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The Dissemination of Local Food Rhetoric via Restaurant Wait Staff: A Pilot Study

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ABSTRACT

Objective: The purpose of this study was to describe restaurant waiter and manager perceptions of local foods with regard to customer inquiries, personal values, barriers of local foods, ingredient source, waiter training, and personal definitions of local food.

Methods: A cross-sectional study design was used to collect data from restaurant managers, chefs, and wait staff at local food promoting restaurants (LFPR) in an urban county in central New York State. The study design involved questionnaires consisting of close-ended and open-ended questions about local foods. Questions regarding local food perceptions, motivations, customer inquiries, training, source, and barriers to local foods were asked of the wait staff. Managers and/or chefs were asked questions regarding the source and amount of their ingredients, training methods, and barriers to local foods.

Participants: The participants were 27 managers, chefs, or wait staff from eight restaurants in central New York restaurants that claim to explicitly use local foods on their menus or promote them in their advertisements. The study focuses on restaurants promoting local foods on their menus or in advertisements. Four participants answered survey questions through face-to-face interviews. The remaining 23 participants completed a paper version of the questionnaire.

Results: The most frequently mentioned motivators for serving local food on the menu included supporting the local economy (83%) and reducing environmental impact (59%). Wait staff reported most commonly asked customer questions related to the origin menu items. Training on local foods ranged from no training to taste testing dishes to bus trips to local farms. The most wait staff (63%) indicated that “most of the menu items” contain local ingredients, yet most managers or chefs (75%) stated that half of their ingredients or less came from local sources. More than half (61%) of wait staff indicated feeling “very confident” in addressing customers’ questions about local food. Four wait staff respondents (29%) were accurate in identifying the sources of the restaurant’s ingredients. No significance was found between accuracy and confidence level in addressing questions about local foods. The greatest barrier to sourcing local food was the inconsistent supply of local foods, which was reported by 100% of chefs and 65% of wait staff.

Conclusions: Local food promoting restaurants have the potential to be innovators in the local food movement through communicating local food benefits and messages via the wait staff. Increased adoption of local food consumption may potentially enhance the development of a more sustainable food system. Restaurant wait staff may have a false sense of confidence in addressing customer questions about local foods. This suggests that more training on local foods should be emphasized in the restaurant. The results of this research point to a need for further studies to investigate how the customer interprets information provided by the wait staff about local foods. Further, additional studies should look into the true source of ingredients on LFPR menus.

THE DISSEMINATION OF LOCAL FOOD RHETORIC VIA RESTAURANT WAIT STAFF: A PILOT STUDY

BY

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PART 1: LITERATURE REVIEW

INTRODUCTION

Consumer food decision-making is increasingly influenced by "local" attributes. This is a result of the local food movement gaining popularity over the past few decades.[1,2] "Locavore" was the New Oxford American Dictionary's word of the year in 2007, being defined as "a person whose diet consists only or principally of locally grown or produced food."[3] Nevertheless, there is no general consensus on the definition of "local" as it pertains to food. Local food may denote geographic distance,[4,5] accessibility of the item, [6,7]or even interconnections between community members.[8, 9, 10] Despite the lack of a consistent definition, consumers are more interested than ever in purchasing foods they believe to be local. [1,2,11,12] Studies show consumers are purchasing local food because it tastes better,[13] is of higher quality,[13] and because it helps support the local economy.[13]

In response to growing consumer demand, restaurants are featuring locally sourced ingredients on their menus.[14] The National Restaurant Association cited locally sourced food as the number one trend in their 2015 culinary forecast.[14] In addition, it was cited as the top culinary trend that has grown the most over the past ten years.[15] "Fresh, local food;" "Farm-to-table;" "Locally sourced ingredients," are all examples of advertisements used by restaurants. But what do these terms and claims really mean? Since diners generally do not have the opportunity to interview a manager about the restaurant's purchasing practices, answering customer questions is often the responsibility of the wait staff. Because of this, the level of awareness the waiter has about local food and the fidelity of restaurant procurement practices

to menu claims will impact how accurately he or she will be able to answer customer questions.[16] The accuracy of wait staff responses may depend on training provided by the management,[17] the transparency of a restaurant's procurement practices, a wait staff member's personal interest in local food, or the quantity of local food the restaurant serves.[16]

There is limited research that describes local food perceptions of restaurant wait staff. The increasing consumer interest coupled with restaurant claims of local food usage calls for a need to evaluate restaurant wait staff and management perceptions, motivations, and understanding of local food, which will help determine what information is being communicated to the customer via the restaurant wait staff.

LOCAL FOOD MOVEMENT

Local food served in restaurants is only a small segment of the much larger and multi-faceted local food movement, which has an extensive history. It has experienced a recent resurgence as seen with a rise in the number of farmers' markets, retailers, and restaurants carrying local foods within the past few decades.[18] The local food movement stems from other social and environmental movements, which ultimately led to increased consumer awareness in food production, concern for environmental sustainability, and interest in supporting small producers versus large corporations.[1,2] The foundation of the movement can be traced back to the Great Depression and the severe drought during the 1930s.[2] More than 20% of the Great Plains rural family farms sought federal assistance, which resulted in the creation of the Agricultural Adjustment Act (AAA) of 1933.[2] The AAA provided a safety net for commodity farmers (corn, rice, wheat, soybeans, sugar) and allowed these crops to be purchased for low

prices.[2] This made it harder for smaller farmers to compete, resulting in the loss of many small farms and the growth of agribusiness.[2] In order to survive, small farmers had to group together to sell to specialty shops, food co-operatives, or directly to the consumer.[19]

Publication of Rachel Carson's *Silent Spring* in 1962 shed light on the dangers of agricultural pesticides and the environmental risks and sparked a public interest in consuming natural foods, and an overall concern for the environment.[20] Farmers' markets became a haven for people seeking natural food products.[20] In 1970, a total of 340 farmers' markets were in operation within the United States.[21] This dramatically increased shortly after when, in 1976, the Farmer-to-Consumer Direct Marketing Act was passed, allowing farmers and community members to organize markets.[21] Farmers' markets listed in USDA National Farmers Market Directory are up more than four times from 1994.[22] Today, there are 8,476 farmers' markets across the nation.[23] In addition, community supported agriculture (CSA) drastically increased from two CSAs in the mid-1980s to 3,637 by 2009.[24] The Director of "Local Harvest," an online portal for farmers' markets and CSAs, reported more than 4,500 active CSAs in 2012.[25]

In the 1980s, the practice of "fair trade" began, which focused on social justice issues for artisan producers and primary producers in developing countries.[26] In 1997, fair trade activists, recognizing unfair labor practices within the United States, founded a non-profit called *Red Tomato*, focusing on cultivating a sustainable, ethical food system.[26] *Red Tomato* was founded out of the desire to connect farmers with consumers through good produce. The non-profit now functions as a regional distribution center for small farms and apple orchards, reaching out to over 200 retailers.[26] Fair Trade USA is yet another non-profit organization certifying fair-trade products.[27] Their mission is about supporting farmers in developing countries by

providing them with fair prices and safe working conditions to ensure fair and sustainable practices by eliminating exploitation.[27] In 2002, an International fair trade certification mark was developed, appearing on products to ensure customers that fair trade practices were used in the making of the product.[28] The fair trade certification now appears on products in over 50 countries.[28]

The United States Department of Agriculture launched a national program in 2002 for the certification of organic food products.[20] However, many consumers still did not trust corporate food systems to maintain their integrity, even with the new *organic* labeling.[20] In 2006, U.S.-grown organic spinach was contaminated with *E. coli*, resulting in three deaths and 199 illnesses.[29] This triggered individuals' desire to purchase foods locally from farmers they knew and trusted.[20] Best-selling books such as *Fast Food Nation*,[30] and *The Omnivore's Dilemma*[31] increased mainstream public interest in the changing ways food is grown, processed, and distributed in the United States.[20] Similarly, a number of food documentaries such as *Food, Inc.,*[32] *The Future of Food,*[33] *and Hungry for Change*[34] provided society with imagery of the industrial food system and its negative impact on nature, society, and humanity.[20]

A similar movement was occurring in Italy around the same time, beginning in the 1980s. Carlo Petrini established the Slow Food Movement in Rome, Italy, when a McDonald's was set to open at the base of the Spanish Steps.[35] Petrini protested the event, and encouraged people to adopt a "slow food" lifestyle.[35] Today, Slow Food International has over 100,000 members in 153 countries.[36] The principles of Slow Food include: supporting local communities by bringing producer and consumer closer together; educating others about agricultural practices; preserving traditional practices; and protecting the natural environment.[36] Slow food

choices are guided by three questions: is it good?; is it clean?; is it fair?[37] Slow Food's founding ideals are similar to those of the local food movement; however, Slow Food's principles are much more defined than local foods.

The concept of local agriculture that benefits a community's social and economic development has been termed "civic agriculture."[37,38] Civic agriculture is the antithesis of commodity agriculture, which can be identified by the increasingly global and industrial-capitalist food system.[38] Commodity agriculture's primary objective is to produce the greatest amount of food for the least cost.[38] On the other hand, civic agricultural is based largely on smaller-scale, and locally oriented production and distribution.[38,39] Civic agriculture's primary objective is to improve farmer income and to revitalize rural communities and economies.[40] The local food movement incorporates the ideas of civic agriculture, aiming to help community's social and economic development.

The local food movement has been built upon a concern for the environment, an interest in natural foods, and the desire to form a sustainable relationship between producer and consumer. Understanding where the local food movement came from is important when considering current consumer qualifications of local foods and the motivators behind purchasing them.

DEFINING LOCAL

Despite the ubiquity of the term 'local', it still lacks a universal definition. Many consumers, government agencies, and scholars alike tend to associate local with a geographic characterization.[4,5] "According to the definition adopted by the U.S. Congress in the 2008 Food,

Conservation, and Energy Act (2008 Farm Act), the total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or within the State in which it is produced."[4] Time Magazine noted, "To put the distance in perspective, a drive from Washington, DC, to Boston is about 400 miles, which means 'local' is not necessarily close-by."[41] Some may adopt this definition, but many consumers have a wide variety of perceptions of what local means to them. 51% of consumers polled in Packaged Facts National Consumer Survey conducted in November 2014 think local food should mean being "produced or grown within 50 miles of where it is sold" and a further 24% extend the radius to 100 miles.[5]

While many people associate local foods with geographic distance, local is still a relative concept that differs between producer and consumer. Blake et al. found that when viewed from the consumer perspective, the constructions of local were less straightforward than when viewed from the farmers' perspective.[42] For consumers, the distinction between a food produced 30 miles away was no different from being produced 50 or 100 miles away.[42] However, when distance was taken out of the equation, it had more meaning such as supporting a green grocer versus a national supermarket chain.[42] Local food can also include characteristics such as accessibility of the item, or if the food has unique characteristics.[6,7] Local and seasonal are also used frequently when referring to fruits and vegetables.[6] In addition to distance or location that the food comes from, the method used for production of the food, the size of the farm, and whether or not the operation is local all come into play when consumers conceptualize local.[43] Some conceptualizations of local food do not necessarily equate to food grown locally, but it could also imply a recipe of a given region. Specialty foods with place-name

associations, such as Maryland crab cakes, Buffalo chicken wings, Maine Lobster, and New England clam chowder have the potential to be considered local even if the ingredients are not produced locally.[6]

Urban Foodsheds written by Arthur Getz in 1991 examined the concept of a "foodshed."[44] Getz presented the idea that a local foodshed not only describes a geographic area in which foods are grown, but also the social and cultural elements of a community.[9,44] In a similar concept, Feenstra defined community food systems as ''a collaborative effort to build more locally based, self-reliant food economies—one in which sustainable food production, processing, distribution, and consumption [are] integrated to enhance the economic, environmental, and local health of a particular place.''[45] Kremer and DeLiberty stated "Local food systems are not merely a delineated geography or a flow of consumer goods from production to consumption. They are natural and social networks formed through common knowledge and understanding of particular places, embedded in their localities."[46] Shawn A. Trivette divided the defining factors of local foods into two categories: local by proximity and local by relationship.[47] In other words, local food can be either defined by distance or by the relationship that is developed between producer and consumer.[47]

Despite definitions going beyond geographic boundaries, at times, consumer motivations are called into question regarding their desire to purchase more local food. "There is a risk that only the language, but little of the substance of sustainability will be adopted."[8] "Despite its success or perhaps more accurately because of its success, the local food movement (in the U.S. at least) may be distancing itself from its systemic roots, exchanging

rhetoric for the harder work of contextual analysis."[10] Therefore, it is important to understand consumer motivations behind purchasing local foods.

