay a premium for promoted, locally sourced menu items. The costs incurred in using local foods as compared to non-local food sources were assessed and the contribution to the restaurant for the decision to source local determined. This current study addressed choices made by patrons in one dining educational facility when presented with a local food option that included information about the producer and the conventional product. The findings from this study will be useful to retail foodservices involved in food procurement and to food producers considering new retail markets beyond farmers’ markets.
Objectives

Specific objectives of this study were to:

(a) Identify the reasons why patrons decide to purchase a menu featuring local ingredients;
(b) Ascertain patron perceptions affecting their willingness to pay more for locally sourced menu items;
(c) Identify what premium price for locally sourced foods is acceptable to patrons of an independently operated restaurant;
(d) Assess costs to the independently operated restaurant featuring local foods on its menu;
(e) Identify the monetary contribution to the restaurant for offering the local food choice.

Significance of the Study

While many studies have reported consumers’ stated intentions and willingness to pay a premium for local foods in different settings, limited research has found what pricing premiums customers will actually pay in a restaurant setting. This study will address this gap by investigating the choices that patrons in one dining educational facility made when presented with three locally sourced foods used in six menu items at three premium levels. The information will be useful to restaurants and retail foodservices involved in food procurement to determine the costs incurred in using local foods as compared to non-local food sources and the contribution to the restaurant for the decision to source local.
Definition of Terms

Terms used in this project are defined below:

**Flow of Food:** The flow of food includes the steps that foods follow from purchasing through service or sale to the consumer; but the steps considered in this study to compare local food items with non-local items were purchasing, receiving, storing, and preparing.

**Local Food:** Local foods were those food items grown, harvested, and/or processed within a 100 miles radius of Ames, Iowa.

**Premium price:** Premium price is the extra price paid for a menu item prepared with at least one local food ingredient.

**Perceived Time:** Perceived time expended refers to minutes spent in each of the steps of flow of food related to purchasing, receiving, storage, and preparing specific menu items for both local and non-local products.

**Purchase Cost:** Purchase cost refers to the price per pound paid to the supplier for local and non-local products.

**Preparing:** The step considered the pre-preparing (cleaning, peeling, cutting, portioning) of local and non-local products used in the recipes.

**Purchasing:** The step considered the acquisition of products, contact of the supplier, and communication regarding product specifications.

**Receiving/Storing:** Receiving/Storing steps were considered as the processes of inspecting products upon arrival at the facility and allocating the items to the appropriate storage unit.
CHAPTER II. REVIEW OF LITERATURE

This literature review is organized into four sections. The first section reviews information about the local food movement and dimensions related to the local food concept. The second section addresses benefits and barriers of direct marketing from the perspectives of producers or farmers and foodservice institutions. The third part reviews characteristics of restaurant procurement while the fourth details consumers’ perceptions of local food, preferences, and willingness to pay for local foods.

Local Food

Local Food Movement

Many communities have initiated an alternative food and agricultural system in response to trends in the current food system characterized by global and corporate control, economic power, and the lack of environmental concern (Feenstra, 2002). Farmers’ markets and CSA organizations reflect the characteristics of a local food system where producers and consumers collaborate. Consumer interest in using and buying local foods has increased over the past years; this interest is reflected in the increased number of farmers’ markets and CSAs in the United States. Farmers’ markets have experienced growth over the last two decades, with an increase of 33 percent in the number of farmers’ markets between 1994 and 2009 (USDA, Agricultural Marketing Service, 2009). Data collected in 2007 by the USDA indicated that 12,549 farms in the United States reported marketing products through CSA arrangements. The idea behind CSAs is attributed to European and Japanese influences introduced in the United States in the mid 80s.

In 2007, the New Oxford American Dictionary recognized “locavore” as the word of the year. The term was defined as “a local resident who tries to eat only food grown or produced within a 100-mile radius” (Oxford University Press USA, 2007). The issue cover of Time Magazine for March 12, 2007; displayed an apple labeled “Forget Organic. Eat Local” (Time Magazine, 2007). “Restaurants from Cinque Terre in Portland, Maine, to Mozza in Los Angeles are run by cooks who strive always to find local products first” (Cloud, 2007, p.
4). Chefs have recognized the growing consumer demand for local ingredients, and their menus for the year 2010 will reflect this trend (NRA, 2009).

Local Food Concept

Although there is widespread interest in local foods, there is no standard definition for “local food.” The term “local food” is fairly broad with several different complementary and dynamic dimensions. The main categories of these dimensions are “place” and “space.” Dimensions of “place” refer to the historical, cultural and social features, while “space” dimensions focus on the typicality of products from this special place (Amilien, 2005; Amilien & Holt, 2007).

Previous researchers have identified different definitions for what is meant by the term local food. Definitions have varied by those framed around political boundaries, a specific distance from purchasing point to sale, and geographic places of production.

Wilkins, Bowdish, and Sobal (2000) examined several dimensions of the concepts “seasonal” and “local food.” Researchers surveyed 166 undergraduate students enrolled in an economics and nutrition class at one large university in New York State. A one-page written questionnaire was developed to survey the students. From the findings, the authors concluded that meanings given for local foods involved distance, physical accessibility, and sometimes a dimension of specialty or uniqueness for products available in certain areas. Most meanings given to local food (65% of total responses) had to do with the place in which the food was produced.

Brown (2003) examined the interest of consumers in purchasing local food in the southeast Missouri region using a mail survey to gather information from the main food buyer in random households. A random sample of 1,594 selected households was used in an attempt to reach the average consumer. A total of 544 responses were received for a return rate of 41 percent of the surveys. The majority of the questions in the mail survey asked consumers about their food-buying behaviors and their opinions regarding locally grown products. The researcher found that 37 percent of the respondents did not define locally grown as a statewide concept, but one that was within a region and one in which food could cross state boundaries.
Pirog (2003) conducted an internet-based survey with consumers and food businesses in the states of Illinois, Indiana, Iowa, Kansas, Massachusetts (Boston area), Minnesota, Missouri, Nebraska, Wisconsin, and Washington (Seattle area) to evaluate their perceptions of food ecolabel prototypes and local foods. The ecolabel prototype used in the research was a seal or logo indicating that a product met a certain set of environmental and/or social standards or attributes. The findings in this non-peer reviewed study suggested that the consumers’ concept of local food was food that is grown close to home (a distance of 25 to 100 miles). For those consumer respondents exposed to the ecolabels, the term “local” was more likely to mean “grown in my state” than “grown a distance of 25 miles or less from purchase,” the answer given by those consumers not exposed to the logo.

Zepeda and Leviten-Reid (2004) conducted focus group sessions with food shoppers in Madison, Wisconsin, to investigate shoppers’ beliefs and behaviors about local foods. The four focus groups consisted of two groups of regular organic food shoppers (referred to as alternative food shoppers) and two groups of shoppers who did not frequently purchase organic foods (referred to as conventional food shoppers). Participants were asked to define local food. The authors found that local food was defined by most participants in terms of driving time. This criterion relates driving time to distance, with six to seven hours the most frequent answer to the question of what limit of time would be spent to drive to a local food source. About half of the respondents in this study defined local food in these terms, with other responses such as product availability at farmers’ markets or products from smaller farms also identified.

In an internally published research report, Pirog and Rasmussen (2008) conducted a survey to examine consumer perceptions of local food, food safety, and climate change as part of the Leopold Center’s Marketing and Food Systems Initiative. The survey sample was designed to be representative of the U.S. general adult population (18 years and older). Respondents to the survey (n=755) were asked to define “locally grown.” More than two thirds of the respondents described local food as that which “traveled 100 miles or less from the farm to point of purchase.” Only a third viewed local as grown in their state or region. Respondents from larger western states were less likely to choose the option “25 miles or
less” as their definition of local compared to their counterparts across the remainder of the country.

The Hartman Group (2008) reported the findings (not peer reviewed) of a survey conducted in December 2007 about U.S. consumers’ understanding of the term “buy local.” Results were based on a sample size of 796 and a contextual language analysis of hundreds of statements made by shoppers as well as online discussions about the topic of what buying local means. The report indicated that consumers defined local in terms of distance from their home: 50 percent defined local as within 100 miles, while 37 percent said within the same state.

**Benefits of and Obstacles to Local Purchasing**

Purchasing local products may bring benefits and obstacles to those participating in such transaction. Benefits and obstacles associated with the use of local food vary depending upon the perspective of the viewer, as the foodservice operator (of both restaurants and institutions), the producer or farmer, and the customer may have different opinions.

**Benefits and Obstacles Perceived by Foodservice Operations**

Gregoire and Strohbehn (2002) conducted a study with school foodservice operations to determine current purchasing practices and identify benefits of and obstacles to purchasing from local growers or producers. After reviewing the literature and interviewing several people responsible for school foodservice operations, the authors developed a mail survey instrument which was then mailed to school foodservice directors (N = 1,244) in four Midwestern states: Iowa, Kansas, Nebraska, and Minnesota. They found that respondents (n = 237) identified good public relations and support to the local economy as the strongest benefits of buying local foods. Other identified benefits were the possibility of purchasing smaller quantities, fresher and safer food, and knowledge of product sources. Among the obstacles identified by respondents were the lack of availability of products year around, the consistent ability to obtain an adequate food supply for the operation’s volume, lack of a reliable food quantity, product cost, preparation labor time, order methods, and payment procedures.
In another study, Strohbehn and Gregoire (2005) collected directors’ perceived benefits and obstacles of purchasing local foods in college and university foodservice operations. A survey was mailed to college and university foodservice directors in an agriculture-based Midwestern state to collect the data (N = 28). The authors reported that the perceived benefits of buying local foods were support of local sources and regional economies, freshness of foods and foods of higher quality, good public relations, students’ awareness about food sources and production practices, availability of safer food, and the possibility to purchase smaller quantities. Freshness and quality were identified as very important by the directors in this type of foodservice operation as their mission was to provide safe and nutritious foods to students whose only access to meals may come from the dining service. Barriers identified in this study related to payment procedure conflicts, reliable suppliers, and product availability year round.

Previous studies have identified similar benefits of and obstacles to marketing local food products between farmers and restaurants. Benepe et al. (2002) investigated the food purchasing patterns of restaurant and institutional foodservices in three Colorado regions. The study utilized a cross-sectional design with a primary focus on the utilization of locally grown foods. Researchers conducted telephone interviews (141 completed interviews, 37% response rate) gathering information about purchasing practices, buying criteria, business and patrons characteristics, and types of business ownership in restaurants and foodservices of these three regions. The sample included three different categories of restaurants or foodservices, with 20 percent of respondents representing chains and quick-service establishments, 20 percent institutional services, and 60 percent individually owned/private restaurants. The benefits identified by food buyers included a high customer satisfaction and the development of local business relations. Researchers categorized the barriers identified by food buyers who did not purchase locally grown foods (more than two-thirds of the sample) into the following reasons: lack of knowledge about local sources, inconvenient ordering, and product concerns such as limited availability, variable cost, and service increased costs.

The Food Processing Center of the University of Nebraska (2003) conducted a mail and online survey of members of the Chefs Collaborative organization to identify attributes
important to foodservice establishments, and the challenges and obstacles associated with the purchasing of locally grown food. This organization, which promotes sustainable cuisine using local and seasonal ingredients, is a national network of more than 1,000 members. The survey targeted chefs with the greatest buying authority in their establishments. The survey received 113 responses: 39 online and 74 by mail. Results showed that the advantages Chef Collaborative members gave to initiate or continue the purchasing of locally grown products were that the products were of higher or better quality, it was important to develop good relations with producers, there was access to unique or specialty products, and satisfied consumer’s requests. Seventy-three percent of the responding chefs agreed or strongly agreed with the idea that purchasing locally grown food had a positive impact on the bottom line profits of the establishment. The identified obstacles were related to distribution and delivery, concerns about the reliability and consistency of supply, complicated ordering process, and dealing with many suppliers. The study also found that chefs identified barriers related to pricing and competitiveness when other purveyors were competing.