CONSUMER MOTIVATIONS

While consumers tend to have differing views regarding the definition of local food, their motivations for purchasing local food appear to be more consistent. Several national surveys reveal factors contributing to interest in purchasing local food.[11,12] A consumer survey at a farmers' market found that quality of products offered and the ability to support the local community were the greatest contributing factors toward buying local food.[48] Healthier diet and environmental concerns were also motivators for purchasing food at a farmers' market versus a grocery store.[48] Positive attitudes toward cooking were found to significantly increase the probability of buying local food.[11] On the other hand, the concern of the cost of local food significantly decreased the probability of buying local food.[11] Gender, age, education, race, and religion had no significant impact on the probability of buying local food.[11] Consumers have shown preferences for locally grown food over food simply advertised as being grown within the U.S.[49] Studies comparing consumer willingness to pay for local versus organic found that local had a higher willingness to pay than organic.[50,51,52,53] One study looking at consumer preferences for potatoes labeled organic, GMO-free, and "Colorado-grown," respectively found that customer's willingness to pay was significantly higher for "Colorado-grown" than the other two labels.[50] The distance food travels from producer to consumer may be more representative of sustainability than the organic certification.[51] This could be why customers were more willing to pay for a local potato versus an organic potato.

A study looking at perceived benefits and challenges in a sample of 19 individuals participating in a "Local Food Diet Challenge" found that perceived benefits included: learning about the local food system; better taste, freshness, quality; personal enjoyment; and ability to challenge self.[54] The challenges, on the other hand, included: higher cost for some local foods; increased meal preparation time; lack of convenient foods; lack of variety of foods available; and difficulties in social situations centered around food or eating out.[54]

The motivations for joining a Community Supported Agriculture (CSA) are diverse, including the desire to support the local economy, the importance of environmental values, and the development of a strong sense of community.[55] The benefit of a strong sense of community reduced the negative perception barrier that CSA foods tend to be too expensive.[55] Thilmany et al. found that 30% of consumers preferred to purchase fresh produce directly from the producers or at a farmers' market as opposed to buying produce from a store without the direct link to the farmer.[56] "Variety available" and "support for local producers" ranked higher among consumers who preferred to purchase produce directly from farmers compared to other consumers.[56]

Through a series of focus groups at the University of Reading in the UK, Chambers et al. concluded, "local foods were judged to be of a higher quality, particularly in terms of freshness as the food had travelled less distance."[13] Respondents also believed local foods tasted better than non-local foods.[13] Non-local foods were defined in the study as either "national foods," which were produced in the UK, or "imported foods," which were produced abroad.[13] Other motivations for consumers to "buy local" include supporting their local economy, or knowing where their food is coming from.[13]

In a study conducted with food retailers in Oregon's Willamette Valley, 70% of respondents considered foods that were processed, but not necessarily grown within the local area to be classified as "local food" because the processing centers were supporting the local economy.[43]

Regardless of the impetus for purchasing local foods, consumers are requesting them more than ever. The results of Packaged Facts' November 2014 National Consumer Survey showed that 33% of respondents consciously purchase locally grown or locally produced foods once or more than once a week, and an additional 23% purchase local foods several times a month, while only 22% say they don't consciously purchase local foods at all.[5] Today, consumers can find local foods to purchase in a variety of settings from farmers' markets to grocery stores, to restaurants.

LOCAL FOOD IN RESTAURANTS

Due to customer demands for local foods, restaurants are attempting to meet the growing need by purchasing local foods to include in their menu items.[14] According to the National Restaurant Association, the proportion of table service operators reporting an interest in locally sourced menu items among their patrons increased from seven out of every ten operators in 2013 to eight out of every ten in 2014.[14] In a consumer survey also conducted by the National Restaurant Association, 69% of consumers say they are more likely to visit a restaurant that offers locally produced food items.[57]

Restaurant managers might choose to source foods locally to draw in more customers,[58] support the local economy,[17, 59,6059] reduce their environmental impact,[17] or to increase

ingredient quality and flavor in their dishes.[16,17,58,60] Interviews of restaurant and institutional food service managers in Colorado were conducted to determine their food procurement criterion.[17] Amory Starr et al. describes that for local restaurants, the chief factors for buying local are, "supporting other local businesses, buying products that minimize impact on the environment, choosing products that are grown and processed locally."[17] Further, product quality was among the top reasons given for purchasing decisions in locally owned restaurants.[17] Amory Starr et al. also interviewed buyers working for chain restaurants about the sourcing of their ingredients. Of the corporate restaurants contacted, 63% of respondents reported having no role in purchasing decisions because corporate headquarters makes them.[17] In their study of purchasing restaurant food purchasing decisions, Inwood et al. found that "taste, farm production practices (such as organic), convenience, and price" were the most common factors considered when buying local items.[16]

Restaurant chef respondents who did not source locally stated that they did not know where to find local products or local producers never approached them.[16] Inwood et al. found the most common responses of independent restaurants who did not buy more local foods were that non-local food sources are: dependable, reliable, convenient to have one supplier, and easy to obtain refunds.[16] A focus group of restaurant chefs conducted in Las Vegas, Nevada found that chefs were willing to pay a higher price for local foods, but remarked that producers need to let them know what products are available and when they are available, so that they may plan seasonal menus in advance.[58] On the other side of the discussion, a focus group among producers stated that they would be interested in providing local products to restaurants, but did not have enough information to do so.[58] Sharma et al. suggest that

producers who approach restaurant managers with a list of products and prices, or those who develop relationships with restaurant management are more likely to sell to the restaurant market.[61]

Overall, the literature suggests varying motivations drive restaurant management's desire to source locally, however, there are perceived and real obstacles for some restaurants that may prevent them from doing so. A survey conducted through a Midwestern University, exploring restaurant chef concerns related to local foods found that the main perceived obstacles to purchasing local food was the consistency of quality of local products and the ability to produce needed products locally due to the climate.[58] Another major obstacle for the chefs was that they were unsure where to obtain local foods.[58] Yet another study examining perceived barriers of purchasing local food among restaurant operators found that while year round availability was the greatest obstacle, working with multiple vendors was cited as the second-greatest obstacle.[59]

The Economic Research Service of the USDA conducted a study using nationally representative data on the sale of local food either through direct-to-consumer or through intermediated channels (grocer, restaurant).[62] Small farms (those with less than $50,000 in gross annual sales) accounted for 81 percent of all farms reporting local food sales in 2008.[62] It was found that small farms were more likely to sell directly to the consumer, whereas larger farms were more likely to make a profit through intermediated channels.[62] This could be reasoning as to why small local farms do not reach out to restaurants in the first place, due to their inability to supply adequate quantities of their products at the restaurants' price point.

Restaurants that offer local food are then faced with the decision whether or how to make sourcing transparent to customers. Some restaurants may choose to promote this on their menu, a website, window signage, or a combination of advertising techniques. Inwood et al. conducted a study, which interviewed restaurant chefs regarding their use and promotion of local foods.[16] He found that restaurants that source a high volume of their ingredients locally have been found to be more likely to display the locality of the menu items on menus or specials boards within the restaurant.[16] The trend of advertising local items decreased if a restaurant sourced a lower volume of local ingredients.[17] Chefs at restaurants who source a high volume of local foods were interviewed about advertising techniques, to which they responded: "We don't want to overload the customer with too much information and push things on them. Some of them don't want to know."[16] Some restaurants may find that their customers want to know where their food comes from, whereas other restaurants believe their clientele are more concerned about the price or the overall taste. In addition to overloading the customer with information, the restaurant does not want to falsely advertise if they have to obtain ingredients elsewhere after the local growing season has come to an end. One chef interviewed for Inwood's study remarked, "We don't have the guaranteed flow of ingredients so we don't put these things on the menu. If we did and then needed to substitute, that would be considered false advertising. So we just feature these items in specials."[16] However, Campbell et al. describes that customers' revisit intentions increased if more information was provided in the locally produced food signage.[63] He explains that customers want to know the "story" of where their food comes from, and how it was produced.[63]

If a restaurant chooses to highlight a particular menu item as being local, one may question how many ingredients in their recipe constitutes it to be branded as a local food. A complication for local food emerges with processed and multi-ingredient products. This raises the question of what percentage of all the ingredients and/or processing needs to be deemed local for the final product to maintain its status as a local food.[64] For instance, an item labeled as containing local ingredients may only have a small percentage of local items in the recipe in comparison to the majority of the dish that is in fact, not local. Based on USDA labeling standards for Organic products, a processed food can have non-organic products in it as long as they do not exceed a combined total of 5% of the product's ingredients.[65] There are currently no labeling regulations for the term local in a restaurant setting. Customers may inquire if all the ingredients are local if the information is not clearly presented to them.

WAIT STAFF

The customer's main contact with the restaurant is the wait staff. The wait staff is the primary communication between the customer and the back of the house. Consumers have little contact with anyone else in the restaurant; thus, it is beneficial if the customer has a positive rapport with their server.[66,67] In general, as the price of the meal rises, so do expectations about the level of service.[66] At restaurants that involve table service, the waiter is expected to be helpful, friendly, and knowledgeable about the menu.[67] The wait staff must be trained on these matters in order to relay accurate information to the customer. Michael Lynn, of Cornell University's School of Hotel Administration states, "Servers may increase their tips when they introduce themselves, squat near the table, flash smiles, touch customers, use tip

trays with credit-card insignia, and write 'thank you' or draw a happy face on customers' checks."[67] One study examined the importance of wait staff in a variety of restaurant settings and found that cafés involved no instruction of the wait staff, but sit-down restaurants trained a newly hired waiter by spending time assisting an existing waiter in order to observe the job's demands.[66]

The amount of training the wait staff receive is important in restaurants serving local food on their menu. In a survey assessing local food awareness among wait staff at a university dining hall, the author suggests evaluating the current knowledge of the employees toward local food systems in order to gauge where training should begin.[68] Communicating via the wait staff is a beneficial avenue of influencing and educating diners about local foods and encouraging their consumption.[16] Another study found that in 19 of 22 restaurants characterized as "high volume" users of local food, employees were educated about the benefits of local foods on the restaurant menu.[16] It was also found that education was limited or non-existent among restaurants that did not source local food.[16] The more knowledgeable a staff member is about the items on the menu, the more likely they will be able to endorse the food to a customer in an honest and fervent manner. One chef remarked, "I increased sales of goat cheese by 80% once my staff started eating it and promoting it to the customer."[16] This shows the necessity of training wait staff on the locality of menu items, because they are the main communication link with the customer. The wait staff are arguably the most vital advertising agent within the restaurant.