Starr et al. (2003) investigated the marketing and purchasing practices of local foods between farms and restaurants in Colorado. Telephone interviews and a questionnaire were used to gather data from local producers and local buyers. The study defined “local producer” as an owner/operated farm, and defined buyers as restaurants and other food service institutions, both within Colorado. Of 154 interviews with local buyers, 22 (14%) worked in chain restaurants, 94 (61%) were with locally-owned restaurants, and 38 (24%) were buyers for institutions. The study determined that the important factors for local restaurants when purchasing food items from local producers were supporting other local businesses and acquiring products that minimized impact on the environment, and products that were grown and processed locally. The authors also determined that those institutions buying local products distinguished the importance of buying food free of pesticides. There were no significant differences found between buyers of both restaurants and institutions for purchasing factors of price, dependability, freshness, and the importance of quality.

Strohbehn and Gregoire (2003) conducted a case study with five commercial and five non-commercial foodservice operations in Iowa to assess interest in increasing local food purchasing. The study was categorized into four areas which examined pre- and post-
attitudes about purchasing from local sources, greatest threats to food, factors important in supplier selection, current purchasing practices, and local food buying. Results showed considerable interest by food buyers in supporting local farmers because of perceptions of fresher and higher quality products and lower transportation costs. Some of the foodservice managers’ concerns about working with local suppliers were time of delivery, payment procedures, working with multiple vendors, availability of items, consistent quality, and price of products.

Curtis and Cowee (2009) evaluated chef’s preferences for, and attitudes toward, purchasing locally produced foods. The study used mail and telephone surveys to capture executive chef preferences for local food at gourmet and high-end restaurants throughout Nevada. Respondents from a sample of 148 chefs classified their restaurants as corporate or chain/ franchise operation (47%) or as an independent dining facility (53%). The study also classified chefs based on whether or not they made local purchases; 69 percent had never purchased from local producers while 31 percent reported having made local purchases in the past or were currently doing so. Of the respondents who did not make local purchases; 75 percent of these agreed that the major barriers to purchasing locally were lack of necessary information about purchasing, inadequate availability and variety of products, and lack of authority to choose suppliers.

Inwood, Sharp, Moore, and Stinner (2009) examined the characteristics of chefs and restaurants that had adopted local foods to identify important local food attributes and the role of the restaurants in promoting local foods. Importance of taste, farm production practices, convenience, and price were considered as factors influencing the use of local foods. The study collected and analyzed data from interviews with chefs or owners from 71 restaurants in five Ohio cities (Akron, Cleveland, Columbus, Cincinnati, and Toledo); most of them independently owned. The interview guide considered four themes: attitudes toward local and organic foods, purchasing and advertising behavior, barriers and opportunities for purchasing, and organizational affiliations. Restaurants were classified according to the amount of locally produced food they used. Interviewees were asked to state the approximate percentage of locally grown produce, meat, and dairy inventory for each of the four seasons. The restaurants were classified into groups by level of local foods purchased in “None to
Low,” “Medium,” and “High” volume use of local food. Findings reported by researchers mentioned that all restaurants considered superior taste of local food an important factor when making purchasing decisions. Among all restaurant respondents, the inadequate distribution infrastructure was perceived as a barrier to the widespread use of local foods.

Benefits and Obstacles Perceived by Producers

Little research has identified the producer’s or farmer’s perspectives on the benefits of and barriers to marketing their products directly to foodservice operations. Gregoire, Arendt, and Strohbehn (2005) identified Iowa producers’ perceptions of marketing to local restaurants and other foodservice operations. Iowa producers that were listed in the 2002 Fruit and Vegetable Growers Directory, the 2002 Iowa Family Farm Meats Directory, and the list of local growers and producers provided by Practical Farmers of Iowa were mailed a questionnaire collecting information such as the amount and type of products sold, sales venues, and production practices. A response rate of 35 percent (195 questionnaires) was obtained. Perceived benefits to direct marketing and selling among the producers were supporting local farmers, providing fresher food for the customer, and traveling less distance for food. Researchers found that almost 44 percent of respondents had never sold to local foodservice operations because they could not produce the quantity year-round with the specifications needed by the buyer. Other reasons provided were the lack of knowledge by producers and buyers about regulations, and also that some purchasers were not open to buying from them.

Food Procurement in the Foodservice Industry

Foodservice Procurement Characteristics

The U.S. food marketing system is characterized by five economic components, production, processing and manufacturing, wholesaling, retailing, and consumption (Martinez, 2007). According to the USDA Economic Research Service (2008), the U.S. food marketing system supplied about $1.08 trillion worth of food in 2006. Foodservice facilities supplied $529 billion of this total.
According to Gregoire and Spears (2007) foodservice operations are often categorized as either commercial or noncommercial. The commercial segment includes foodservices in which selling food for profit is the primary activity of the business, and the noncommercial segment provides foodservice as a secondary activity for the business in which it is located. Restaurants are part of the commercial foodservice and can be classified as independently owned or part of a chain or franchise business. Independently owned restaurants are characterized for having more procurement flexibility because the owner is responsible of establishing policies and procedures, while chains or franchises are subject to corporate standards.

Generally foodservice operators have the option of buying their products from three different distributors: broadline distributors (with an extensive line of products), specialty distributors (focus upon a specific product category or segment), and system distributors (exclusively serve chain restaurants), although many large foodservice operations opt for buying directly from the producers or manufacturers. Small foodservices operations might purchase their supplies from wholesale clubs or supermarkets such as Sam’s Club or Costco (Gregoire & Spears, 2007).

Consumer demand for local and sustainable produced foods has gained the attention of the largest foodservice distributor in Unites States, SYSCO Corporation. SYSCO implemented in 2006 a program called Buy Local, Sell Fresh to link farmers with customers through the modification of existing procurement and distribution supply chains. (SYSCO, 2009).

Foodservice distributors have been exposed to the benefits of and obstacles to local purchasing. In Starr et al. study (2003) about marketing and purchasing practices of local foods between farms and restaurants in Colorado, authors also interviewed representatives of nine distributorships. Eight of these nine distributors were Colorado-owned companies who carried produce from Colorado farmers (with a range from 6% to 95% of overall inventory, depending upon the product). Some barriers identified by these distributors related to Colorado producers competing with producers from other states who have cheaper prices and year-round markets. Specific mention was made of competition with California, which is a
state with a reputation of producing high-quality produce. Another competing variable mentioned was the increasing demand for pre-processed or convenience forms of vegetables.

Although the U.S. food system is characterized by corporate control, there are opportunities for those interested in localized food systems (Guptill & Wilkins, 2002). The local food movement is attracting more foodservice operations and distributors to do more local sourcing of food products.

**Costs Implications of Using Local Foods**

Little research has been reported related to costs of using local foods in restaurants settings. Sharma (2007) reported on an exploratory study conducted in a dining facility operated by a hospitality program at a large Midwestern university in 2006. The objective of the study was to investigate if locally purchased food could be used as a competitive advantage for restaurants. The study collected observations from 323 diners who were offered menu choices at three price options. Menus offered to the customers informed them of the use of local foods. The study report that 41 percent of the attendees selected the local food option offered. Of the participants who selected the local option 45 percent customers selected the option without any price premium, 31 percent agreed to pay a premium of $1 (18% higher than the regular price), and 24 percent agreed to pay a premium of $2 (36% higher than the regular price). Findings of this study suggested that “consumers are willing to support higher menu prices when they are aware they are buying items prepared from local food sources” (Sharma & Strohbehn, 2006, p. 2).

As part of the same study Sharma, Gregoire, and Strohbehn (2009) investigated what economic costs and benefits would influence restaurants and producers to work with local foods. Data in the study were collected from interviews and observations in ten small and independently owned restaurants in a Midwestern state in United States during spring and summer of 2006. The operations participating in the study were selected to maximize the diversity of restaurants by the type of menu offered to the public, size, location, preparation and service, and affiliation. Researchers in this study tracked three menu items (items representing starts, main dishes, side orders, and desserts) made with local ingredients and three options made with non-local foods, and measured the time costs and total item costs of
sourcing, purchasing, production and service of both product options. For the analysis of the data, the researchers used a nonparametric, linear programming-based technique known as Data Envelopment Analysis (DEA). Results of the data gathered corresponded to nine of 10 restaurants (one restaurant did not complete participation). Based on these results, researchers concluded that there was a statistically significant difference (p < 0.05) between the delivery times of primary local ingredients and those purchased from non-local sources, with more time spent on delivery of local products. No statistically significant difference was found in the sourcing time or food cost of local and non-local ingredients.

**Local Food Consumer Behavior**

*Factors Influencing Food Choice*

A wide variety of factors can influence human food selection. As Sobal, Bisogni, Devine, and Jastran (2006) noted, “people are actively selecting what, when, where, with whom and how to eat and the range of factors potentially involved in human food choice is tremendously diverse and extensive.” Sobal et al. developed a conceptual model of food choice process that incorporated and linked factors involved in making food selections using in-depth qualitative interviews with adults in the United States. The model examined individual food choices of consumers and identified three major components that overlapped and interacted when people constructed food choices. These key components are: “life course,” “influences,” and “personal systems.”

The authors explained that across the lifespan (“life course”) people construct food choices based on “trajectories” (their thoughts, feelings, strategies, and actions over time), “transitions” (major life events), “timing” (specific events), and “contexts” (the environment, including social structure and economic conditions). The variety of “influences” shaping the food choices can be classified into “ideals” (standards learned through socialization and acculturation), “personal factors” (physiological factors such as sensory, endocrinological, and genetic; psychological factors such as preferences, moods, phobias; and relational factors such as identities, self-concept, etc.), “resources” (money, time, transportation, skills such as cooking, knowledge, etc.), “social factors” (roles, families, groups, networks, organizations, communities, etc.) and “contexts” (physical surroundings and behavior settings, social
institutions and policies, and seasonal and temporal climate). The researchers explained that “personal food systems” include the processes of constructing food choice values (taste, convenience, cost, health and managing relationships), classifying foods and situations according to these values, and developing strategies for food selection and eating in different situations. These food choice values change over time as events and experiences during the course of life shape food choice influences that may result in new or modified food choices values.

Motivations and Preferences for Buying Local Foods

Research on consumer preferences of local food at farmers’ markets and direct markets has determined some of the perceptions associated with these products and the motivations to buy local foods. In Pirog’s (2003) evaluation of the perceptions of ecolabel prototypes and local foods, the researcher also found that freshness was the most important reason identified for buying local foods among consumer respondents across all three geographic regions (Midwest area, Boston area, and Seattle area) with more than 40 percent of Boston and Seattle area respondents, and 39 percent of Midwest respondents indicating this response option. The second most popular reason for purchasing foods among the Midwest-area respondents was “supporting family farmers.” However, this reason was selected as the third choice among Seattle-area respondents and fourth by Boston-area respondents.

In the study of consumers’ views on local food, Zepeda and Leviten-Reid (2004) found that all respondents had a positive attitude toward local foods because of the association of it with enhancing the economy and benefiting the environment. freshness and flavor were cited most frequently as the reasons for shopping at farmers’ markets by conventional food shoppers.

In the analysis of consumer preferences for locally grown food in southeast Missouri, conducted by Brown (2003), consumers reported that quality and freshness were the most important concerns when shopping for fresh fruits and/or vegetables. Other identified reasons were price and place where the product was grown. Majority of consumers (73%) reported
quality was higher for fruits and vegetables purchased at a farmer’s market than to those purchased at a grocery store.

Tregear and Ness (2005) conducted a discriminant analysis of consumer interest in locally produced foods in a region of England to determine what factors influenced buying decisions. After reviewing literature, the researchers hypothesized that three sets of factors were related to the consumer interest in local foods: attitudes, situation, and demographics. The attitudinal factors considered were concerns about food supply chain, positive attitudes toward farmers and pragmatic (e.g. price, convenience), and intrinsic (e.g., appearance, quality, taste) product features. The situation factors considered were rural residency and personal contact with farming. The third set of factors considered demographics such as income, occupation, and education levels, as well as age and gender. The study conducted face-to-face interviews with household food shoppers from two urban and three rural locations. A convenience sample was used (734 survey responses) and the variables age, gender, and social class were controlled. Results of the study gave partial support to the hypothesis that interest in local foods was associated with relatively high levels of concern over food chain issues. Partial support was also give to the idea that interest in local foods was associated with positive attitudes towards farmers. The study concluded that “contact with farming” was a strong predictor of interest levels in local food. Residency in a rural area was also found to be positively associated. The demographic variable “age” was the only significant predictor suggesting that interest in local foods was higher among older respondents. Researchers concluded that their findings related to demographic variables were consistent with other studies in that demographic characteristics are weaker discriminators of interest in local food than attitudinal variables.

Zepeda and Li (2007) investigated the characteristics of local food buyers using data from a national survey of food shoppers. A telephone survey and a mail survey were developed and tested. The final sample had 956 responses: 522 mail surveys and 434 computer assisted telephone interview surveys, with a response rate of 47.7 percent and 29.1 percent respectively. Researchers concluded that attitudes about nutrition and health, energy conservation, and the importance of farmers receiving adequate prices had no significant effect on the probability of buying local. On the other hand, attitudes toward cooking and the
cost of food were significantly positive associated with local buying behavior. Gender, age, education, race, and religion had no significant impact on the probability of buying local food.

Zepeda and Deal (2009) conducted semi-structured interviews to understand why consumers bought organic and/or local foods. A convenience sample was recruited from different sources to include specific ethnic and income groups. The sample included a South-East Asian gardening community, an African-American church group, members of a Slow Food group, and shoppers at a food cooperative, all from Madison, Wisconsin. Respondents were categorized into groups based upon their frequency and the proportion of their organic food purchases. These groups were “heavy organic buyers,” “light organic buyers,” and “non-organic/conventional buyers”. About a third of all organic food buyers felt that local food was more desirable than organic foods. “Non-organic/conventional buyers supported local foods for personal and cultural reasons, believing that local food was fresher and better and that by buying it they were supporting their local culture and people” (Zepeda & Deal, 2009, p. 702).

Willingness to Pay More for Local foods

Researchers have noted consumers consider many factors when making food decisions with taste, convenience, cost, and health among the factors influencing food choices (Sobal, et al., 2006). Identification of factors influencing the decision to buy local foods can be used by producers, restaurants, and foodservice institutions to define new marketing strategies. A number of studies regarding consumers’ reported willingness to pay for local foods have been conducted. These studies have explored factors which support willingness to pay more for local foods.

In a non-peer reviewed report, the Leopold Center for Sustainable Agriculture conducted a consumer market research to explore perceived relationships among food safety, health, greenhouse gas emissions, and climate change among different food systems of local, national, and global (Pirog & Larson, 2007). One of the objectives of the research was to determine whether consumers were willing to pay more for a food system that has a net reduction in greenhouse gas emissions. In this research, 500 usable surveys from a
representative sample of the U.S. adult population were received. About 50 percent of the respondents reported willingness to pay a 10 to 30 percent premium for food from supply chains that emit less greenhouse gas. Of the respondents who shopped at venues where locally-grown foods were offered, 58 percent were willing to pay more and 38 percent indicated they would pay the same.

Darby, Batte, Ernst, and Roe (2008) investigated the geographical extent of the term “local” and the value consumers place on “local” production. The researchers used data from a choice-based conjoint analysis survey instrument administered to 530 shoppers at 17 Midwestern locations including farm markets, farmers’ markets, and retail grocery stores. Respondents were asked to choose between two baskets of fresh strawberries that were differentiated with respect to the location of their production, the name of firm producing the product, the freshness of the product, and the purchase price. Based on the results researchers concluded that respondents place similar value on products produced ‘within state’ and “nearby” and that consumers’ willingness to pay for local production is independent from values associated with product freshness and farm size.

Carpio and Isengildina-Massa (2009) investigated consumers’ willingness to pay for “locally grown” characteristics in produce and animal products. The authors identified socio-demographic characteristics affecting consumer preferences. The data for this study were collected via a telephone survey of a random sample of 500 South Carolina consumers. Results of this investigation suggested consumer perception about the quality of South Carolina products had a strong impact on their willingness to pay for the local attribute. Respondents who perceived a better quality in local products reported a willingness to pay higher premium than those who perceived quality as the same; 11 percent premium for produce and a 6.5 percent premium for animal products. Results also indicated that consumers whose main motivation for buying South Carolina products was to support local statewide farmers or the state economy were willing to pay an additional 4.2 percent premium in produce and 3.3 percent premium in animal products, for a total premium of over 15 percent and close to 10 percent, respectively. The authors showed that premiums for local products were influenced by age, gender, and income as well by perceived product quality, a desire to support the local economy, patronage of farmers’ markets, and consumer ties to
agriculture. These findings differ from those of Tregear and Ness (2005), who found demographic characteristics were less influential.

Brown’s (2003) study of consumers in Missouri had contradictory results. In response to the question “Would you pay a price that was lower, the same, or higher for products labeled locally grown”, 58 percent of respondents would only choose the local product if its price was the same as for a comparable non-local product, 14 percent would only pay a lower price for food that was locally grown, 16 percent would pay a price that is 5 percent higher, 5 percent would pay 10 percent more, and one percent would pay 25 percent more for a local product.
CHAPTER III. RESEARCH METHODOLOGY

The purpose of this study was to identify perceptions of patrons in one educational dining facility influencing the willingness to pay a premium for promoted, locally sourced menu items, and assess the commitment to pay such a premium. Additionally, costs incurred using local foods compared to non-local foods were assessed.

Use of Human Subjects

The Iowa State University Human Subjects form was submitted to the Institutional Review Board with information regarding the procedures and instruments used for this study. The Institutional Review Board approved (Appendix A) that this study satisfied all requirements for the protection of human subjects.

Overview

A dining facility, operated by a hospitality program at a large Midwestern university, was the setting for this study. It is a non-profit educational laboratory dining facility, which operates as a restaurant, with an emphasis on quantity food production and management principles. It is located on the university’s main campus and is open to the public five days a week during the noon hour. Customers generally make reservations in advance based on an advertised menu. The menu in this facility is set by course instructors and standardized recipes are used.

Six fresh and/or cooked food items were used to track purchase costs, time costs, and customer’s willingness to pay a premium for items prepared with three local ingredients: carrots, apples, and ground beef. Two trials each of these three foods were conducted in the facility. Local food items used for the food trials were selected to correspond to ingredients used in the standardized recipes of the menu. These products were also chosen based on availability during the time of data collection.

A short questionnaire (Appendix B) was used to gather information from patrons regarding their willingness to pay a premium for a menu item featuring local products. Customers dining in the facility on the six target days when one of the menu items contained
locally sourced ingredients were asked to participate. During lunchtime, patrons had the option of selecting the non-local menu for the regular price of $6.25 or pay more for the menu featuring the item using local food. A premium over the price for the menu was set depending on the item featured that day: carrots $0.50; apples $0.75 and ground beef a $1. This represented an increment over the original menu price of 8 percent for carrots, 12 percent for apples, and 16 percent for the ground beef items.

The perceived time corresponded to the time associated in completion of each of the four steps of the flow of food--purchasing, receiving, storing, and preparing--it was determined for both local and non-local menu items. This perceived time on each step of the flow of food was determined based on perceptions and observations of the food buyers and preparers using a developed time unit report (Appendix C). Purchasing and receiving steps included the time expended in the acquisition of products, and the inspection of products upon arrival at the facility. The step of storing included the time expended in allocating the food item to the appropriate storage unit in the needed weight, while preparing included getting the products cleaned and ready to be used in the standardized recipes.

The purchase cost was measured registering the cost of the local food ingredients as well as the cost of ingredients from conventional sources. For example, apples cost $1.50 per pound from a local source compared to conventional source price of $1 per pound.

**Sample Selection**

All adult customers attending the educational dining facility during the lunch period of the six target days when a menu item was locally sourced were asked to voluntarily participate in the study. Customers were typically faculty and staff members of the university with the occasional students and off campus visitors (such as student youth groups and retired people) in attendance. The dining room has the capacity to seat about 85 people but the attendance fluctuates depending on the menu featured to customers, the day of the week, weather, and other variables. Dining room attendance forecasted on the trial days was approximately 50 customers.
Data Collection Tools

Time Unit Report

Perceived time spent was compared for local and non-local foods. Time spent in each step of the flow of food was collected using a time unit report based on perceptions and observations of the food buyers and preparers. This report included recollections of minutes spent on tasks related to purchasing, receiving, storing, and preparation of both local and non-local food items.

The time unit report included four columns of information: the name and description of the activity, the estimated start and finish times, and the estimated time spent for each activity. The time spent in each activity was calculated totaling estimated time inputs and recorded in the fourth column (Appendix C).

Food Cost Report

The purchase cost of each of the food products, local and non-local, was recorded using an Excel form called food cost report (Appendix D). This form was similar to the standardized recipe for the day. It had seven columns: the first one listed the ingredients, followed by the amount, unit, cost, quantity, non-local, and local cost. It also had information about recipe yield, factor used, servings, and costs for the local and non-local items.

Willingness to Pay Premium

A short questionnaire was used to identify patron perceptions influencing their willingness to pay more for local menu items. This questionnaire had four sections. The first section included three questions related to the interest in having a menu that featured local products and reasons why patrons might choose to purchase the local menu option that day. In this section, respondents also indicated their level of agreement (using a five-point Likert-type scale, with 1 = strongly disagree and 5 = strongly agree) to six statements reflecting perceptions and attitudes influencing decisions to pay more for locally sourced menu options.

The second section of the questionnaire contained two questions about local food considerations. One question requested the customer’s opinion about how frequent this dining facility should feature specific local products on the menu. The other question used a
five-point Likert-type scale, with 1 = strongly disagree and 5 = strongly agree, to assess customers’ potential consideration of where and how food was produced when making food purchasing decisions.

The third section included three questions related to the respondent’s willingness to pay more for local foods. One question asked for the customer’s opinion about the premium assessed on the local food option that particular day, with multiple choices presented. They could indicate all that were applicable. The second question was an open-ended question to determine the highest price customers would be willing to pay for a lunch in this operation if local food ingredients were used. The last question in this section asked for the range of premium prices customers would be willing to pay for different types of local products.

Demographic information such as gender, age, and customer category (student, faculty, staff or other in the university) was asked in the last section of the questionnaire with multiple choice options presented. The customer category question was used as proxy to determine socio-economic status.

The questionnaire was pilot tested for content validity with academic experts and staff who frequently dine in this facility (n = 10). Minor revisions on format were made based on feedback from the pilot test group. Questionnaires were coded by colors, to identify the days they were administered. This allowed for an analysis of data by food item.