BARRIERS TO LOCAL FOOD

While there are multiple benefits of purchasing and supplying local food, it does not come without a downside. When consumers make a decision to eat local foods, they make the decision to support local farmers; however, they are simultaneously making the decision to not support farmers in other areas.[69] For instance, a local organic farm in Montana is hundreds of miles away from its closest city, making it difficult for rural farms to make a living if consumers stuck to a true "locavore" diet.[70]

Local food tends to be associated with reduced environmental impact due to a decrease in the number of "food miles." A study examined the differences in greenhouse gas (GHG) emissions and total energy use of diced tomatoes produced locally in Michigan versus being produced in California and shipped to Michigan.[71] The study took into account water usage, soil type and emissions, transport, manufacturing, packaging, and processing.[71] They found that the tomatoes produced in Michigan produced under 10% less CO_2 than the California-grown tomatoes.[71] This calls into question how much of an impact eating locally has on the environment. In addition, GHG emission can vary substantially over relatively short distances depending on soil type, weather, and management of the soil.[72]

One study found that local businesses saw competing farmers' markets to be a barrier because they were viewed as having an unfair advantage, not having to pay property taxes.[73] Additionally, local businesses identified a need for government regulatory structures to be reformed, stating that local food is not as easy to be made available as it should be.[73] One respondent remarked, "It seems that big corporations are defining the rules for the little guy."[73] This was shown to be a significant barrier for local producers to participate in markets.[73]

These examples encompass a concept known as the "local trap," which refers to the tendency of food activists and researchers to assume something inherent about local food.[74] This does not mean to say that local food is always negative, but rather, it is arguing that local food is not always inherently good.[74] As previously stated, local food is generally associated with sustainability or social justice. However, local food systems can be sustainable or not, depending on the practices used by the agents.[74] Along the same lines, just because global food systems are deemed capitalist, industrial, and unsustainable does not mean that all global food systems are this way.[74] Branden Born and Mark Purcell portray the local trap idea through a hypothetical example: "Consider the hypothetical example of a buying local campaign in Arizona. Any ecological benefit from using less fuel for transport clearly would be outweighed by the need for massive water inputs."[74] Even further, they assert that not all local economies need to be supporting themselves. In some cases it would be more beneficial for wealthy economies to support less affluent communities. "If the local community is relatively rich, its economic gains will worsen injustice at wider scales. There is certainly no social justice in Beverly Hills' capturing more of its own wealth for local investment."[74]

Margaret Gray's book, "Labor and the Locavore," provides insight into farmworker exploitation in New York's Hudson Valley. The local food movement often assumes that local foods are produced under ethical conditions, but Gray found that small- and medium-sized family farms are often abusing labor standards.[75] Gray's research centered on interviews with hundreds of farmworkers, growers, policymakers, and activists.[75] Ninety-two percent of the farmworkers were undocumented Latinos.[75] Many farms provided free housing for their workers, which created a dependency on the farmer, and shielded the undocumented workers

from the public eye.[75] In 2002, the average annual income of the farmers interviewed was a little over eight thousand dollars ($8,078.00).[75] Six years later, when Gray re-interviewed them, this number negligibly increased.[75] Furthermore, 32% of the workers interviewed reported not being treated respectfully.[75] One worker reported working on the same farm for 12 years and still only made $8 per hour.[75]

The agricultural industry is exempt from many legal standards as compared with other industries such as overtime compensation and paid sick days.[75] In addition, small farms have even lower standards than their medium and large counterparts. “If a grower in New York State has fewer than five workers on the clock, a portable toilet need not be supplied as long as there is transportation to facilities.”[75] Thus, the small farms that are often romanticized in the local food movement often have fewer protections than the larger farms.[75] One worker Gray interviewed said he thought dogs were treated better than he was.[75]

On the other side of the argument, the growers cite rising land prices, dwindling community support, competition from overseas, and high subsidies paid to larger farms as reasons that make it difficult to make a living, and in turn, pay their workers fair wages.[75] Some farmers also noted that while people often asked about pesticide use and production methods, but rarely asked about their labor practices.[75] As a result, Gray urges to continue buying local food, as the more prosperous the regional farmers are, the more likely they will be in a position to increase the pay of their workforce.[75] She continues to say that it is important to ask farmers about their labor, and to voice ones opinion about ethical labor practices.[75]

Many of these examples discuss the barriers to local food as well as the dangers of blindly assuming all local food is good. Therefore, we should be referring to social justice, or sustainability, or democracy, not just localization when referring to the food system.[74]

DIFFUSION OF INNOVATIONS THEORY

E.M. Rogers developed the Diffusion of Innovations (DOI) Theory in 1962.[76] The theory explains the process by which an innovation is communicated and adopted over time.[76] The timeframe at which an innovation is adopted is determined by other factors such as compatibility with existing values, testability, observability, and simplicity.[76] There are different stages of adopters, according to the DOI theory, which are classified as: "innovators," "early adopters," "early majority," "late majority," and "laggards."[76] These different groups of adopters can be viewed in a bell-shaped curve, where the majority of the general population tends to fall within the middle categories. Figure 1 depicts the DOI bell curve. The theory states that interpersonal communication between opinion leaders and potential adopters is one of the most important avenues for inducing change and furthering the diffusion of innovation.[76]

The consumption of local foods may not seem to be an innovation, but given the current globalized food system, eating locally has become an innovation.[16] According to the DOI theory, the innovation must have advantages for the potential adopters.[76] Based on the literature, local food has many perceived advantages such as reducing environmental impact,[47] tasting better,[13] and supporting the local economy.[48,54] A study conducted by Inwood et al. in 2007 applied the diffusion of innovation framework to restaurants and chefs serving and promoting local foods.[16] Inwood states, "Restaurants occupy an important intersection in the food distribution system

that allows them to potentially generate greater interest in local foods among their customers as well as the farmers and distributors they 'source' from."[16] This draws on the DOI theory in the sense that restaurants that purchase local foods may be opinion leaders or "innovators" in the field have the opportunity to influence potential adopters, thus furthering the diffusion of innovation regarding local food awareness.

If this is the case, then communication from restaurant chef to wait staff, and ultimately to the customer is one of the most important avenues for generating interest in local foods. In addition, interaction between restaurant purchaser and farmer or producer is also important to ensure the correct information is being communicated.

PART 2: THESIS MANUSCRIPT

INTRODUCTION

Food choices not only affect our health, but also the environment,[45] the economy,[38,40,45] communities,[40,46] and interpersonal relationships.[47] The local food movement encompasses all of these elements, striving to heighten sustainability and social justices as they relate to food. The demand for local food has remained stable in recent years, particularly in the restaurant industry.[14] Despite growing consumer interest, an official, or universally agreed upon definition of "local food" is still lacking.[4,5] Regardless of ambiguity of the term, restaurants are continuing to highlight claims such as "local ingredients," "farm-to-table," or "sustainably sourced." Restaurant wait staff often address customer questions regarding menu claims. It is important to understand restaurant perceptions of locally sourced foods, how this is communicated to the wait staff, and thus, to the customer.

Wait staff play an important role in how successful restaurants will be in strengthening local food systems. Restaurant wait staff field questions from customers about local foods, which makes them an important population to study.[16] Studies have shown that the wait staff plays an integral role in promoting local foods in the restaurant setting.[16] In addition, the wait staff have the potential to educate customers about the benefits of local foods, which makes training on local foods to be of importance.[16] Despite this, little research has been conducted focusing on restaurant wait staff perceptions of, and interest in, local food and their level of understanding with respect to ingredient source.

The purpose of this study was to describe restaurant wait staff perceptions and motivations of local foods based on training provided by the restaurant, customer inquiries, and

percentage of local ingredients on each respective restaurant menu. The study focuses on restaurants promoting local foods on their menus or in advertisements. The goal of this study was to explain local food awareness among wait staff at restaurants serving local foods by assessing personal definitions, motivators, customer questions, barriers, confidence level, and training in order to predict what is being communicated to the customer.

METHODS

A. STUDY DESIGN

A cross-sectional study design was used to collect data from restaurant managers, chefs, and wait staff at local food promoting restaurants (LFPR) in an urban county in central New York State from October 2015 through February 2016. The original study design involved face-to-face interviews with restaurant managers and wait staff. Participants were recruited and asked survey questions through face-to-face interviews. This method of data collection proved difficult to obtain willing restaurant participants due to concerns regarding the amount of time required to participate. The study design was altered, with approval from the Institutional Review Board, from face-to-face interviews to paper questionnaires, which were to be filled out at the respondents' convenience. This change was made due to the busy environment of the population studied, making it less burdensome for participants.

Both of the questionnaires consisted of a mix of close-ended and open-ended questions regarding local food perceptions (Appendix A, B). The manager/chef questionnaire focused on purchasing patterns, wait staff training on local foods, and barriers to serving local foods on their menus. The wait staff questionnaire examined local food perceptions, perceived customer motivations for purchasing local foods, personal motivations for serving or eating local foods,

customer questions regarding local foods, training on local foods, and barriers to serving local foods.

Questions on the in-person interview guide and paper questionnaire were identical. All participants were presented with a consent form explaining the purpose of the study, allowing the participant to decline to answer any questions they did not feel comfortable with, and withdraw from the study at any point. There were minimal risks associated with participation in the study, and it was conveyed to the participants that there would be no direct benefit or compensation for participating in the study. The manager/chef questionnaire took approximately 5-10 minutes to complete, whereas the wait staff questionnaire took about 10-15 minutes to complete. The questionnaires are available in their entirety (See Appendix A, B).

B. PARTICIPANT RECRUITMENT

Local food promoting restaurants (LFPR) in an urban county in central New York were identified through restaurant websites, third party websites or blogs, and word of mouth. Restaurants promoting the use of local foods by using key phrases such as “local,” “sustainable,” “farm-fresh,” “seasonal menu,” or other related slogan on their website or menu were contacted via email, inviting them to participate in the study. The initial email recruitment provided detailed information about the study. A total of 21 LFPR were identified and invited to participate. A phone call was made to all restaurants within the days following the initial email recruitment. LFPR interested in participating in the study arranged times to meet with the researcher at their convenience. A final recruitment attempt was made by visiting LFPR during off-peak hours to invite them to participate. Survey questionnaires were provided to restaurant

managers along with consent forms. The purpose of the study was explained to the managers, and the questionnaires were left at the restaurants, allowing participants to complete the questionnaires on their own time. The researcher returned to the restaurants within one week to pick up any completed questionnaires. If the restaurant had not yet completed the questionnaires, a later date and time was set for the researcher to return. LFPR that declined participation stated that they were too busy to partake in the study, and therefore could not participate in the study.

C. STUDY POPULATION

All participants involved were managers, chefs, or wait staff from LFPRs within one urban county in central New York State. The inclusion criterion was managers, chefs, or wait staff from restaurants promoting local foods on their website or menu. The exclusion criterion for this study included: any restaurant that did not advertise serving local foods or having a seasonal menu, or another related claim; chain restaurants, buffet-style restaurants, or fast-food restaurants. All restaurants provided full table service with the exception of one restaurant, which provided counter service. The restaurants ranged from being open for only one year to operating for more than 10 years. The restaurants also differed in their fare, with a variety of specialties including: Mexican, vegan, sandwiches, Vietnamese, and Irish cuisines. The participant sample sizes for each restaurant are shown in Figure 1. There were a total of 27 respondents including eight managers or chefs and 19 wait staff.

D. MEASUREMENTS

WAIT STAFF QUESTIONNAIRE

One questionnaire (Appendix A; Survey 1) was developed to distribute to wait staff, which consisted of nineteen consecutive questions, including six open-ended questions and 13 close-ended questions. Answer options included choose all that apply, open-ended questions, five-point Likert scales, and multiple-choice.

DEFINING LOCAL FOOD

The first three questions of the wait staff questionnaire were taken from a 2002 questionnaire used in "Consumer Perceptions of Seasonal and Local Foods: A Study in a U.S. Community," and "University Student Perceptions of Seasonal and Local Foods" by Wilkins et al.[6,7] These questions were open-ended, and examined the respondents' personal meaning of local food: "What do you think makes a food a local food (what does it mean to you)?" "Name 3 foods you consider to be local foods," and "Name 3 foods that are definitely not local."[6,7] An additional question was included to assess wait staff perceptions of local food in terms of the distance from where it is grown or raised to where it is consumed. The respondent was asked to indicate "yes," "maybe," "no," or "don't know" for various distances in order for the food to be considered local.

CUSTOMER MOTIVATIONS

Three questions were included to evaluate customer motivations for buying local foods. These questions asked the wait staff to identify how often customers ask questions about local foods on the menu and what kinds of questions they may ask. Another question queried the

wait staff about what they felt were the major motivations behind their customers' interest in local foods. Two questions address the wait staff confidence in addressing questions about local or seasonal foods on the menu. An open-ended question asks the respondent to elaborate by providing examples of questions they may have difficulty answering.

PERSONAL VALUE OF LOCAL FOOD

One question examined how the wait staff personally valued the importance of offering local foods on the menu. The main question is divided into subsets such as "supports local economy," and "local food tastes better," and asks the respondent to rank the item on a five-point Likert scale from "very important" to "not at all important."