Data Collection Procedures

Time Unit Report

Local producers were contacted by the research team to confirm the availability of product. Vendors were also informed as to the purpose of the project. This procedure was recorded in the time unit report as a part of the purchasing step in the flow of food process. All activities were estimates of when an activity began and ended and identified in minutes and hours. The recorded perceived time on the activity was calculated from identified start and ending time. The other three steps of the flow were also recorded for both local and non-local foods in a manner similar to the purchasing step. Prepared products were identified or tagged as local to ensure service of requested items. These time inputs were estimated for each of the three local foods included in the trials (apples, carrots, and ground beef).
Food Cost Report

Supplier invoices were used as the source of information about purchase cost of the different products (carrots, apples, and ground beef) used during the food trials. This information was organized in a table to compare differences in purchasing prices and cost of recipes using local and non-local ingredients. An Excel file worksheet was used to record information.

Questionnaire Distribution

On each of the six trial days, patrons were approached at the table by their assigned student server who explained the menu of the day and offered the locally sourced menu option as an alternative with a specific premium. Servers followed a script (Appendix E) to ensure patrons received the same information. For example, one target day the option for dessert was Apple Caramel Crisp; the local food description was Apple Crisp made with apples from Berry Patch Farms, a local orchard. A table display (Appendix F) explained the purpose of the study and also included a statement about the voluntary and confidential nature of the research. The menu and premium price were described on the table display. After the meal, participants were asked by the server to voluntarily complete the short questionnaire about local food use in retail foodservices. Completed questionnaires could be left on the table or taken to the cashier stand and placed in a designated box. Those that received the local food option were given an extra charge card that identified the premium amount (i.e. $0.50, $0.75, or $1.00), and which they presented to the cashier.

Data Analysis

Statistical Package for Social Sciences for Windows version 18 (SPSS, 2009) was used to analyze the data. Frequencies were calculated on the demographic characteristics of respondents and items related to their willingness to pay premium for a locally sourced menu item as an option. Descriptive statistics, including means and standard deviation, were calculated as measures of central tendency for data related to perceptions, behaviors, and attitudes towards local foods. ANOVA and independent t-Test were used to determine if there were statistically significant differences between respondents’ demographic
characteristics and their willingness to pay more and identified reasons for choosing the local food option. Costs associated to local products and non-local products were calculated in an Excel file worksheet.
CHAPTER IV. RESULTS AND DISCUSSION

The purpose of this study was to identify perceptions of customers in one educational dining facility about what influenced their willingness to pay a premium price for a promoted, locally sourced menu option, and assess their commitment to pay such a premium. The contribution to the restaurant for the decision to source local was determined. A short questionnaire was used to gather information from patrons dining at an educational restaurant facility during six target days on which three local food items were featured. Analyses of purchased food costs, time inputs, and premiums charged were also conducted. This chapter presents the results in four sections: respondents’ demographic characteristics, local food considerations, willingness to pay a premium price, and analyses of time and food cost inputs for the restaurant.

Respondents’ Demographic Characteristics

A total of 202 patrons of a restaurant style educational facility completed the questionnaire during the six target days. The majority of participants were female (n = 161, 80%). The three age categories in which most of the respondents classified themselves were: between 18 and 25 years (n = 52, 26%), between 46 and 55 years (n = 39, 19%), and over 55 years (n = 80, 40%).

Respondents were presented with classification options of “student,” “faculty,” “staff member,” or “other.” The majority of respondents identified themselves as either “student” (n = 58, 29%) or “staff” (n = 75, 37%), although a considerable percent of patrons participating in the trials identified themselves in the “faculty” (n = 33, 16%) or “other” category (n = 36, 18%). Respondents in the “other” category indicated they were a visitor, student’s family member, or a retired university employee. The “customer classification” question was used as proxy to generalize socio-economic status. It was assumed that those who selected the “faculty” category might have had a higher income than the “staff member” or “student” category. Previous research has showed that demographic characteristics have influenced the consumers’ willingness to pay more for local products, with those in higher
income brackets representing the typical customer of local food producers and vendors (Carpio & Isengildina-Massa, 2009; Tregear & Ness, 2005).

While approximately 35 percent of respondents \((n = 71)\) reported dining frequently in this restaurant (at least once a week was reported by 55 patrons or at least once every other week by another 16), most of the respondents reported they visited the dining facility only at least once a semester \((n = 61, \text{30\%})\) or less than once a semester \((n = 70, \text{35\%})\). Thus, responses primarily are from customers who do not frequent this foodservice establishment often.

Table 1. Patron’s Demographic Characteristics \((n = 202)\)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>161</td>
<td>80</td>
</tr>
<tr>
<td>Age Category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>52</td>
<td>26</td>
</tr>
<tr>
<td>26-35</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>36-45</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>46-55</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Over 55</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>Classification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>58</td>
<td>29</td>
</tr>
<tr>
<td>Faculty</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>Staff</td>
<td>75</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>Dining Frequency at Facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least once a week</td>
<td>55</td>
<td>27</td>
</tr>
<tr>
<td>At least once every other week</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>At least once a semester</td>
<td>61</td>
<td>30</td>
</tr>
<tr>
<td>Less than once a semester</td>
<td>70</td>
<td>35</td>
</tr>
</tbody>
</table>
Local Food Considerations

The first part of the survey explored reasons why patrons made the decision to purchase the local food option featured on the menu. Customers’ perceptions influencing their willingness to pay more for the locally sourced menu option were assessed. Considerations about where and how local food is grown when customers buy food were also assessed.

Selection of Local Menus

All adult customers attending this educational dining facility for lunch during the six target days when a menu item was locally sourced were asked to voluntarily participate in the study (N = 279). During the six trials featuring local food the facility had a total of 324 guests. However, in food trial one (FT1), although the total number of patrons attending lunch was 48, 29 of these were underage guests. A similar situation happened in food trial number three (FT3) in which a total of 50 customers attended the restaurant, yet 16 of these guests were not adults. Underage guests represented about 14 percent (45 of the 324 customers) of total attendance during the trial days. In addition, these underage guests were part of larger groups, which frequently used prepared credit invoices to pay for the meal. Thus, underage patrons were not considered for participation and were not considered as part of the sample.

Attendance and response frequencies are shown in Table 2. Carrots were used as the local ingredient in food trial number one (FT1) and food trial number five (FT5). Apples were used as the local ingredient for food trial number two (FT2) and food trial number three (FT3). Local ground beef was used as the ingredient for food trial number four (FT4) and food trial number six (FT6). A total of 202 people from the prospective sample of 279 completed the questionnaire for a response rate of 72 percent. Of the 279 attendees, 124 guests selected the local option for a participation rate of 44 percent. This result is very similar to findings in the study by Sharma and Strohbehn (2006) in which 41 percent of the participants selected the local menu option in an educational dining facility.

The regular menu price for lunch meals in this dining facility was $6.25. The menu featuring local carrots had a premium price of $6.75, the menu featuring local apples had a
premium price of $7, and a premium price of $7.25 was assessed for the menu featuring local ground beef. On combined trial days for the local food options, 25 of the 71 adult patrons selected the local carrot menu (35%) and paid an additional charge of $0.50 (8% premium), 47 of the 79 adult patrons selected the local apple menu (59%) and paid a premium of $0.75 (12% over regular price), 52 of the 129 adult patrons selected the local ground beef menu (40%) and paid an additional charge of $1.00. Participants paid more for menus featuring local ingredients.

Table 2. Adult Patrons’ Attendance and Participation in Six Local Food Trials

<table>
<thead>
<tr>
<th>Restaurant Customers</th>
<th>FT1</th>
<th>FT2</th>
<th>FT3</th>
<th>FT4</th>
<th>FT5</th>
<th>FT6</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult customers</td>
<td>19</td>
<td>45</td>
<td>34</td>
<td>57</td>
<td>52</td>
<td>72</td>
<td>279</td>
<td>100</td>
</tr>
<tr>
<td>Completed questionnaire</td>
<td>13</td>
<td>39</td>
<td>25</td>
<td>37</td>
<td>39</td>
<td>49</td>
<td>202</td>
<td>72</td>
</tr>
<tr>
<td>Did not complete the questionnaire</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>20</td>
<td>13</td>
<td>23</td>
<td>77</td>
<td>28</td>
</tr>
<tr>
<td>Selected local food option</td>
<td>3</td>
<td>24</td>
<td>23</td>
<td>20</td>
<td>22</td>
<td>32</td>
<td>124</td>
<td>44</td>
</tr>
<tr>
<td>Did not select local food option</td>
<td>16</td>
<td>21</td>
<td>11</td>
<td>37</td>
<td>30</td>
<td>40</td>
<td>155</td>
<td>56</td>
</tr>
</tbody>
</table>

*The local ingredient was carrots
bThe local ingredient was apples
The local ingredient was ground beef

Reasons for Choosing Local Menus

Of the 124 guests who selected the local option, 119 respondents completed the questionnaire items rating their reasons for choosing this menu. Respondents were presented with four reasons and asked to identify level of importance in influencing their decision. The reasons presented were “better product quality,” “support of local economy,” “environmental concerns,” and “other reasons.” Not all respondents rated the reasons provided; rather they
just selected one of these by checking or marking with a symbol instead of rating it on the scale of importance. The reason “better product quality” was indicated as a reason without any rating given by 7 respondents, the reason “support of local economy was identified by 35 respondents without a rating, “environmental concerns” was identified as a reason but not rated by 3 respondents, and “other reasons” was indicated as a reason without any rating given by 6 respondents. Table 3 presents the number of respondents who rated the given reasons (9 respondents on “other reasons” category; 66 respondents on “support local economy,” 63 respondents on “better quality,” and 64 respondents on “environmental concerns” category) and the means (M) and standard deviation (SD) for reasons rated on the five-point scale provided (1 = not important to 5 = very important).

Table 3. Ratings of Importance of Reasons for Choosing Menu Featuring Local Foods

<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other reasons</td>
<td>9</td>
<td>4.78</td>
<td>0.44</td>
</tr>
<tr>
<td>Support local economy</td>
<td>66</td>
<td>4.68</td>
<td>0.83</td>
</tr>
<tr>
<td>Better product quality</td>
<td>63</td>
<td>3.67</td>
<td>1.12</td>
</tr>
<tr>
<td>Environmental concerns</td>
<td>64</td>
<td>3.48</td>
<td>1.26</td>
</tr>
</tbody>
</table>

*Scale: 1=not important, 2=little important, 3=moderately important, 4=important, 5=very important.*

“Support of local economy” and “better product quality” were rated the highest as reasons for choosing the local food option, with M = 4.68, SD = 0.83 and M = 3.67, SD = 1.12, respectively. The “other” reason was rated as “important” or “very important” by all respondents who provided a rating (n = 9) in this category. The reason “support of local economy” was rated as “important” or “very important” by 60 of the 66 respondents who provided a rating (91%) for this reason. “Better product quality” was rated as “important” or “very important” by 35 of the 63 respondents who rated this reason (56%). The reason “environmental concerns” was rated as “important” or “very important” by 30 of the 64 respondents who indicated the level of importance (47%). However the high standard deviation indicates a high variation among the ratings of importance given for “better product quality” and “environmental concerns” reasons. Results from t-Test and ANOVA showed no
significant differences between gender, age, or patron classification and the reasons for choosing menu items featuring local food. Previous research has shown differences in those who select local food and those who do not, based on gender, age or socio-economic status (Carpio & Isengildina-Massa, 2009; Tregear & Ness, 2005). Past research has also shown that some reasons for choosing local foods by customers in other non-restaurant settings, such as farmers’ markets and direct markets, were: enhancing the economy, benefiting the environment, and supporting family farmers (Pirog, 2003; Zepeda & Leviten-Reid, 2004).

Respondents who decided to have the local food option and completed the questionnaire \((n = 119)\) had the opportunity to identify their perceptions of what influenced their willingness to pay more for the menus featuring local food. Respondents were presented with six statements; four of these statements related to product attributes of local foods and two statements related to customers’ concerns. Respondents were asked to rate their levels of agreement to these statements using a scale of \(1 = \text{strongly disagree}\) to \(5 = \text{strongly agree}\). Statements related to the products’ attributes included comparisons in taste, health benefits, freshness, and appearance of local food versus non-local. Statements related to consumers’ concerns were about hormones or pesticides in food and the need to support local farmers. Table 4 presents means \((M)\) and standard deviation \((SD)\) of respondents’ ratings of agreement to these statements.

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>M(^a)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to support local farmers</td>
<td>114</td>
<td>4.66</td>
<td>0.49</td>
</tr>
<tr>
<td>Local foods are fresher than non-local foods</td>
<td>114</td>
<td>4.13</td>
<td>0.82</td>
</tr>
<tr>
<td>I am concerned about hormones or pesticides in foods</td>
<td>115</td>
<td>3.72</td>
<td>1.02</td>
</tr>
<tr>
<td>Local foods taste better than non-local foods</td>
<td>115</td>
<td>3.52</td>
<td>0.85</td>
</tr>
<tr>
<td>Products that come from local sources are healthier</td>
<td>115</td>
<td>3.47</td>
<td>0.88</td>
</tr>
<tr>
<td>Local foods have a better appearance than non-local foods</td>
<td>114</td>
<td>3.21</td>
<td>0.74</td>
</tr>
</tbody>
</table>

\(^a\)Scale 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.
The statements “I want to support local farmers” and “local foods are fresher than non-local foods” were rated highest (M = 4.66, SD = 0.49; M = 4.13, SD = 0.82, respectively). However the statement “I am concerned about hormones or pesticides in foods” also had a mean rating above the neutral point (M = 3.72, SD = 1.02) and showed the highest variation among ratings given by respondents.

Of the 114 respondents to the statement “I want to support local farmers,” almost all respondents (113 of 114 respondents, 99%) agreed or strongly agreed that they are willing to pay more for locally sourced menus for this reason. Of the 114 respondents to the statement “local foods are fresher than non-local foods,” 91 respondents (80%) agreed or strongly agreed. Of the 115 respondents to the statement “I am concerned about hormones and pesticides in food,” 72 respondents (63%) agreed or strongly agreed. Of the 115 respondents to the statement “local foods taste better,” 56 patrons (49%) agreed or strongly agreed. Similar results were obtained for the statement “products that come from local sources are healthier,” where 57 of 115 respondents (50%) agreed or strongly agreed. Of the 114 respondents to the statement “local foods have a better appearance than non-local foods,” 35 respondents (31%) agreed or strongly agreed. Results from t-Test and ANOVA showed no significant differences between gender, age, or patron classification and the willingness to pay more for the menus featuring local food.

Past research reported similar results where customers and/or the person responsible for the foodservice operation identified support to local economy, freshness of food, and safety of food as benefits or reasons for buying local foods (Food Processing Center, 2003; Gregoire, et al., 2005; Gregoire & Strohbehn, 2002; Pirog, 2003; Starr, et al., 2003; Zepeda & Leviten-Reid, 2004).

All respondents (n = 202) were asked to rate the frequency they thought this restaurant should feature certain types of local foods in the menu. Types of foods listed included five categories: “fruits,” “vegetables,” “meat,” “dairy,” and an open alternative for “other foods.” For all categories, most of the respondents would like to see the local foods once a week.

Of the 168 respondents to the category “fruit,” 125 respondents (74%) would like to see local fruits on the menu at least once a week. Of the 170 respondents to the category
“vegetables,” 130 respondents (76%) would like to see local vegetables on the menu at least once a week. Of the 161 respondents to the category “meat,” 104 respondents (65%) would like to see local meat on the menu at least once a week. Of the 157 respondents to the category “dairy,” 114 respondents (73%) would like to see local dairy on the menu at least once a week. Of the 40 respondents to the category “other foods,” 31 respondents (78%) would like to see “other foods” on the menu once a week. Items such as local tomatoes, wine and beer in the “other food” category are the products respondents think should be included on the menu once a week. Findings suggested that patrons would like more often to see menu items that are prepared with locally grown ingredients. This demand for new or alternative locally sourced products was identified by the “What’s Hot in 2010” survey (NRA, 2009), which revealed that locally grown produce, locally sourced meats and seafood, and locally produced wine and beer as the menu trends.

All respondents (n = 202) were asked about purchasing considerations, such as where and how food is grown, and asked to rate these levels of agreement using a five-point scale with 1 = strongly disagree and 5 = strongly agree. Table 5 shows mean ratings (M) to these statements and standard deviations (SD) for each item.

### Table 5. Mean Ratings of Respondents to Food Purchasing Considerations of “Where” and “How” Food is Produced

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration of “Where” food was grown</td>
<td>189</td>
<td>3.76</td>
<td>0.93</td>
</tr>
<tr>
<td>Consideration of “How” food was grown</td>
<td>183</td>
<td>3.63</td>
<td>0.94</td>
</tr>
</tbody>
</table>

* Scale: 1=strongly disagree, 2=disagree, 3=I do not think about it, 4=agree, 5=strongly agree.

The mean rating for the consideration of “where” food was grown was a 3.76 on the five-point scale with 113 respondents (60%) of the 189 respondents rating it with a 4 or 5 (agree or strongly agree). Of the 189 respondents, 67 respondents (35%) choose the option “I do not think about it” which was the anchor term provided for “3” on the five-point scale. Past research has identified that people defined local food in terms of where it was grown (Brown, 2003; Pirog & Rasmussen, 2008; The Hartman Group, 2008).
Of the 183 respondents to the consideration about “how” food was grown, about half of the respondents \((n = 92)\) assigned a rating of 4 or 5 (agree or strongly agree). Of the 183 respondents, 81 respondents (44\%) chose the option “I do not think about it” (rating of 3.0 on the five-point scale). Findings suggest that patrons are concerned about knowing where their food is coming from and how it is produced. Several researchers have reported that people defined local food in terms of where the food was produced (Pirog, & Rasmussen, 2008; Wilkins, Bowdish, & Sobal, 2000; Zepeda & Leviten-Reid, 2004). If customers are concerned about where and how food products are being produced, those restaurants that want to include or currently do, can benefit of a marketing promotion strategy highlighting the use of local foods in the menus and the benefits that this bring to the customers and the community.

**Willingness to Pay a Premium Price**

Analysis of premiums assessed and highest premium prices customers identified as what they would be willing to pay for different categories of local foods is presented in this section. Participants were asked to identify if the premiums assessed during the trials were ‘too low,” “low,” “acceptable,” “high,” or “too high.” Of the 199 respondents to this question, 153 respondents (77\%) considered that the premium assessed on the local food menus was acceptable and just 43 respondents (22\%) considered it was either high or too high. Carpio and Isengildina-Massa (2009) reported consumers were willing to pay more for produce and animal products if a better quality in local foods was perceived.

Participants were asked what would be the highest price they would be willing to pay for a lunch featuring a menu with at least one ingredient from local food categories of “fruits,” “vegetables,” “meat,” “dairy,” and an open alternative for “other.” Table 6 shows the highest premium prices customers identified they would be willing to pay.
### Table 6. Number of Patrons by Higher Menu Prices for Local Menu Food Categories

<table>
<thead>
<tr>
<th>Menu Price (^a)</th>
<th>Number of Patrons by Menu Price and Food Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fruit</td>
</tr>
<tr>
<td>$6.50</td>
<td>13</td>
</tr>
<tr>
<td>$6.75</td>
<td>23</td>
</tr>
<tr>
<td>$7.00</td>
<td>32</td>
</tr>
<tr>
<td>$7.25</td>
<td>13</td>
</tr>
<tr>
<td>$7.50</td>
<td>4</td>
</tr>
<tr>
<td>$7.75</td>
<td>2</td>
</tr>
<tr>
<td>$8.00</td>
<td>11</td>
</tr>
<tr>
<td>$8.25</td>
<td>1</td>
</tr>
<tr>
<td>$9.00</td>
<td>0</td>
</tr>
<tr>
<td>$9.25</td>
<td>1</td>
</tr>
<tr>
<td>$9.50</td>
<td>1</td>
</tr>
<tr>
<td>$10.00</td>
<td>3</td>
</tr>
<tr>
<td>$10.25</td>
<td>0</td>
</tr>
<tr>
<td>$12.00</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>122</td>
</tr>
</tbody>
</table>

\(^a\) Current menu price = $6.25

Of the 122 respondents to the category “fruits,” 68 respondents (56%) indicated a willingness to pay a menu price between $6.50 and $7.00 (5% to 12% increase) for a local option, and 30 respondents (25%) indicated a willingness to pay a price between $7.25 and $8.00 (16% to 28% increase). The same results were found for the category “vegetables,” where 68 of the 122 respondents indicated a willingness to pay a menu price between $6.50 and $7.00 (5% to 12% increase) for a local option and 30 respondents (25%) indicated a willingness to pay a price between $7.25 and $8.00 (16% to 28% increase). Three of the 122 respondents (2%) indicated a willingness to pay a price of $10 (60% increase) for the menu including a local fruit or vegetable option.
Of the 122 respondents to the category “meat,” 44 respondents (36%) indicated a willingness to pay a menu price between $6.50 and $7.00 (5% to 12% increase) for having locally sourced meat and 49 of the respondents (40%) indicated a willingness to pay a price between $7.25 and $8.00 (16% to 28% increase). Three of the 122 respondents (2%) indicated a willingness to pay a price of $10 (a 60% increase) and one respondent indicated a premium of $12 (92% increase) for the menu including a local meat option. Of the 116 respondents to the category “dairy” 56 respondents (48%) indicated a willingness to pay a menu price between $6.50 and $7.00 (5% to 12% increase) and 31 of the respondents (27%) indicated a willingness to pay between $7.25 and $8.00 (16% to 28% increase). Three of the 116 respondents (3%) indicated a willingness to pay a price of $10 (a 60% increase) for having dairy as a local option. Results from t-Test and ANOVA showed no significant differences between gender, age, or patron classification and the willingness to pay high premiums for different food categories (Appendix G).

In general, it appears respondents are willing to pay more for a local menu option with meat. Sharma (2007) found patrons of a dining facility were willing to pay premiums for local food; 54 percent of the respondents agreed to pay a premium 18 percent to 36 percent higher than the regular price. Results of this study suggest that the majority of consumers would be willing to pay a premium to get local ingredients and that demographic characteristics (age, sex, status) did not impact the expressed willingness to pay more.

**Analysis of Time and Food Cost Inputs**

*Time Inputs*

The perceived time expended in each of the four main activities in the flow of food, the purchase cost, and the customer’s premiums paid in an educational restaurant for six fresh and/or cooked menu items from three food ingredients were tracked to determine the input and the monetary contribution generated using local ingredients, and to assess whether a possible competitive advantage existed. Two trials each of three foods (carrots, apples, and ground beef) were conducted in the restaurant. Local food items used for the food trials were selected to correspond to ingredients used in the standardized recipes of the menu.
The perceived time spent on purchasing, receiving, storing, and preparing for the three ingredients as estimated by individuals engaged in specific tasks was recorded using a developed Time Unit Report. Estimated times for local and non-local products in each activity were compared. Findings are presented in Table 7. Recorded times for the activities “receiving” and “storing” were combined because these activities overlapped each other. The new term for this combination “receiving/storing” is used in the table.