INGREDIENT SOURCING AND TRAINING

Two questions examine wait staff knowledge regarding restaurant ingredients. The questions ask, "Approximately how many menu items contain local ingredients?" and "From what sources does this restaurant purchase its ingredients?" These questions were included to compare with manager or chef responses in order to determine if and how this information is communicated to the wait staff, and thus, the customer. An open-ended question also asks about any training they have received regarding local foods and to provide examples.

BARRIERS TO LOCAL FOOD

One question asked about potential barriers or challenges of featuring local food on the menu. This question had the respondent select all options that applied.

DEMOGRAPHICS

Demographic information was gathered at the end of the questionnaire including age, ethnicity, and education level. They were also asked to indicate how long they had been waiting tables as well as if they had a background in farming or gardening.

MANAGER/CHEF QUESTIONNAIRE

The second questionnaire (Appendix B; Survey 2) was designed for restaurant managers and/or chefs. This questionnaire included five questions in total, including one Likert-scale, three close-ended questions and one open-ended question.

RESTAURANT CHARACTERISTICS

One question inquired about the number of years the restaurant had been in operation. The second question asked how many wait staff and waitresses they have on their staff.

RESTAURANT INGREDIENT SOURCE

One question asked about the source of the restaurant's ingredients. This question listed options such as "local/regional supplier," "food co-op," "wholesale distributor," "manufacturer," and "other" with a five-point Likert scale next to each option from "all ingredients" to "no ingredients." This question aimed to discover how much of the restaurants' ingredients are truly local. This question was compared with the corresponding wait staff response about the restaurant's ingredient source.

TRAINING ON LOCAL FOODS

One open-ended question asked the manager or chef to describe any training they provide for the wait staff, particularly regarding local foods on the menu.

BARRIERS TO LOCAL FOOD

The final question asked about potential barriers or challenges to featuring local food on the menu, which is a question also on the wait staff questionnaire.

E. STATISTICAL ANALYSES

Close-ended responses from all surveys were entered into the IBM® SPSS statistical software program version 22.0.0.0. The data was analyzed primarily through descriptive statistics. The variables were coded as seen in Appendix A and B. Descriptive statistics were run to record means, frequencies, cross-tabulations and standard deviations. Spearman correlations were conducted on some categories to determine if there was a statistical dependence between two variables. Mann-Whitney U-Tests were used to determine whether training or confidence differed among wait staff that were accurate or inaccurate in identifying the restaurant's ingredient sources. Statistical significance was determined by a p-value less than 0.05. Open-ended responses were entered and coded using NVivo 11 for qualitative data analysis. Codes were developed based on patterns emerging from the data.

RESULTS

RESPONSE RATE

A total of 27 respondents from eight different restaurants participated in the research study. Four participants (two wait staff, one manager, and one chef) were recruited to participate in face-to-face interviews. In addition, six managers or chefs, and 17 additional wait staff completed questionnaires tailored for each respective group, making a total of eight managers and nineteen wait staff that participated. The sample size of each respondent group is shown by restaurant in Table 1.

WAIT STAFF QUESTIONNAIRE

DEMOGRAPHICS

Of the nineteen total wait staff that participated in the study, 82.3% (n=14) identified as White, 5.9% (n=1) identified as Hispanic/Latino, 5.9% (n=1) identified as Native American/American Indian, and 5.9% (n=1) selected "Other." Two participants did not respond to this question. The mean age of the sample was 31.07 with a standard deviation of 7.3. Ages ranged from 22 to 46.

Three of the respondents reported having a PhD/MD or beyond (18.8%), one participant had an MA/MS (6.3%), six participants had a BA/BS (37.5%), five participants (31.3%) reported completing "some college," and one participant had a high school education (6.3%).

Of the nineteen wait staff, a total of sixteen reported how long they had been waiting tables at their current restaurant. Three reported having worked at the restaurant for less than 1 year (18.8%), two had been working at their respective restaurants for 1-2 years (12.5%),

three were waiting tables at their restaurant for 3-5 years (18.8%), three reported working for 6-10 years (18.8%), and five wait staff had been working for more than 10 years (31.3%). Only one participant reported having a background in farming or gardening (6.7%). Demographic information for this study's sample is also available in Table 2.

DEFINING LOCAL FOOD

WHAT DOES LOCAL FOOD MEAN TO YOU?

Table 3 provides the most commonly cited definitions of local food based on themes emerging from the wait staff questionnaires. The majority of respondents (65%) stated that local food had to do with a place specific location. Twenty-five percent of responses specifically referred to being grown or produced within a region of New York State. One respondent stated that local food had to be procured within the city it was to be consumed. Fifteen percent of wait staff indicated that local food referred to unique qualities about the area, or sharing a history with the area in which it is consumed. In addition, 11 responses specifically discussed a production method such as "grown" or "crafted" in an area that they identified.

Geographic distance considered by respondents to be consistent with "local" is summarized in Table 4. The question stated, "To be considered local, would you say that food must be grown/raised," in a specific geographic distance. Twenty-nine percent of wait staff said that foods grown or raised "within the United States" were considered local. Eighteen percent of wait staff agreed that foods grown or raised "within 500 miles" were considered local. Foods grown or raised "within 100 miles" were considered local by 50% of wait staff. Foods grown or raised "within 50 miles" were considered local by 61% of wait staff. Twenty-two percent of wait

staff agreed that foods grown or raised “within the Northeast Region” were considered local. Foods grown or raised “within NYS” were deemed local by 56% of respondents. Foods grown or raised “within this region of NYS” were considered local by 74% of wait staff. Foods grown or raised “within Onondaga County” were considered local by 89% of respondents. Finally, foods grown or raised “within Syracuse” were considered local by 88% of wait staff.

LOCAL AND NOT LOCAL FOODS

Table 5 lists the percentages of foods most commonly described as local and not local among LFPR wait staff. A total of 64 foods were identified as local foods and 50 foods were identified as not local foods.

The most frequently named local food was cheese or other dairy product (10.9%), such as milk and yogurt. This was followed by 9.38% of respondents who listed apples as a local food (n=6), and another 9.38% who listed vegetables, in general, as local (n=6). Different kinds of fruits and vegetables were commonly listed as local foods, such as potatoes (6.3%), tomatoes (3.13%), squash (3.1%), and kale (3.1%). Two respondents specified “seasonal” fruits and vegetables, which is important to recognize because many of the fruits and vegetables identified are not available throughout the year. Other notable items that were identified as local foods included specific brands or popular recipes (e.g. Utica greens) known that are unique to the area. Despite the fact that the ingredients to these unique items may not be grown or produced locally, it is important to point out that some individuals still consider specialty items in an area as being local foods.

The most frequently identified non-local food was the general category of “seafood” (22.0%). Avocado (14.0%), meat in general (10.0%), banana (8.0%), and orange (8.0%) were all identified as non-local foods. There were some foods identified in both the local and non-local food lists. Meat was listed the same number of times under local foods and non-local foods (n=5).

CUSTOMER MOTIVATIONS

When wait staff were asked what they believed were the major customer motivations for ordering local foods, 66.7% (n=12) reported that supporting the local economy was “very important” to the customers. (See Table 6.) Half of the wait staff (n=9) believed that reducing their environmental impact was “very important” to the clientele. The responses were mixed regarding local food tasting better, with 33.3% reporting “very important” to their customers, 38.9% reporting “somewhat important,” and 27.8% reporting “neither.” Similarly, responses regarding perceived customer motivations that local food is “safer” were varied. “Very important” was indicated by 33.3% of respondents, and “somewhat important” was also indicated by 33.3% of wait staff. “Neither” was reported by 22.2% of staff. “Not very important” was indicated by 11.1% of respondents.

The numbers of questions per shift that wait staff received from customers regarding local foods varied greatly. The frequencies are summarized in Table 7. Three respondents (15.8%) reported being asked more than one question every shift they work. Similarly, three wait staff (15.8%) indicated rarely getting questions from customers about local foods on the menu. Four respondents (21.1%) stated they get questions “most of the shifts” they work. An

additional four respondents (21.1%) indicated getting questions for “less than half the shifts” they work. The question was scored with “rarely get questions” equaling one and “more than one question every shift” equaling six. The wait staff averaged a score of 3.37 with a standard deviation of 1.71.

Wait staff were asked to provide questions commonly asked by customers about local foods. The most commonly identified question was “Where is [name of specific food item] from?” (See Table 8.) This question was identified eleven times (31.4%). Some wait staff identified specific foods that customers inquired about, such as: meat, produce, or seafood. Alternatively, some respondents simply stated that customers asked about the food’s origin, in general. Three respondents (8.6%) indicated, “Is [food] fresh or frozen?” as a common question. Other questions mentioned were regarding the waiter’s opinion (6.0%), preparation method (6.0%), whether the food was vegan (6.0%), whether the food was “local” (6.0%), how the food was raised (6.0%), and the food’s delivery time (6.0%).

There was no significance between the number of questions wait staff receive regarding local foods and their level of confidence in correctly addressing questions about local foods ($p=0.20$). The majority ($n=11$) of the wait staff (61.1%) reported feeling “ very confident” in answering customer questions about local food. Only four respondents (22.2%) indicated feeling “somewhat confident” in addressing questions about local food. None of the respondents reported feeling “not at all confident.” Respondents had an average score of 3.39 ± 0.85. Wait staff confidence level can be found in Table 9.

Many wait staff reported that they did not have customer questions that they had difficulty answering. Four specifically indicated “none” or “N/A” for this question, and an

additional six left it blank. Two respondents said they had difficulty answering questions about where specific foods were from or where the farm was located. One waiter stated that questions about the chef's specials could be difficult to answer.

PERSONAL VALUE OF LOCAL FOOD

Wait staff were asked how they personally value the importance of offering local foods on the menu. Table 10 depicts wait staff personal motivations behind serving local food on the menu. Of the wait staff, 83.3% (n=18) reported supporting the local economy to be "very important." Additionally, 44.4% (n=8) said the taste of local food was "somewhat important" to them. Moreover, 44.4% (n=8) also said that the safety of local foods was "very important." In addition, 5.6% (n=1) indicated that safety of local foods was "not very important." Another 52.9% (n=8) reported that drawing in more customers with local foods was "very important." Similarly, 41.2% (n=7) indicated increasing the restaurant's competitiveness was "very important" to them. Finally, 58.8% (n=10) reported reducing their environmental impact to be "very important."

A Spearman bivariate correlation analysis showed that the higher level of education attainment, the more likely they were to report local food tasting better (p=0.018), and local food being safer or reducing the risk of foodborne illness (p=0.038) to be "very important" to them personally. The other variables showed no significant correlation with education level. Figure 3 shows the responses split based on the participants with and without a college degree.

Another Spearman correlation analysis was conducted to assess the relationship between personal importance of serving local foods on the menu and age. The results showed a

positive and significant association between age and personal importance of reducing their environmental impact (p=0.003). The other variables showed no significant correlation with age. Table 11 depicts the correlation analysis regarding personal importance and age. Due to the small sample size, these results may not be generalizable to the general waiter population. Figure 4 shows the level of personal importance of serving local foods specifically to reduce the environmental impact with respect to age.

INGREDIENT SOURCE AND TRAINING

The wait staff were asked to report the amount of items on the menu that contained local ingredients. The majority (n=10) of the respondents (62.5%) indicated that “most of the menu items” contained local ingredients. None of the respondents indicated that “all of the menu items” or “none of the menu items” contained local ingredients. The final six respondents (37.5%) indicated that “a few of the items” contain local ingredients. Table 12 shows the number of menu items containing local ingredients, from the wait staff perspective.

Table 13 shows where wait staff believe the restaurant procures its ingredients. Eleven wait staff (68.8%) indicated that the restaurant obtains their ingredients directly from the farmer. Twelve (75.0%) reported that the ingredients are from a local or regional supplier. Five (31.3%) reported that the restaurant sources ingredients from a food co-op. Eleven (68.8%) indicated a wholesale distributor as a source of ingredients. Four (25.0%) stated that the restaurant sources from a manufacturer. One respondent (6.3%) indicated “I don’t know” regarding the source of the restaurants ingredients.