Table 7. Perceived Time Spent\(^a\) in Main Activities of Flow of Food

<table>
<thead>
<tr>
<th>Main activity</th>
<th>Carrots</th>
<th>Apples</th>
<th>Ground Beef</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-local</td>
<td>Local</td>
<td>Non-local</td>
</tr>
<tr>
<td>Purchasing</td>
<td>6.75</td>
<td>9.00</td>
<td>6.75</td>
</tr>
<tr>
<td>Receiving / Storing(^b)</td>
<td>1.75</td>
<td>18.00</td>
<td>1.75</td>
</tr>
<tr>
<td>Preparing</td>
<td>25.00</td>
<td>25.00</td>
<td>30.00</td>
</tr>
<tr>
<td><strong>Total Perceived Time Spent</strong></td>
<td><strong>33.50</strong></td>
<td><strong>52.00</strong></td>
<td><strong>38.50</strong></td>
</tr>
<tr>
<td><strong>Difference in Total Perceived Time Spent</strong></td>
<td>-</td>
<td><strong>+18.5</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

\(^a\)Time expressed in minutes  
\(^b\)Times for these two activities were combined.

The two activities in the flow of food that presented differences in perceived time input between local and non-local ingredients were purchasing and receiving/storing. For all three food items, there was a known local producer, thus time spent in searching the market, discussion of specifications, and costs was minimal. However, time was expended in reprising the relationship with the producer, notably with the carrot and apple producers. Restaurants initiating local food purchasing should expect greater inputs. Quantities for the
carrots, apples, and ground beef needed in the food trials arrived to the operation in one shipment, respectively. In one study local food distributors reported that cheaper prices and year-round markets were barriers for competing with other distributors (Starr et al., 2003). The carrot producer happened to be on campus and delivered the product to the restaurant. Of the three local products, apples were the ones that required the most time for the purchasing activity. One of the researchers spent time in conversation with the producer discussing apple varieties, size of the product, receiving arrangements, and cost as well as time spent in driving to the producer’s farm to pick up the product (16 miles round trip). The cost of driving to the producer’s farm to pick up the product was added to the purchase cost of apples (discussed in food cost input section).

Payment of apples was made with a personal check at the farm when collecting. For ground beef, contact was made with the university food buyer, which had already purchased from local beef producers in the past; thus searching of the market was minimal. In this case the product was delivered to the facility; however, a delivery fee was assessed (discussed in food cost input section).

During the “receiving/storing” activity, local carrots were the ones that required more time during receiving because the producer required bill payment at the time of delivery. This was done with a personal check made by the researcher to the producer and the researcher completing paperwork for reimbursement by the restaurant.

The preparing step considered cleaning the product and having it ready to be used in the standardized recipe. There were no perceived differences between local and non-local food during this step of the flow of food. However, during cooking, a greater product yield for the local ground beef was noted. The local ground beef was leaner, thus there was less loss of juices and fat during cooking. While product yield was not analyzed as part of this study, restaurant operators should consider this when making purchasing decisions.

Purchasing and receiving were the activities in which more time was spent for the local products than for the non-local. Sharma (2007) mentioned that costs for sourcing, receiving, and storing could be potentially higher for menu items containing local ingredients. Other researchers have identified the challenges of buying local foods. Some of the challenges were order methods, payment procedures, distribution and delivery (Benepe,
et al., 2002; Food Processing Center, 2003; Gregoire, et al., 2005; Gregoire & Strohbehn, 2002; Strohbehn & Gregoire, 2003). The current study showed similar findings suggesting need to develop efficient procedures for purchasing and receiving local foods.

*Food Cost Inputs*

Costs of food purchased by the restaurant for the non-local and local food items used in the food trials (carrots, apples, and ground beef) are presented in Table 8. Purchase costs for the three products were recorded in the Excel form called Food Cost Report. The purchase cost per pound for non-local carrots was $0.49 and the cost for local carrots was $1. It was a percentage difference in cost of more than 100 percent. The purchase cost for non-local apples was $1 per pound while local apples were $1.88 per pound for a percentage difference of 88 percent. The cost of driving to the producer’s farm to pick up the product was added to the purchase cost of apples. The initial cost per pound of apples was $1.50. The total cost of $8.86 for driving sixteen miles ($0.554 per mile) was added to the $35 total purchase cost of apples. The total amount of apples purchased was 23.3 pounds for purchased cost per pound of $1.88. When comparing the non-local ground beef cost of $1.94 per pound with the cost of local ground beef at $4.59 there was a difference in cost per pound of $2.65 what represents a percentage difference of 137 percent. The purchase cost per pound for local ground beef was $3.99 but with a markup of 15 percent for handling and delivery, a final cost per pound of $4.59 was charged.

All local ingredients had a purchase cost higher than those for non-local foods. Gregoire and Strohbehn (2002) identified product cost as one of the barriers for buying local foods in institutional foodservice operations. Sharma, Gregoire and Strohbehn (2009) reported a statistically significant difference between delivery times for local and nonlocal products, with more time needed for local, but no statistically significant difference between sourcing time or food cost.
Table 8. Restaurant Purchase Cost for Products Used During Food Trials

<table>
<thead>
<tr>
<th>Product</th>
<th>Non-local cost</th>
<th>Local cost</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrots</td>
<td>$0.49</td>
<td>$1.00</td>
<td>+$0.51</td>
</tr>
<tr>
<td>Apples</td>
<td>$1.00</td>
<td>$1.88b</td>
<td>+$0.88</td>
</tr>
<tr>
<td>Ground Beef</td>
<td>$1.94</td>
<td>$4.59c</td>
<td>+$2.65</td>
</tr>
</tbody>
</table>

*Cost per pound of product

bLocal price included a markup of $0.38 per pound for transportation cost

cLocal price included a markup of 15 percent for handling and delivery

The total quantity of local carrots purchased for food trials FT1 and FT5 was 8 pounds with a purchase cost of $8. The total quantity of locally purchased apples acquired for food trials FT2 and FT3 was 23.3 pounds with a purchase cost of $35. The total purchase cost for ground beef was $91.77 for 20 pounds of product purchased for trials FT4 and FT6. Standardized recipes in the restaurant yielded 100 portions, a quantity that was initially intended to be at hand for each preparation in each trial with at least the same amount of local products available as forecasted for non-local foods. In days prior to the beginning of the food trials, reservations for lunch at the restaurant were lower than forecasted. Thus, the amount of products (both local and non-local) during the trials was reduced to reflect actual reservations. Final amounts for each local product used during the sixth trials were: 1.5 pounds of carrots, 13.5 pounds of apples, and 7.5 pounds of ground beef. These amounts were used to calculate purchase cost shown in Table 9. Table 9 presents premiums and the difference in purchase cost, difference in time cost (renamed labor cost after introducing the cost per hour) to calculate a possible benefit of using local foods in the menus.

The difference (from Table 8) between purchase cost of local and non-local products for each of the three products and the amounts of product used during trials were used to calculate the “total difference in purchase cost” presented in Table 9.

The regular menu price for lunch meals in this restaurant was $6.25. The menu featuring local carrots had a premium price of $6.75 (additional charge of $.50), the menu featuring local apples had a premium price of $7 (additional charge of $.75), and a premium price of $7.25 (additional charge of $1.00) was assessed for the menu featuring local ground
beef. On combined trial days for the local food options, 25 patrons selected the local carrot menu and paid an additional charge of $0.50, 47 patrons selected the local apple menu and paid a premium of $0.75, and 52 patrons selected the local ground beef menu and paid an additional charge of $1.00. The received premium income presented in Table 9 considered the number of patrons who took the local option and the premium (the extra price paid for a menu item prepared with at least one local food ingredient) they paid for the local menu.

Table 9. Premiums, Difference in Costs, and Contribution Margins of Selling Locally Sourced Menu Items Using Three Different Products

<table>
<thead>
<tr>
<th>Local Food Menu Items</th>
<th>FT1-FT5 (Carrots)</th>
<th>FT2-FT3 (Apples)</th>
<th>FT4-FT6 (Ground Beef)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Menus Sold</td>
<td>25</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td>Received Premium Income</td>
<td>$12.50</td>
<td>$35.25</td>
<td>$52.00</td>
</tr>
<tr>
<td>Total Difference in Purchase Cost</td>
<td>$0.77</td>
<td>$11.88</td>
<td>$19.88</td>
</tr>
<tr>
<td>Total Difference in Labor Cost</td>
<td>$0.43</td>
<td>$5.94</td>
<td>$1.05</td>
</tr>
<tr>
<td>Contribution Margin</td>
<td>$11.30</td>
<td>$17.43</td>
<td>$31.10</td>
</tr>
<tr>
<td>Contribution Margin per Local Menu Sold</td>
<td>$0.45</td>
<td>$0.37</td>
<td>$0.60</td>
</tr>
</tbody>
</table>

The initial amount of products intended to use in the food trials and the “difference in total perceived time spent” of local and non-local products presented in Table 8 were used to calculate the labor cost. The term labor cost refers to units of time with addition of a monetary cost. In order to add a monetary cost to the time unit, the current minimum wage of $7.25 per hour was used (U.S. Department of Labor, 2009).

The “difference in total perceived time spent” between local and non-local carrots was 18.5 minutes, with a cost of $2.31 for the initial amount of local carrots (8 pounds), or $0.29 per pound. The estimated “total difference in labor cost” for local carrots used in food trials was $0.43 ($0.29 multiplied by 1.5 pounds of carrots). The “difference in total perceived time spent” between local and non-local apples was 81.5 minutes, with a cost of
$10.19 for the initial amount of local apples (23.3 pounds), or $0.44 per pound. The estimated “total difference in labor cost” for local apples used in food trials was $5.94 ($0.44 multiplied by 13.5 pounds of apples). The “difference in total perceived time spent” between local and non-local ground beef was 22.75 minutes, with a cost of $2.84 for the initial amount of local ground beef (20 pounds), or $0.14 per pound. The estimated “total difference in labor cost for local ground beef” used in food trials was $1.05 ($0.14 multiplied by 7.5 pounds of ground beef).

The contribution margin corresponded to the profit obtained after subtracting the difference in purchase cost, and the difference in labor cost from the premium for each menu item. Findings suggest a positive contribution to the restaurants when selling menu options prepared with local ingredients, at rates of 45, 37, and 60 cents per plate for carrots, apples, and ground beef, respectively.
CHAPTER V. SUMMARY AND CONCLUSIONS

In this study, a short questionnaire was used with patrons of an educational dining facility to assess their commitment to pay a premium for a promoted locally sourced menu option and identify perceptions about what influenced their willingness to pay this premium. In addition, estimates of time expended to source and prepare the local food options, and purchase costs of local ingredients were determined. The monetary contribution to the restaurant for the decision to source local was determined. A summary of findings and conclusions, study limitations, implications, and recommendations for future research are presented in this chapter.