Wait staff were asked to identify training methods the restaurant managers provided regarding local foods on the menu. The most commonly cited training method was an explanation of the food source, which was provided by a chef or manager (23.8%). The second most common training method involved tasting or sampling of menu items (19.0%). Three respondents (14.3%) stated that their managers provided handouts or factsheets on local foods served on their menu. One respondent (4.8%) mentioned that the restaurant provided a bus trip to the local farms where their ingredients were sourced. Five wait staff (23.8%) said that they learned about local foods on their own accord. Finally, three wait staff (14.3%) stated that no training was provided on local foods. Table 14 shows training methods on local foods reported by the wait staff.

Spearman correlations were conducted with confidence level and training provided by the restaurant, as reported by the wait staff. Training was divided into categories based on the training method reported by the wait staff. Categories were divided into “no training,” “taste testing food,” “explanation from manager or chef,” “handouts or factsheets provided about local foods,” and “bus trip to local farms.” These categories were ranked (no training=1, taste testing= 2, explaining= 3, handouts= 4, bus trip= 5). There was no significance between confidence level and amount of training provided by the restaurant ($p=0.25$).

BARRIERS TO LOCAL FOOD

The most reported barrier to serving local food on the menu from the waiter’s perspective was the inconsistent supply of local foods (64.7%). Ten wait staff (58.8%) cited the price of local foods as a barrier. Another 23.5% of respondents said that variety was a barrier.

Further, 17.6% reported the quality of local foods as a barrier. None of the respondents indicated that harsh working conditions were a barrier to serving local foods. Two participants indicated that there were no issues with serving local foods. Table 15 shows perceived barriers to serving local foods from both the wait staff and manager perspectives.

MANAGER/CHEF QUESTIONNAIRE

RESTAURANT CHARACTERISTICS

A total of eight managers or chefs participated in the research study. Two of the participants completed a face-to-face interview, and an additional six participants completed a written questionnaire. Two of the restaurants participating in the study did not have a manager or chef complete a questionnaire. Out of the eight managers participating, half of them reported their restaurant being open for more than 10 years. One restaurant reported being in operation for six to 10 years, and one reported being open for one to three years.

The managers and chefs reported the number of wait staff and waitresses they have employed at their restaurant. Responses ranged from 12 to 38 wait staff, with an average of 18.8 and a standard deviation of 8.8. This information, along with the number of years the restaurant has been in operation can be found in Figure 2.

RESTAURANT INGREDIENT SOURCE

All of the restaurant managers and chefs reported some degree of ingredient purchasing from a local source. Three managers or chefs reported that “some ingredients” were purchased locally. An additional three reported that “half” of the ingredients were from a local source.

Two reported that “most ingredients” were local. None of the managers or chefs indicated that “all ingredients” were sourced locally.

Four managers or chefs reported that none of the ingredients were purchased from a food co-op. Two indicated that “some ingredients” were procured from a food co-op. One additional respondent indicated that “half” of the ingredients were from a food co-op.

Three managers or chefs indicated that “most ingredients” were from a wholesale distributor. Likewise, three respondents stated that “half” of the ingredients were from a wholesale distributor. Two reported having “some ingredients” from a wholesale distributor.

Four respondents indicated purchasing from a manufacturer. These four respondents stated that they purchase “some ingredients” from a manufacturer. Table 16 depicts ingredient source reported by restaurant managers or chefs.

One purpose of this study was to assess wait staff knowledge by comparing their responses with information elicited from their managers or chefs regarding ingredient sources. Responses regarding the proportion of ingredients from various sources were often inconsistent among managers and chefs from the same restaurant. While the reported proportion of ingredients (“most,” “half,” “some,” etc.) was often conflicting, there was agreement among manager/chef responses regarding specific source (“local,” “co-op,” “wholesale,” etc.). Therefore, the wait staff survey question: “From what sources does this restaurant purchase its ingredients?” was compared to the corresponding restaurant manager/chef response to the same question. Due to the fact that the question on the wait staff survey included both “direct from farmer” and “local supplier” as options, whereas “local supplier,” but not “direct from farmer” was an option on the manager/chef questionnaire,

these two items were grouped together for wait staff when comparing answers with manager/chef responses. Since only six out of the eight restaurants had manager or chef responses, only 14 wait staff responses could be compared to their corresponding manager or chef. The flow charts demonstrate how wait staff response were categorized into "accurate" and "inaccurate" groups (Figure 5, 6).

Figure 5. Inaccurate wait staff responses

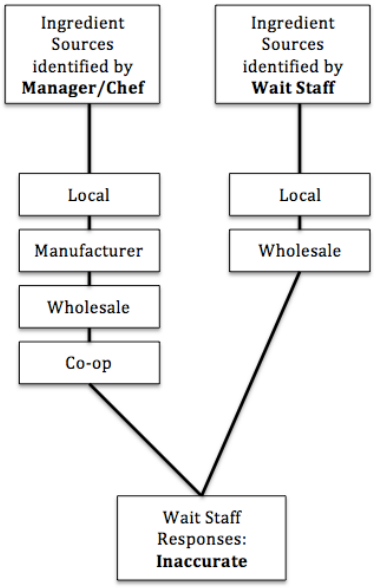
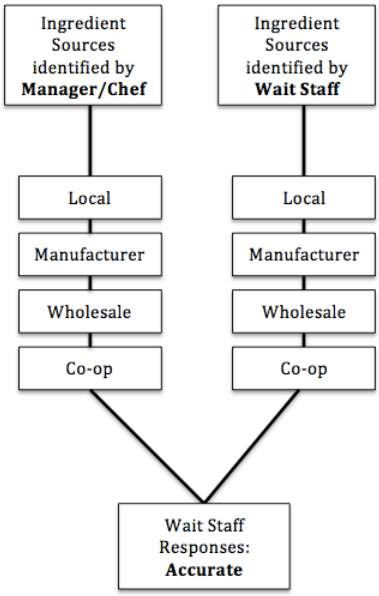


Figure 6. Accurate wait staff responses



Out of the 14 wait staff, four respondents (28.6%) reported all of the correct sources of the restaurant's ingredients. The remaining 10 wait staff (71.4%) did not indicate all of the correct ingredient sources.

Based on the results of the wait staff "accuracy" of reporting the restaurant's ingredient sources, cross-tabulations and Mann-Whitney U-tests were conducted to determine whether differences existed in training received between wait staff that were "accurate" and "not accurate." Training categories were determined based on waiter responses. As stated previously, categories were divided into "no training," "taste testing food," "explanation from

manager or chef," "handouts or factsheets provided about local foods," and "bus trip to local farms." These categories were ranked (no training=1, taste testing= 2, explaining= 3, handouts= 4, bus trip= 5). There was no statistical significance found between accuracy and training method (p=0.080, two-tailed, p=0.056, one-tailed). Results are depicted in Table 17.

A cross-tabulation and a Mann-Whitney U-test were conducted on wait staff ingredient source "accuracy" and confidence level. There was no statistical significance found between accuracy and confidence level (p=0.748, two-tailed). Six wait staff (60%) who were inaccurate also indicated that they were "very confident" in answering customer questions about local foods. Two inaccurate wait staff (20%) stated they were "moderately confident" and two more (20%) indicated being "somewhat confident." Two of the accurate wait staff (50%) reported feeling "very confident." The other half reported feeling "somewhat confident."

TRAINING ON LOCAL FOOD

Managers were asked to explain training methods provided to their wait staff regarding local foods on their menus. Half of the methods provided (n=6) included explanations of the food source, which was provided by the manager or chef. Three respondents (25.0%) mentioned providing tasting or sampling of the local food items. Two respondents (16.7%) expressed the importance of telling a story about the local foods they purchase. Finally, one chef (8.3%) stated that bus trips to local farms are provided to wait staff that want to learn more about local foods. Table 18 shows training methods on local foods reported by managers or chefs.

BARRIERS TO LOCAL FOOD

Restaurant managers and chefs indicated “inconsistent supply” as the most commonly reported barrier to serving local food on their menus. One hundred percent of the managers and chefs reported this as a barrier. The second highest reported barrier was “quality” of local foods, which was indicated by 57.1% of respondents. Both of these findings are consistent with the literature, which shows that restaurants are often willing to pay higher prices for local foods, but there is often an insufficient supply or the quality is inconsistent with their standards. “Variety” and “expensive” were each indicated by 28.6% of respondents as a barrier. None of the respondents indicated “harsh working conditions for farm laborers” as a barrier. Additionally, no one reported that there were “no issues” with serving local food on the menu.

Some respondents wrote additional comments about the barriers of serving local food at their restaurant. Common responses included the availability of local foods and distribution issues with obtaining local products for their restaurant. One respondent stated the need for an entity to speak to restaurants regarding which local suppliers are available and what products are in season.

DISCUSSION

DEMOGRAPHICS

The present study was conducted near a college campus, which may explain the high percentage of respondents with a college education. The study’s location was also near a medical school, which could explain the number of participants who had received degrees higher than a bachelor’s degree. In addition, despite the location being in an urban area, the majority of participants were white (82.4%). Although the study was located in a community in

upstate New York, an area with numerous agricultural outputs, only one participant indicated that they had a background in farming or gardening.

DEFINING LOCAL FOOD

There are varying definitions of local food, which may depend upon geographic distance,[4,5] access,[6,7] or community characteristics.[8,9,10,43] When wait staff were asked to define local food in their own words, the most common responses related to production of food in a specific geographic place or location. Of those who described local food based on location (n=13), 38% specifically defined local food as being produced within a specific region of the state. If wait staff commonly cited food grown or produced within their region of New York State, then the results contradict the 2008 U.S. Farm Act's definition of "local," which spans 400 miles from place it is procured.[4] These results may not be generalizable to the entire population because the region of New York in which the study was conducted has a number of agricultural outputs. In addition to geographic location, a common theme that emerged from both wait staff and managers alike was the idea that local food is defined based on unique characteristics that are specific to the area. One respondent remarked, "A true local food shares a history with the area." Similarly, a restaurant manager explained how training restaurant wait staff on local foods was important to "share the story [of the food]." This shows that waiter definitions of local foods expanded beyond distance alone.

The foods that were most identified by wait staff as being local foods were cheese and dairy products followed by apples. This is most likely because of the area in which the study was conducted. New York's greatest agricultural commodity is cow's milk, which totaled $2.4 billion in sales in 2012.[98] New York is a top ten producer of apples nationwide.[98] New York is also one

of the top ten producers nationwide of cherries, peaches, strawberries, tomatoes, squash, corn, and several other types of vegetables.[98] Therefore, the foods most identified as local in the present study may not be representative of other states or regions of the country.

Foods most identified by wait staff as being non-local foods were different types of seafood followed by avocados. The United States is the third largest consumer of seafood, behind China and Japan.[77] Up to 90 percent of the seafood in the United States is imported, and approximately half of the imports are wild-caught seafood.[78]

CUSTOMER MOTIVATIONS

Given the fact that restaurant wait staff are generally the main point of contact for the customer, it was important to assess the wait staff perceived customer motivations for purchasing local foods. This study found that wait staff perceived "supporting the local economy" as customers' greatest incentive for purchasing local foods. This is consistent with literature findings that consumers are interested in buying local food to support their local community.[48,55] The second most common perceived customer motivation was that local food "reduces environmental impact." Environmental concerns have also been cited in the literature as consumer motivators for joining a CSA[55] or purchasing foods at a farmers' market.[48]

CUSTOMER QUESTIONS ABOUT LOCAL FOOD

The most common type of question asked by the customers to the wait staff was, "Where is [food] from?" Some respondents simply listed food origin, in general, as a common question whereas other respondents specified a variety of food that customers often asked

about the source. The specific type of food varied based on restaurant and waiter. Some foods mentioned included seafood, meat, and produce.

Wait staff mentioned customer inquiries about fish or seafood origin as a common question. Consumer interest in fish or seafood origin could be related to concern for overfishing or contamination of marine ecosystems, which are prevalent issues associated with seafood consumption.[79,80] In addition, overfishing and contamination of marine ecosystems have negative repercussions on climate change in terms of precipitation, agriculture, storms, and coastal flooding.[81]

According to some of the wait staff, how seafood or livestock is raised was another topic about which customers had questions. Customers could be inquiring about whether the fish is farmed or wild. Fish and fish oils containing omega-3 fatty acids have been shown to have anti-inflammatory properties, which could decrease risk of many chronic diseases such diabetes, arthritis, obesity, cancer, and cardiovascular disease.[82] One study found that there were significant differences in omega-3 fatty acid levels when comparing farmed fish to wild fish.[83] The wild caught fish were found to have higher totals of omega-3 fatty acids than farmed fish, and wild fish had a lower omega-6/omega-3 ratio.[83] In addition, a study conducted on consumer beliefs regarding farmed fish versus wild fish found that consumers viewed wild fish as fresher, healthier, less handled, and more natural.[84] These could be concerns for customers ordering fish, and thus, reasons for questioning the method in which the seafood was raised.

Questions regarding how livestock are raised may stem from concern over industrial scale farms such as concentrated animal feeding operations (CAFO). CAFOs typically house thousands of animals, in which animal density and weight gain are the operations' main goals.[85]

CAFOs generally feed livestock a high-calorie, grain-based diet, which causes them to gain weight quickly.[85] CAFOs have also been known to administer antibiotics to their livestock, which may jeopardize the effectiveness of human medicines.[85] In short, customers may be inquiring about how the livestock they may purchase were raised due to concerns for animal ethics or their own personal health.

The origin of meat offered on the menu was also mentioned as a type of food customers inquire about. One waiter mentioned that the restaurant serves an "elk burger" on their menu, which often causes customers to ask about the source. The same respondent commented that the restaurant's coasters say 'buy local' is printed on restaurant bar coasters, which led him/her to conclude, "people normally read that and assume that everything is relatively local just from that, whether it is or not." This type of local promotion in restaurants could encourage customers to ask questions about the source of their ingredients.

Some wait staff listed produce as a type of food that customers may frequently inquire about the source. One respondent mentioned that this questions about the source of fruits and vegetables increase during the summer months. Another respondent stated that the restaurant menu lists "seasonal vegetable" as an option, so customers might inquire which seasonal vegetable the restaurant is featuring.

Questions regarding whether a food was fresh or frozen was also identified as a customer inquiry. Some consumers may think that fresh food tastes better, or that it is of higher nutritional quality. A study looking at the effects of processing on blueberry compounds found that processing such as drying, juicing, and freezing all resulted in molecular changes in

terms of quantity and quality of biologically active compounds in the fruit, but their exact fate is still unknown.[86]

According to the wait staff surveyed, some customers are also concerned about the time the food was delivered to the restaurant. This could be related to the freshness of the item, or it could be about food safety concerns. One study surveying 265 full service restaurant consumers found that cleanliness and hygiene was the third most important factor in restaurant choice after food variety and convenience of the location.[87] This could be due to the fact that the majority of foodborne illness outbreaks arise from the foodservice industry.[88] The Centers for Disease Control and Prevention reported that from 2009-2010, 48% of foodborne illness outbreaks were caused by food consumed in a restaurant, and 21% by food consumed at home.[88]

The wait staff's opinion of the food was also cited as a question asked by customers. This indicates that customers do rely on the opinion of the wait staff when making decisions about what to order off of a menu. This is important because it shows the potential for wait staff to promote the purchase of local foods to customers because they value their opinion.

The number of questions the wait staff reported getting per shift varied from "rarely get questions" (15.8%) to "get more than 1 question per shift" (15.8%). There were no significant correlations between the number of questions per shift the wait staff received and age ($p=0.67$), number of years waiting tables ($p=0.97$), or education level ($p=0.99$).

Wait staff were also asked to indicate how confident they felt in addressing customer questions regarding local foods on the menu. The majority ($n=11$) of respondents (61.1%) indicated that they felt "very confident" in answering questions. An additional three

respondents (16.7%) indicated feeling “moderately confident,” and four wait staff (22.2%) reported feeling “somewhat confident.” None of the respondents indicated that they felt “not at all confident.”

PERSONAL VALUE OF LOCAL FOOD

In contrast to customer motivations for purchasing local foods, the wait staff were asked to identify their personal value of the importance of serving local foods on the menu. Similar to customer motivations, the most commonly mentioned personal motivators for serving local food on the menu were “supporting local economy” and “reducing environmental impact.”

This study found that age was correlated with level of importance regarding reducing their environmental impact with local foods. Older wait staff were more likely to indicate that serving local foods to reduce the impact on the environment was “very important” to them. Only one respondent under the age of 30 indicated reducing the environmental impact as being “very important.” This was an interesting finding because adverse environmental outcomes are more likely to affect younger generations. This finding is inconsistent with other studies looking at age and environmental concern. Wandel et al. found that the youngest age group (15-24 years) based their food purchasing decisions on environmentally sound production methods and animal welfare, whereas the oldest age group (60 years and above) were most concerned for their own health when making food purchasing decisions.[89] Another study conducted by Hamilton et al. found that the older respondents expressed lower levels of concern for the environment than their younger counterparts.[90]

Findings also showed a positive and significant association between education level and personal importance regarding local food “tastes better” and is “safer”. Those respondents with a college degree or higher were more likely to say that local food is important to them because it “tastes better” and is “safer” than respondents who had not earned a college degree. It is possible that those with a college degree are more aware of foodborne illness than those who had not earned a college degree. Previous studies have been mixed regarding incidence of foodborne illness and education level. Simonsen et al. found an increased incidence of campylobacteriosis in persons with higher educational attainment.[91] However, Simonsen et al. also found an increased incidence of *S. Typhimurium* among persons with lower educational attainment.[91]

INGREDIENT SOURCE AND TRAINING

None of the wait staff indicated that their respective restaurant sourced “all of the menu items” from local sources. Similarly, no one indicated “none of the menu items” contained local ingredients. The responses were divided between “most of the menu items” and “a few of the menu items,” regarding the number of menu items containing local ingredients. During a face-to-face interview, a waiter commented, “Do I have to lie, or can I be honest?” regarding the question about the number of items on the menu that contained ingredients from local sources.

The wait staff responses regarding the source of the restaurant’s ingredients were compared with the corresponding manager/chef responses to the same question. This was done to determine the accuracy of the wait staff knowledge about the restaurant’s ingredient

source. Only four wait staff were able to accurately indicate all sources of the restaurant's ingredients. It was predicted that this could be due to a lack of training on ingredient source at the restaurant. While there was no statistical significance (p=0.080, two-tailed) found between accuracy and increased training level, those who were accurate reported training methods such as bus trips, handouts, and explanation of local foods from the manager or chef. It is possible that with a larger sample size that the results would show significance.

The wait staff that were grouped based on accurate and inaccurate responses were then compared based on confidence level to determine whether or not accurate wait staff had increased confidence. There was no statistical significance found between accuracy and increased confidence level (p=0.748). This may show that despite waiter confidence in addressing customer questions about local foods on the menu, there may not be much substance to base this confidence on.

BARRIERS TO LOCAL FOOD

The most commonly cited barrier to serving local foods on the menu was "inconsistent supply" of local foods. Both restaurant wait staff and managers/chefs indicated this most frequently. "Inconsistent supply" was named as a barrier by 100% of the managers and chefs surveyed. The second most common barrier indicated by wait staff was "expensive," or price of local foods. This was not as frequently indicated as a barrier for managers or chefs. The difference could be due to the fact that wait staff are not often involved in purchasing practices, and may presume that local foods are more expensive than non-local foods. These findings are consistent with the literature, which shows that restaurants are often willing to pay

more for local foods, but the supply is insufficient, or the quality is inconsistent with restaurant standards.[16,92]

None of the wait staff or managers/chefs indicated "harsh working conditions for farm laborers" as being a barrier to serving local foods. When asked if "harsh working conditions" was a barrier to serving local foods, one chef remarked, "Would it keep me from buying from them? I don't think it would. Not that I'm inhumane." Most farmworkers in the United States are immigrants from Mexico and other Latin American countries, and approximately half are undocumented.[93] Due to the physical nature of farming, there are high rates of occupational injury, but workers have limited access to health care, especially if undocumented.[94] The fear of immigration law enforcement prevents many undocumented farmworkers from seeking medical attention.[95] In a study conducted among 163 Latino farmworkers in North Carolina with H-2A visas, 50% had said their supervisor does as much as possible to keep their work environment safe.[96] Margaret Gray's work on the harsh working conditions of farm laborers in New York's Hudson Valley, adds to the discussion about the importance of being aware of farm labor practices.[75] Food labeled "local" does not necessarily equate to "ethical," which is why discussion of labor practices is a conversation worth having with farmers and food producers.

In addition to the predicted barriers regarding serving locally sourced food on the menu, chefs and managers also mentioned that distribution was a major issue. One restaurant manager remarked, "[There] needs to be a more central sorting location. An entity that can speak with restaurants as to what local suppliers are available, what seasonal items are available, etc." Another restaurant's head chef recalled distribution at a restaurant in California, stating, "When I was in California, I had a guy who did it for me. He would call me up, [and ask

what I wanted]. He would drive around to all the farms and search [for the best price]. But here, it is up to me. I have to call every farm, go out, and pick it up…you really have to be dedicated and want to put in the time to make it happen. It's not easy." This could potentially be a big enough barrier that prevents more restaurants from sourcing local foods. Providing centralized distribution could increase restaurant willingness to buy their ingredients locally.

DIFFUSION OF INNOVATIONS THEORY

The Diffusion of Innovations (DOI) theory can be applied to local food adoption in the restaurant setting. Since the DOI theory states that interpersonal communication channels are pivotal in the adoption of new innovations,[76] it can be inferred that restaurant managers, chefs, and wait staff play an integral role in the promotion and potential adoption of local food interest among their customers. Chefs and managers are especially important in the potential diffusion of local food interest among their wait staff. They have the opportunity to educate the wait staff that may eventually become a chef or manager themselves, and contribute to purchasing decisions in their own restaurant.

The DOI theory has different adopter categories, including: innovators, early adopters, early majority, later majority, and laggards.[76] The adopter categories can be applied to the various roles within the restaurant such as: managers, chefs, wait staff, and customers. For example, the restaurant chef who arranged bus trips for the wait staff to local farms could be labeled as an "innovator." This method of training has the potential to educate restaurant wait staff about local foods in a way that cannot be learned through explaining food origins or sampling a dish. While there was no statistical significance shown between accuracy and

training level of the wait staff on local foods, those who were accurate reported training methods such as bus trips, handouts, and explanation of local foods from the manager or chef. None of the wait staff who reported “no training” or “self-training” were accurate. Further research with a larger sample size may determine which type of training is the most effective in disseminating information about local foods. In addition, the wait staff reported a high level of confidence regarding answering customer questions about local foods on the menu. This confidence was without regard to whether or not they were accurate in naming the restaurant’s ingredient source. This confidence may lead to incorrect information being communicated to the customer. The failure of restaurant chefs or managers to engage in educational efforts may decrease the adoption of local foods among wait staff, and thus, other consumers.

IMPLICATIONS FOR REGISTERED DIETITIANS

As local and seasonal eating patterns become more popular for consumers, registered dietitians will have the important role of advising their clients about how to maintain a healthy diet with local foods. Therefore, dietitians will need to be aware of local foods available each season within their geographical area. The Hunger and Environmental Nutrition Dietetic Practice group developed the Standards of Professional Performance as a tool for registered dietitians to assess their skills and to recognize areas for professional development.[97] The SOPP provides measureable statements illustrating how sustainable, resilient, and healthy food and water systems principles can be applied to practice.[97] Educating clients about the potential health or environmental benefits of eating locally is yet another subdivision within the diffusion of innovations. This research is beneficial for registered dietitians because as nutrition professionals, it is crucial that they help clients decipher fact from fiction regarding food and nutrition claims. This research shows that while a restaurant may advertise serving local foods, not all foods on a given menu may be local or seasonal. Overall, teaching clients to be informed consumers is a great tool for helping them make the best food choices for their diet and lifestyle.