Summary of Findings and Conclusions

During the six trials featuring local food the facility had a total of 324 guests. Underage patrons were not considered for participation and therefore were not part of the sample; thus, only adult customers attending this educational dining facility for lunch during the six target days when a menu item was locally sourced were asked to voluntarily participate in the study (N = 279). Of the 279 attendees, 202 participants (72%) completed the questionnaire during the six target days. Of the 202 participants who completed the questionnaire, 119 respondents decided to have the local food option. The majority of participants were female (n = 161, 80%) and the age categories in which most of the respondents classified themselves were: between 18 and 25 years (n = 52, 26%), between 46 and 55 years (n = 39, 19%), and over 55 years (n = 80, 40%). The majority of respondents identified themselves as either “student” (n = 58, 29%) or “staff” (n = 75, 37%), although a considerable percent of patrons participating in the trials identified themselves in the “faculty” (n = 33, 16%) or “other” category (n = 36, 18%). Respondents in the “other” category indicated they were a visitor, student’s family member, or a retired university employee. The “customer classification” question was used as proxy to generalize socio-economic status. It was assumed that those who classified themselves as faculty had a higher income level than staff members or students.
Of the 279 attendees, 124 guests selected the local option on one or more of the six trial days for a participation rate of 44 percent. The other 56 percent declined to have the local option and selected the regular menu. The regular menu price for the lunch meal in this restaurant was $6.25. Of the 71 patrons for the combined two trial days for the local food option featuring carrots, 25 patrons (35%) selected the local carrot menu and paid an additional charge of $0.50 (8% premium). Of the 79 patrons that were in the dining operation on the two days featuring local apple menu options, 47 patrons (59%) selected the local option and paid a premium of $0.75 (12% over regular price), and of the 129 patrons that were in the dining facility for the two days featuring local ground beef, 52 patrons (40%) selected the local option and paid an additional charge of $1.00 (16% premium). These findings indicate that consumers were willing to pay premium prices for menus featuring local products when given the opportunity.

Of the 124 guests who selected the local option, 119 respondents completed the questionnaire items rating their reasons for choosing this menu. The reasons these customers reported as those they considered when purchasing local menu options were: support local economy, better product quality, and environmental concerns. All of these reasons had a mean rating above 3.40 on a 5-point scale (1 = strongly disagree and 5 = strongly agree). The highest means were for “support of local economy” and “better product quality” (M = 4.68, SD = 0.83 and M = 3.67, SD = 1.12, respectively). These findings confirmed earlier research by others that suggested the most important reason to choose local food items was the perceived benefit of supporting the local economy. Higher product quality of local products was also identified in previous research as a reason to purchase local foods; findings from this project confirmed that view. Results from ANOVA analysis showed no significant differences between gender, age, or patron classification and reported reasons for choosing the menu featuring local food items.

Respondents (n = 115) identified their perceptions of what influenced their willingness to pay more for the menus featuring local food. Among the perceptions influencing customers’ willingness to pay a premium for a locally sourced menu option; “support to local farmers” was rated the highest with a mean of 4.66 on a 5-point scale with 1 = strongly disagree and 5 = strongly agree. Other perceived influences were “local foods are
fresher than non-local,” “concerns about hormones and pesticides,” “better taste and appearance,” and “health concerns” (with mean ratings ranging from 4.13 to 3.47). These findings suggested that the perceived benefit of supporting the local economy was the reason that influenced patrons’ willingness to pay a premium for a locally sourced menu option.

All respondents \( (n = 202) \) were asked about purchasing considerations such as where and how food is grown, yet not all responded. The mean rating for the consideration of “where” food was grown when purchasing food was a 3.76 on a five-point scale by 113 of the 189 respondents (60%) who rated it with a 4 or 5 (agree or strongly agree). Of the 183 respondents to the question of whether “how” food was grown was considered when purchasing food, about half \( (n = 92) \) assigned a rating of 4 or 5 (agree or strongly agree). These findings suggested that patrons who dined in this educational facility had concerns about knowing where their food is coming from, and how it is produced; hence, their purchasing decisions were influenced by these characteristics.

All respondents \( (n = 202) \) were also asked to identify the highest price they would be willing to pay for a lunch in this facility featuring a menu with at least one local food ingredient from various categories: “fruits,” “vegetables,” “meat,” “dairy,” and “other.” Of the 122 respondents to the category “meat,” 49 respondents (40%) reported they would be willing to pay a price between $7.25 (16% premium) and $8.00 (28% over the regular price). Of the products featured during the food trials, “meat” was the product that people were more willing to pay premium prices.

The two activities in the flow of food that presented differences in perceived time input between local and non-local ingredients were purchasing and receiving/storing. For all three food items, there was a known local producer, thus time spent in searching the market was minimal. However, time was expended in reprising the relationship with the producers, notably with the carrot and apple producers. Of the three local products, apples were the ones that required the most time for the purchasing activity. One of the researchers spent time in conversation with the producer discussing apple varieties, size of the product, receiving arrangements, and cost as well as time spent in driving to the producer’s farm to pick up the product. During the “receiving/storing” activity; local carrots were the ones that required more time during receiving because the producer required bill payment at the time of
delivery. These findings pointed out some of the barriers identified in previous studies of foodservice operations when working with local suppliers. These barriers referred to conflicts in payment procedures, service increased costs (delivery fees), and conflicts in distribution and delivery of products.

All three local products used during the food trials (carrots, apples, and ground beef) had a purchase cost higher than the non-local option. This difference in purchase cost was as high as 88 percent for apples, 100 percent for carrots, and 137 percent for ground beef. Higher price for local food was seemed as a disadvantage or obstacle for local purchasing. In previous research, foodservice operators have identified higher prices in local food products as an obstacle for local food procurement.

This study calculated the contribution margin or the extra revenue generated after the input needed (food and time costs) for each local product tested during the trials. Although products locally sourced had higher purchase costs than the non-local options, and some of the activities in the flow of food were higher in time spent for local ingredients, findings suggested a positive monetary contribution to the restaurant after selling menu options prepared with promoted local ingredients at a premium menu price. The highest contribution margin—if compared to the premium price assessed—was obtained by local menu items featuring meat. This contribution margin per plate sold when using local meat was $0.60 (60% of premium assessed). Thus, this restaurant gained a competitive advantage of $0.60 for each entrée sold (at a premium price of $7.25) after additional input of premium food cost and extra labor time were considered.

Limitations of the Study

Some limitations of this study are recognized. The study was conducted in just one educational dining facility, a nonprofit restaurant staffed by students as part of a class at one university in one state of the United States. Respondents in the sample may not be representative of patrons dining at other types of foodservice operations, consumers in general, or types of restaurants.

Self-reported data rely on respondents to provide accurate information; thus the veracity of the reported findings is subject to truthfulness by respondents. In addition,
respondents were asked to identify their perceptions of their willingness to pay more for a locally sourced menu from a given list, which means participants were limited in their choice of the options provided.

Times expended on purchasing, receiving, storing, and preparing for the three ingredients were estimates made by individuals engaged in specific tasks. The estimates of these times were taken once, thus they do not reflect an average time. These times were used to calculate time costs associated for both local and non-local products. Accuracy of time cost calculation and the contribution margin relied on perceived estimated times.

This study did not consider product variety, organoleptic qualities, or product yields in the establishment of specifications during the purchasing process. Restaurant operators and other foodservice operators should consider these when making purchasing decisions.

Implications

Findings from this research indicated that patrons of this particular operation were willing and did indeed pay premiums for menus featuring local products when given the opportunity. These findings will be useful to foodservice operations looking for new strategies of differentiation such as presenting patrons with locally sourced menu items that are clearly identified on the menu. Findings showed that this particular group of patrons, representing variations in gender, age, and socio-economic status, wished to support local farmers and had some interest in knowing where and how food is produced. Thus promotion of menu item ingredients with a “face” or identification of where or how items were produced could be an effective marketing strategy. Although there are additional inputs needed (such as higher food cost and additional time), this study showed consumers will pay a premium for items they know are from local sources. These findings will also be useful to food producers considering new retail markets beyond farmers’ markets, as they will better understand the need to provide information about their operations and communicate their story.

Findings of this study suggested that the two activities in the flow of food that presented differences in perceived time input between local and non-local ingredients were purchasing and receiving/storing. Those foodservices operations interested in working with
local suppliers should consider ways to minimize these differences and establish better payment procedures, better distributions and delivery, and better service through effective communication strategies.

**Recommendations for Future Research**

The study was conducted in just one educational dining facility at one university in one state of the United States. Future research should include other foodservice operations, in other regions of the country with different population characteristics.

Data in this study relied on respondents to provide accurate information and the veracity of the reported findings was subject to truthfulness of respondents. Future research could include interviews as a method to better understand customers’ perspectives of their willingness and actions to pay a premium for local food menu items.

In this study, respondents were asked to identify their perceptions influencing their willingness to pay more for a locally sourced menu from a given list, which means participants were limited to choose just from the options provided. Variables such as product variety, organoleptic qualities, or product yields were not considered as part of operational input. Restaurant operators and other foodservice operators should consider these variables when making purchasing decisions. Future research could assess impacts to different categories of restaurant operations of marketing unique varieties of food ingredients, or consider food implications of product yield as these relate to preparation and plate waste. Future research should include an analysis of perceptions of consumers, including more attitudinal factors and more product variables to identify possible factors affecting the adoption of local purchasing in restaurants.

Times spent on purchasing, receiving, storing, and preparing for the three ingredients were estimates made by individuals engaged in specific tasks. These times were used to calculate time costs associated to both local and non-local products. Accuracy of time cost calculation and the contribution margin relied on perceived times. Future research should include an analysis of time costs using specific methods and tools, such as a chronometer, to measure the time units.
REFERENCES


Food Processing Center. (2003). Approaching foodservice establishments with locally grown products. Lincoln, Nebraska: Institute of Agriculture and Natural Resources, University of Nebraska.


APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL

MEMO IRB 09-455

The Institutional Review Board (IRB) Chair has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.

- Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to use the documents with the IRB approval stamp in your research.

Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.
APPENDIX B. LOCAL FOOD QUESTIONNAIRE

Featuring locally sourced menu items.

The purpose of this questionnaire is to identify factors influencing customer’s willingness to pay a premium price for a locally sourced menu option. Please complete the questions below.

Part 1: Featuring Local Food
1. Did you choose the menu option featuring the locally sourced menu item?
   Yes____
   No _____ (If no, please go to Part 2)

2. Please rate the following reasons why you made the decision to purchase the local menu. Use the following scale:
   (1=Not important, 5=Very important)
   ____ Better product quality
   ____ Support of local economy
   ____ Environmental concerns
   ____ Other (specify):_____

3. Please indicate your level of agreement or disagreement to the following statements by circling the appropriate response:

<table>
<thead>
<tr>
<th>I am willing to pay more for the locally sourced menu option because:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local foods taste better than non-local foods</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>Products that come from local sources are healthier</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>I am concerned about hormones or pesticides in foods</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>Local foods are fresher than non-local foods</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>Local foods have a better appearance than non-local foods</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>I want to support local farmers</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>

Part 2: Local Food Considerations
4. Rate the frequency that you think the Joan Bice Underwood Tearoom should feature each of these type of local foods using this scale:
   1 2 3 4
<table>
<thead>
<tr>
<th>Once a week</th>
<th>Once every two weeks</th>
<th>Once a month</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other food</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please specify</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. When purchasing food, I usually consider where and how it was grown.
<table>
<thead>
<tr>
<th>Where</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>I do not think about it</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
</tr>
<tr>
<td>Strongly</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
</tr>
</tbody>
</table>

(over)
Part 3: Willingness to pay more?
6. The premium assessed on the local food option today was:
   ___ too low
   ___ low
   ___ acceptable
   ___ high
   ___ too high

7. What is the highest price you would pay for a lunch in the Tearoom featuring a menu with at least one of these local food items?
   Fruits ___
   Vegetables ___
   Meat ___
   Dairy ___
   Other ___

8. I am willing to pay a premium of $___ for a meal featuring at least one local food item on the Tearoom menu. Please complete chart below for each type of food:

<table>
<thead>
<tr>
<th></th>
<th>$0.00</th>
<th>$0.50</th>
<th>$0.75</th>
<th>$1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Part 4: What about you?
9. What is your gender?
   ___ Male
   ___ Female