STRENGTHS AND LIMITATIONS

This study explored restaurant wait staff perceptions of local foods at local food promoting restaurants by using a mixed-method approach, which allowed for both quantitative and qualitative analysis. This provided a more in-depth assessment of local food perceptions as opposed to using a single method. This study was conducted in an area where agriculture is a major industry.[98] The Central New York region ranks third in the state for agricultural sales.[98] This fact contributes to the variety of restaurants promoting locally-sourced foods on their menus.

There are several limitations to the present study. The self-selected and convenience sample was not representative of all LFPR. Given that the study was conducted near a University, many of the respondents had a higher-level degree, which may not be representative of the general waiter population. Additionally, the work environment of the target population was extremely busy. These obstacles led to a limited response rate and limited demographic diversity. This limitation in combination with a defined period for data collection limited the number of restaurants, wait staff and managers in the ultimate sample. Data was collected during the fall and winter months in an upstate New York community. It is important to point out that the results of the study could have been different had data been collected during the spring or summer. Future studies should be conducted during several times throughout the year.

There are also limitations with the survey instruments used for the study. This was the first time both questionnaires were created and used in a study, which questions the reliability of the instruments. Some questions could have been phrased differently, particularly regarding geographic distance of local foods. A few respondents noted confusion over the order

geographic distances were listed in the question about how they personally define local food in relation to geographic distance. The restaurant manager/chef questionnaire was significantly shorter in length than the wait staff questionnaire because it was hypothesized that the managers would not have as much time to offer to the study. This tended to not be the case for most restaurants involved, as many managers and chefs were very enthusiastic about the topic, willing to answer multiple questions on the subject. Finally, the self-reported measures used in the study may be subject to a social desirability bias, particularly with the face-to-face interviews. It is important to point out that some restaurants declined to participate in the study after the subject matter was revealed, which could indicate that those who responded are among the restaurants that source a higher volume of local food than others in the area. In addition, social desirability could have impacted restaurant chef and manager responses regarding the amount of local food on the menu.

It was previously discussed in this paper that local food systems may contain social justice and cultural elements of a community. Similarly, community food systems place emphasis on building a locally based, self-reliant food economy.[45] This idea encompasses all members of a community, including those who may be food-insecure. However, this study unintentionally excludes food-insecure residents of the community due to the fact that these restaurants may be inaccessible or unaffordable to this particular population. Local food or community food systems may still strive to bridge the gap between the food-secure and food-insecure in alternative ways such as urban gardens, soup kitchens, or other emergency food systems. Therefore, the fact that local food promoting restaurants do not target this population

may make it a limitation of the study. While this study contains many limitations, it may serve to assist with future research on the topic.

CONCLUSION

To my knowledge, this is the first study to survey restaurant wait staff regarding their perceptions, motivations, and understanding of local food in the restaurant. Based on the information gathered, while the wait staff may feel confident about their knowledge of local foods on the menu, this may be a false sense of confidence, considering that they may be as unaware of the source of ingredients as the customer is if the restaurant does not provide training about local foods. LFPRs have the potential to be innovators in the local food movement through communicating local food benefits and messages via the wait staff. In order to do so, training wait staff about ingredient source and local food benefits should be emphasized. The results of this research point to a need for further studies to investigate how the consumer interprets information provided by the wait staff about local foods, and if this information is accurate. Further, additional studies should look into the true source of ingredients on LFPR menus.

TABLES AND FIGURES

TABLE 1: Total participant sample sizes by interview or paper survey

Restaurant	Manager/Chef face-to-face Interview (n)	Manager/Chef Paper Survey (n)	Wait Staff face-to-face Interview(n)	Wait Staff Paper Survey (n)
Restaurant 1	0	0	0	3
Restaurant 2	0	2	0	4
Restaurant 3	1	0	1	0
Restaurant 4	0	1	0	2
Restaurant 5	0	0	0	1
Restaurant 6	1	0	1	0
Restaurant 7	0	1	0	2
Restaurant 8	0	2	0	5
Total	8		19	

TABLE 2: Wait staff demographics

Age	**Mean (n=15)**
	31.07 ± 7.3
Race/Ethnicity	**n(%)**
White	14(82.4%)
Hispanic/Latino	1(5.9%)
Black/African American	0(0.0%)
Native American/American Indian	1(5.9%)
Asian/Pacific Islander	0(0.0%)
Other	1(5.9%)
Education	**n(%)**
High School	1(6.3%)
Some College	5(31.3%)
BA/BS	6(37.5%)
MA/MS	1(6.3%)
PhD/MD/Beyond	3(18.8%)
Background in Farming/Gardening	**n(%)**
Yes	1(6.7%)
No	14(93.3%)
Number of Years Waiting Tables	**n(%)**
Less than 1 year	3(18.8%)
1-2 years	2(12.5%)
3-5 years	3(18.8%)
6-10 years	3(18.8%)
More than 10 years	5(31.3%)

TABLE 3: Open-ended definitions of local food provided by wait staff

Definition of Local Food	n(%)
Place Specific Production	13(65%)
Region	5(25%)
City	1(5%)
Unique to the area	3(15%)
Production Method	11(55%)

TABLE 4: Waiter definitions of local food based on geographic distance

Distance	Yes n(%)	Maybe n(%)	No n(%)	Don't Know n(%)	Mean and Std. Dev.
Within the United States (n=17)	5(29.4%)	4(23.5%)	8(47.1%)	0(0.0%)	2.82 ± 0.88
Within 500 miles (n=17)	3(17.6%)	4(23.5%)	10(58.8%)	0(0.0%)	2.59 ± 0.80
Within 100 miles (n=18)	9(50.0%)	4(22.2%)	5(27.8%)	0(0.0%)	3.22 ± 0.88
Within 50 miles (n=18)	11(61.1%)	4(22.2%)	3(16.7%)	0(0.0%)	3.44 ± 0.78
Within the Northeast Region (n=18)	4(22.2%)	12(66.7%)	2(11.1%)	0(0.0%)	3.11 ± 0.58
Within NYS (n=18)	10(55.6%)	6(33.3%)	2(11.1%)	0(0.0%)	3.44 ± 0.70
Within this region of NYS (CNY, FLX) (n=19)	14(73.7%)	4(21.1%)	1(5.3%)	0(0.0%)	3.68 ± 0.58
Within Onondaga County (n=18)	16(88.9%)	1(5.6%)	1(5.6%)	0(0.0%)	3.83 ± 0.51
Within Syracuse (n=17)	15(88.2%)	1(5.9%)	1(5.9%)	0(0.0%)	3.82 ± 0.53

TABLE 5: Foods identified by wait staff as "local foods" and "not local foods"

Local Foods	n=64(%)
Cheese/dairy	7(10.94%)
Apples	6(9.38%)
Vegetables (general)	6(9.38%)
Meat (general)	5(7.81%)
Potatoes	4(6.25%)
Herbs	3(4.69%)
Produce (general)	2(3.13%)
Fruits (general)	2(3.13%)
Tomatoes	2(3.13%)
Squash	2(3.13%)
Kale	2(3.13%)
Eggs	2(3.13%)
Beer	2(3.13%)
Wine	1(1.56%)
Local Brands/Restaurant Foods	6(9.38%)
Other	12(18.75%)
Not Local Foods	**n=50(%)**
Seafood (general)	11(22.00%)
Avocado	7(14.00%)
Meat (general)	5(10.00%)
Banana	4(8.00%)
Orange	4(8.00%)
Pineapple	3(6.00%)
Coffee	2(4.00%)
Other	14(28.00%)

TABLE 6: Customer motivations for purchasing local foods as perceived by wait staff

Customer Motivation	Very Important n(%)	Somewhat Important n(%)	Neither n(%)	Not Very Important n(%)	Not at all Important n(%)	Mean and Std. Dev.
Supports local economy (n=18)	12(66.7%)	3(16.7%)	2(11.1%)	1(5.6%)	0(0.0%)	4.44 ± 0.92
Local food tastes better (n=18)	6(33.3%)	7(38.9%)	5(27.8%)	0(0.0%)	0(0.0%)	4.06 ± 0.80
Safer (n=18)	6(33.3%)	6(33.3%)	4(22.2%)	2(11.1%)	0(0.0%)	3.89 ± 1.02
Reduces environmental impact (n=18)	9(50.0%)	4(22.2%)	2(11.1%)	2(11.1%)	1(5.6%)	4.00 ± 1.28
Other (n=6)	3(50.0%)	0(0.0%)	2(33.3%)	1(16.7%)	0(0.0%)	3.83 ± 1.33

TABLE 7: Number of questions per shift wait staff receive regarding local foods on the menu.

Number of Questions from Customers	n=19 (%)
More than 1 question per shift	3(15.8%)
At least 1 question per shift	2(10.5%)
Questions most of the shifts	4(21.1%)
Questions about half of shifts	3(15.8%)
Questions less than half of shifts	4(21.1%)
Rarely gets questions	3(15.8%)
Mean and Std. Dev.	3.37 ± 1.71

TABLE 8: Common questions asked to wait staff by customers

Questions Asked	n=36(%)
Where is [food] from?	11(31.4%)
Is [food] fresh or frozen?	3(8.6%)
Wait staff opinion	2(6.0%)
Preparation method	2(6.0%)
Is [food] local?	2(6.0%)
Is [food] vegan?	2(6.0%)
How was [food] raised?	2(6.0%)
Food delivery time	2(6.0%)

TABLE 9: Wait staff level of confidence regarding answering customer questions about local foods.

Level of Confidence	n(%)
Very Confident	11(61.1%)
Moderately Confident	3(16.7%)
Somewhat Confident	4(22.2%)
Not at all Confident	0(0.0%)
Mean and Std. Dev.	3.39 ± 0.85

TABLE 10: Wait staff personal motivations behind serving local food on the restaurant menu.

Personal Motivation	Very Important n(%)	Somewhat Important n(%)	Neither n(%)	Not Very Important n(%)	Not at all Important n(%)	Mean and Std. Dev.
Supports local economy (n=18)	15(83.3%)	3(16.7%)	0(0.0%)	0(0.0%)	0(0.0%)	4.83 ± 0.38
Local food tastes better (n=18)	7(38.9%)	8(44.4%)	2(11.1%)	1(5.6%)	0(0.0%)	4.17 ± 0.86
Safer (n=18)	8(44.4%)	6(33.3%)	3(16.7%)	1(5.6%)	0(0.0%)	4.17 ± 0.92
Draws in more customers (n=17)	9(52.9%)	5(29.4%)	2(11.8%)	1(5.9%)	0(0.0%)	4.30 ± 0.92
Makes restaurant more competitive (n=17)	7(41.2%)	6(35.3%)	4(23.5%)	0(0.0%)	0(0.0%)	4.18 ± 0.81
Reduces environmental impact (n=17)	10(58.8%)	4(23.5%)	2(11.8%)	1(5.9%)	0(0.0%)	4.35 ± 0.93
Others (n=5)	2(40.0%)	2(40.0%)	1(20.0%)	0(0.0%)	0(0.0%)	4.20 ± 0.84

TABLE 11: Spearman correlation analysis regarding personal importance of offering local foods on the menu and age

		Age	Supports Local Economy	Local Food Tastes Better	Safer	Draws in More Customers	Restaurant More Competitive	Reduces Environmental Impact
Age	Correlation Coefficient	1	.068	.053	-.004	-.007	-.112	.713
	Sig. (2-tailed)	.	.809	.852	.989	.786	.690	.003**
	N	15	15	15	15	15	15	15

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 12: Number of menu items containing local ingredients from wait staff point of view

Menu items containing local ingredients	n=16(%)
All of the menu items	0(0.0%)
Most of the menu items	10(62.5%)
A few of the menu items	6(37.5%)
None of the menu items	0(0.0%)
Mean and Std. Dev.	2.63 ± 0.50

TABLE 13: Restaurant's source of ingredients from wait staff perspective

Source of ingredients	n(%)
Direct from farmer	11(68.8%)
Local/regional supplier	12(75.0%)
Food co-op	5(31.3%)
Wholesale distributor	11(68.8%)
Manufacturer	4(25.0%)
I don't know	1(6.3%)