10. What is your age?
    ___ 19-25 years
    ___ 26-35 years
    ___ 36-45 years
    ___ 46-55 years
    ___ over 55 years

11. What is your classification?
    ___ Student
    ___ Faculty
    ___ Staff
    ___ Other
    Please specify________

12. Please identify the frequency with which you dine in the Tearoom:
    ___ at least once a week
    ___ at least once every other week
    ___ at least once a semester
    ___ less than once a semester

Thank you for your time and input. Please leave on your table or take to the box on the cashier stand.
## APPENDIX C. TIME UNIT REPORT

<table>
<thead>
<tr>
<th>PRODUCT:</th>
<th>CATEGORY:</th>
<th>Local</th>
<th>Non-Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>MENU ITEM:</td>
<td>MAIN ACTIVITY:</td>
<td>PURCHASING</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Activity Description</td>
<td>Estimation time (finish time – start time)</td>
<td>Total Time expended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN ACTIVITY:</td>
<td>RECEIVING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Activity Description</td>
<td>Estimation time (finish time – start time)</td>
<td>Total Time expended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN ACTIVITY:</td>
<td>STORING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Activity Description</td>
<td>Estimation time (finish time – start time)</td>
<td>Total Time expended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN ACTIVITY:</td>
<td>PREPARING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Activity Description</td>
<td>Estimation time (finish time – start time)</td>
<td>Total Time expended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D. EXAMPLE OF FOOD COST REPORT

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount</th>
<th>Unit</th>
<th>Cost</th>
<th>Quant</th>
<th>R. Cost</th>
<th>L. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pork Sausage</td>
<td>2</td>
<td>Lb</td>
<td>$3.28</td>
<td>0.8</td>
<td>$2.62</td>
<td>$2.62</td>
</tr>
<tr>
<td>Beef Ground</td>
<td>6</td>
<td>Lb</td>
<td>$1.94</td>
<td>2.4</td>
<td>$4.66</td>
<td></td>
</tr>
<tr>
<td>Beef Ground Local</td>
<td>6</td>
<td>Lb</td>
<td>$4.59</td>
<td>2.4</td>
<td></td>
<td>$11.01</td>
</tr>
<tr>
<td>Onion Dehydrated</td>
<td>0.1875</td>
<td>Lb</td>
<td>$4.07</td>
<td>0.075</td>
<td>$0.31</td>
<td>$0.31</td>
</tr>
<tr>
<td>Tomatoes, canned</td>
<td>6.625</td>
<td>Lb</td>
<td>$0.49</td>
<td>2.65</td>
<td>$1.29</td>
<td>$1.29</td>
</tr>
<tr>
<td>Tomato paste</td>
<td>1.5</td>
<td>Lb</td>
<td>$1.99</td>
<td>0.6</td>
<td>$1.19</td>
<td>$1.19</td>
</tr>
<tr>
<td>Tomato puree</td>
<td>7</td>
<td>Lb</td>
<td>$0.49</td>
<td>2.8</td>
<td>$1.37</td>
<td>$1.37</td>
</tr>
<tr>
<td>Garlic</td>
<td>2</td>
<td>tsp</td>
<td>$0.10</td>
<td>0.8</td>
<td>$0.08</td>
<td>$0.08</td>
</tr>
<tr>
<td>Salt</td>
<td>3</td>
<td>Tbsp</td>
<td>$0.10</td>
<td>1.2</td>
<td>$0.12</td>
<td>$0.12</td>
</tr>
<tr>
<td>Pepper</td>
<td>2</td>
<td>tsp</td>
<td>$0.10</td>
<td>0.8</td>
<td>$0.08</td>
<td>$0.08</td>
</tr>
<tr>
<td>Sugar</td>
<td>4</td>
<td>Tbsp</td>
<td>$0.10</td>
<td>1.6</td>
<td>$0.16</td>
<td>$0.16</td>
</tr>
<tr>
<td>Oregano, ground</td>
<td>5</td>
<td>tsp</td>
<td>$0.10</td>
<td>2</td>
<td>$0.20</td>
<td>$0.20</td>
</tr>
<tr>
<td>Bay Leaves</td>
<td>2</td>
<td>leaves</td>
<td>$0.10</td>
<td>0.8</td>
<td>$0.08</td>
<td>$0.08</td>
</tr>
<tr>
<td>Majoram, whole leaf</td>
<td>1</td>
<td>tsp</td>
<td>$0.10</td>
<td>0.4</td>
<td>$0.04</td>
<td>$0.04</td>
</tr>
<tr>
<td>Thyme, Whole Leaf</td>
<td>1</td>
<td>tsp</td>
<td>$0.10</td>
<td>0.4</td>
<td>$0.04</td>
<td>$0.04</td>
</tr>
<tr>
<td>Basil, Whole Leaf</td>
<td>1</td>
<td>tsp</td>
<td>$0.10</td>
<td>0.4</td>
<td>$0.04</td>
<td>$0.04</td>
</tr>
<tr>
<td>Worcestershire sauce</td>
<td>5</td>
<td>tsp</td>
<td>$0.10</td>
<td>2</td>
<td>$0.20</td>
<td>$0.20</td>
</tr>
<tr>
<td>Cheese, Mozzarella</td>
<td>4.5</td>
<td>Lb</td>
<td>$2.29</td>
<td>1.8</td>
<td>$4.12</td>
<td>$4.12</td>
</tr>
<tr>
<td>Cottage Cheese</td>
<td>3</td>
<td>Lb</td>
<td>$1.30</td>
<td>1.2</td>
<td>$1.56</td>
<td>$1.56</td>
</tr>
<tr>
<td>Noodles, lasagna</td>
<td>2.1875</td>
<td>Lb</td>
<td>$1.66</td>
<td>0.875</td>
<td>$1.45</td>
<td>$1.45</td>
</tr>
</tbody>
</table>

Total Cost

Notes: Onion Dehydrated 3 Lb = $12.217
Cost without apples: $14.95

$19.61 $25.96
Trial: Ground Beef 2  
Week: 14  
Course: Meat Loaf  
Guests Expected: 54  

Recipe Yield: 96
Factor: 0.3333
Servings: 31.997

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount</th>
<th>Unit</th>
<th>Cost</th>
<th>Quant</th>
<th>R. Cost</th>
<th>L. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pork, Lean Ground</td>
<td>5</td>
<td>Lb</td>
<td>$3.28</td>
<td>1.6665</td>
<td>$5.47</td>
<td>$5.47</td>
</tr>
<tr>
<td>Beef Ground</td>
<td>15</td>
<td>Lb</td>
<td>$1.94</td>
<td>4.9995</td>
<td>$9.70</td>
<td>$9.70</td>
</tr>
<tr>
<td>Beef Ground Local</td>
<td>15</td>
<td>Lb</td>
<td>$4.59</td>
<td>4.9995</td>
<td>$22.94</td>
<td>$22.94</td>
</tr>
<tr>
<td>Bread Crumbs</td>
<td>2</td>
<td>Lb</td>
<td>$0.98</td>
<td>0.6666</td>
<td>$0.66</td>
<td>$0.66</td>
</tr>
<tr>
<td>Milk, Non Fat</td>
<td>0.3125</td>
<td>Lb</td>
<td>$1.72</td>
<td>0.10415625</td>
<td>$0.18</td>
<td>$0.18</td>
</tr>
<tr>
<td>Salt</td>
<td>0.25</td>
<td>Lb</td>
<td>$0.10</td>
<td>0.08333225</td>
<td>$0.01</td>
<td>$0.01</td>
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<td>Pepper</td>
<td>1</td>
<td>Tbsp</td>
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<td>0.3333</td>
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<tr>
<td>Eggs, whole</td>
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<td>Lb</td>
<td>$1.50</td>
<td>0.3333</td>
<td>$0.50</td>
<td>$0.50</td>
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<tr>
<td>Worcestershire</td>
<td>0.25</td>
<td>cup</td>
<td>$1.09</td>
<td>0.083325</td>
<td>$0.09</td>
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<td>Tobasco sauce</td>
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<td>0.3333</td>
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<tr>
<td>Onions Dehydrated</td>
<td>0.25</td>
<td>Lb</td>
<td>$4.07</td>
<td>0.083325</td>
<td>$0.34</td>
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</tbody>
</table>

Total Cost: $17.00 $30.25

Notes: Onion Dehydrated 3 Lb= $12.217
Cost without apples: $7.31
APPENDIX E. EXAMPLE OF SERVER SCRIPT

Server Script (Example)

1. Greet guests, escort them to the table.
   - Take questionnaires with you.
   - Questionnaires are going to be located in a box by the display case.

2. Welcome customers to the Joan Bice Underwood Tearoom.
   - Welcome to the Joan Bice Underwood Tearoom!
     My name is [name of server] and I will be your server today. Today's menu is:
     Individual California Tuna Casserole
     Pear and Apple Salad
     Kolaches
     Cream Puff

     Today as part of a research project (There is more information on the table display) we
     are featuring a locally sourced menu item as an alternative:

     Pear and Apple Salad featuring local apples from Berry Patch Farm, Nevada, IA

     There is an additional $0.75 charge for the local food option.
     Would you like to try the local food option?

3. Take customer’s order.

4. Ask customers to complete the questionnaire.
   - We are asking all customers if they would like to complete this questionnaire.
   - Would you like to complete it?
     Participation is voluntarily, anonymous and it can be terminated at any point.

5. Go to Kitchen, pick up tray and go to beverage service area.

6. Tell the TA in charge of the local food project (Allan) how many salads, local and non-local you
   are going to need.
   - “Local food” salads are going to be identified with a string of lemon peel on the plate. None
     for regular option.
   - If your beverage fit on the tray, take beverages. If they do not fit serve the salads first. Then
     come back for the drinks.

7. Remainder of service is normal Tearoom service.

8. Do not forget to give the “Local food charge card” to the customers that said “yes” to the local
    food option.

9. If after lunch customers leave questionnaires on the table, taken these questionnaires to the
    box located by the display case.

   Thank you for your help.
APPENDIX F. EXAMPLE OF TABLE DISPLAY

Hello! I am a graduate student in the Foodservice and Lodging Management program investigating local food use in retail foodservices. Please consider helping me with my research project by completing the questionnaire.

Your participation will indicate consent. There is no risk from participating in this study. Your insight will be useful to restaurants and other foodservices wishing to incorporate foods from local producers on their menus.

*It should only take a few minutes of your time.*

*All information will be presented in summary form. Your response will be kept confidential.*

Allan Ortiz  
Graduate Student  
Foodservice and Lodging Management (FLM)

Jonagold Apples from  
Berry Patch Farm, Nevada, Iowa

The Tearoom is featuring local foods on the lunch menu. We appreciate your participation in this study. Your participation is completely voluntary and you may refuse to participate or leave the study at any time.

Local food use has been identified as a consumer trend, yet typically these products cost more. The purpose of this study is to identify factors influencing the willingness of patrons to pay a premium for locally sourced menu items.

**Today’s Menu**

- Individual California Tuna Casserole: $7.00
- Pear and Apple Salad featuring local apples from Berry Patch Farm, Nevada, Iowa: $6.25
- Kolaches
- Cream Puff

**Tearoom Menu**

- Individual California Tuna Casserole
- Pear and Apple Salad
- Kolaches
- Cream Puff
ONEWAY Willingness to pay highest prices for local food BY Age Classification

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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hightest price in the Tearoom for &quot;Fruit&quot; as local ingredient</td>
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<tr>
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### ONE WAY Willingness to pay highest prices for local food by gender classification

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### ONE WAY Willingness to pay highest prices for local food by Classification Classification

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