TABLE 14: Training methods on local foods reported by wait staff

Training Method	n=21(%)
Explanation of source/food provided by chef or manager	5(23.8%)
Tasting or sampling foods	4(19.0%)
Handouts/Factsheets on local foods	3(14.3%)
Farm trip	1(4.8%)
Learned on their own	5(23.8%)
No training	3(14.3%)

TABLE 15: Barriers to serving local food

Barriers to local food	Wait staff n(%)	Manager n(%)
Expensive	10(58.8%)	2(28.6%)
Inconsistent supply	11(64.7%)	7(100%)
Quality	3(17.6%)	4(57.1%)
Variety	4(23.5%)	2(28.6%)
Perception of harsh working conditions for farm laborers	0(0.0%)	0(0.0%)
No issues	2(11.8%)	0(0.0%)
Other	2(11.8%)	0(0.0%)

TABLE 16: Ingredient source reported by restaurant manager or chef

Ingredient Source	All Ingredients n (%)	Most Ingredients n(%)	Half Ingredients n(%)	Some Ingredients n(%)	No Ingredients n(%)
Local supplier (n=8)	0(0.0%)	2(25.0%)	3(37.5%)	3(37.5%)	0(0.0%)
Food Co-op (n=7)	0(0.0%)	0(0.0%)	1(14.3%)	2(28.6%)	4(57.1%)
Wholesale Distributor (n=8)	0(0.0%)	3(37.5%)	3(37.5%)	2(25.0%)	0(0.0%)
Manufacturer (n=6)	0(0.0%)	0(0.0%)	0(0.0%)	4(66.7%)	2(33.3%)
Other (n=3)	0(0.0%)	0(0.0%)	0(0.0%)	2(66.7%)	1(33.3%)

TABLE 17: Accuracy of wait staff and training methods, confidence levels

Training Mean=2.56±1.31	Accurate (n=4) n(%)	Inaccurate (n=10) n(%)	p-values
1= No training	0(0.0%)	2(22.2%)	(p>0.05) p=0.080[a] 2-tailed
2= Tasting/Sampling	0(0.0%)	2(22.2%)	
3= Explaining from Chef	1(33.3%)	3(33.3%)	
4= Handouts/Factsheets	1(33.3%)	2(22.2%)	
5= Bus Trip to Local Farm	1(33.3%)	0(0.0%)	
Confidence Mean=3.39±0.85			(p>0.05) p=0.748[a]
Not Confident	0(0.0%)	0(0.0%)	
Somewhat Confident	2(50.0%)	2(20.0%)	
Moderately Confident	0(0.0%)	2(20.0%)	
Very Confident	2(50.0%)	6(60.0%)	

a= Mann-Whitney U-Test
No Statistical Significance

TABLE 18: Training methods on local foods reported by chef/manager

Training Method	n=12(%)
Explanation of source/food provided by chef or manager	6(50.0%)
Tasting or sampling foods	3(25.0%)
Farm trip	1(8.3%)
Tell a story about the food	2(16.7%)

FIGURE 1: Diffusion of Innovations Bell Curve[99]

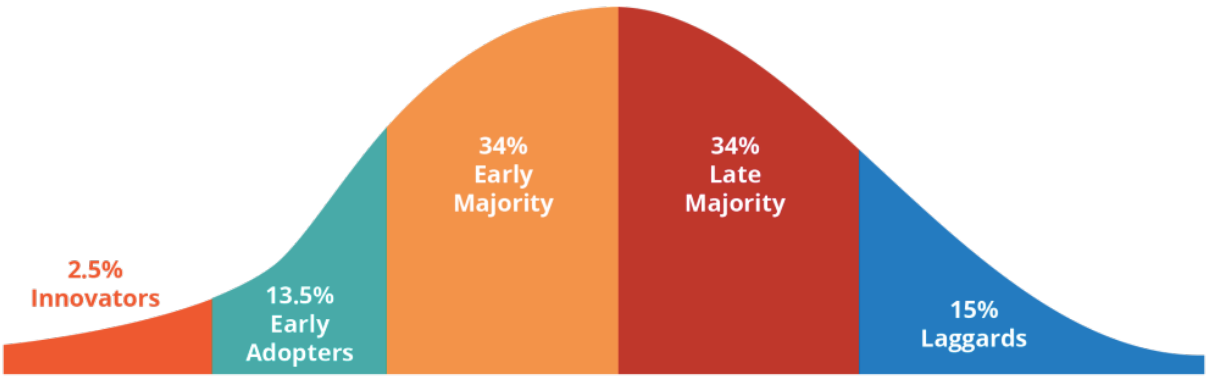


FIGURE 2: Number of wait staff by restaurant and number of years in business

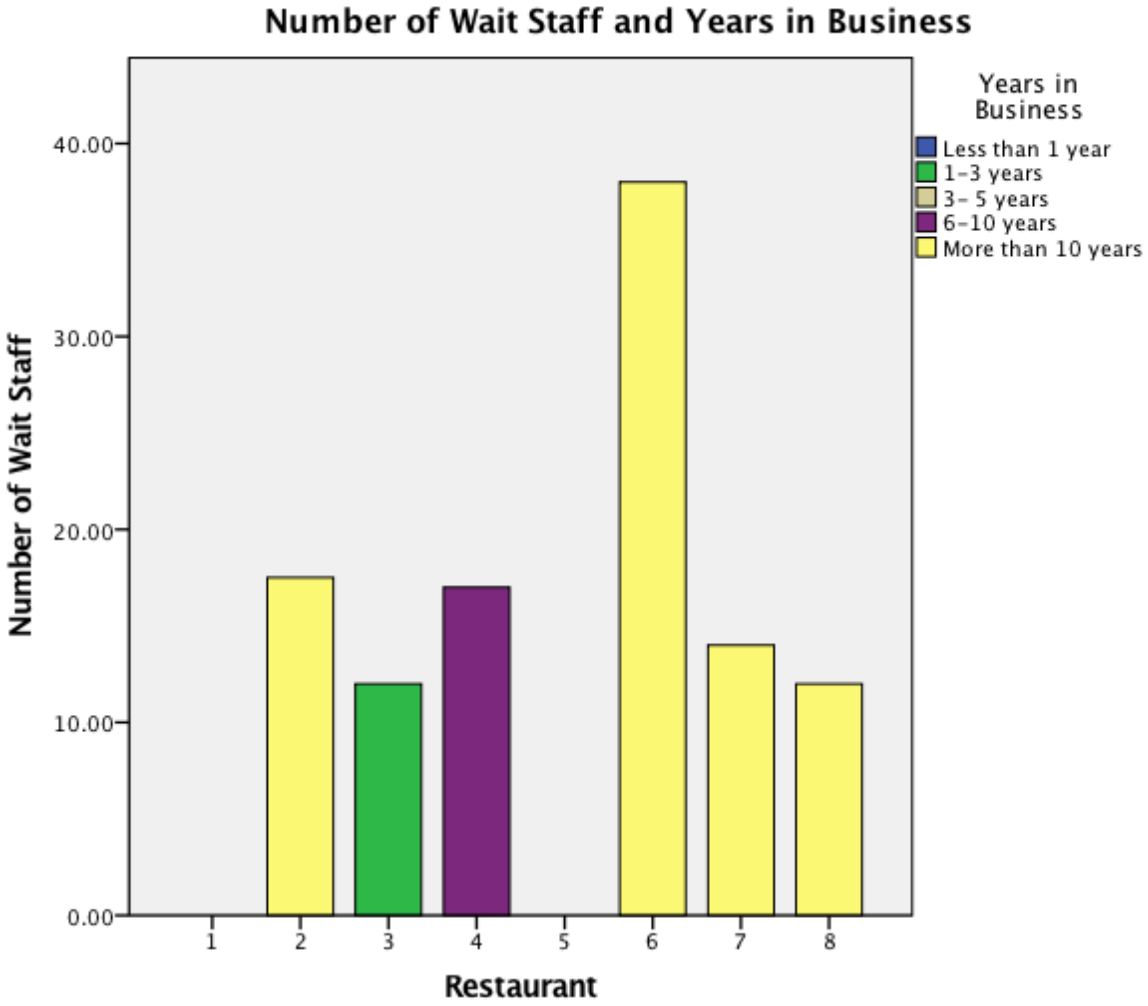
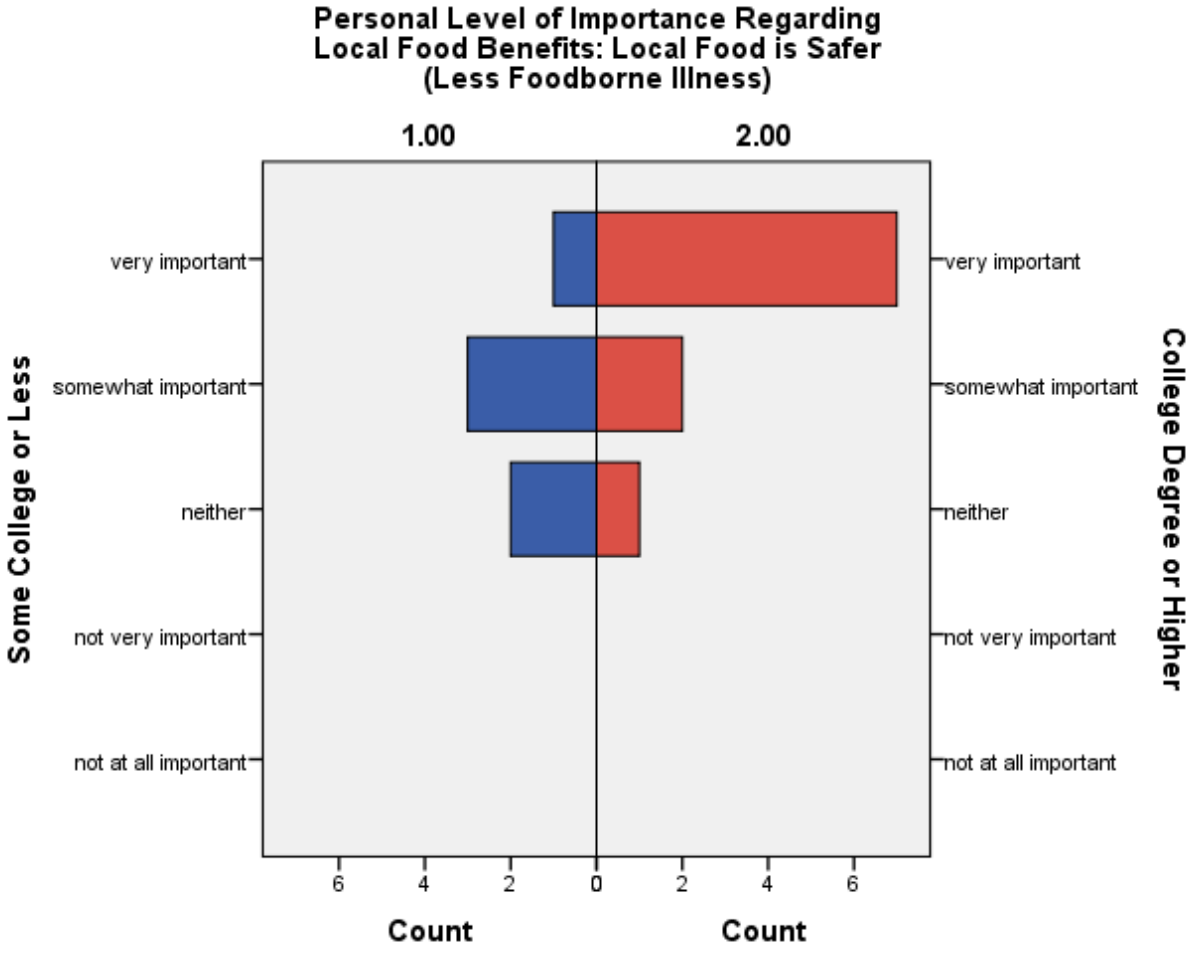
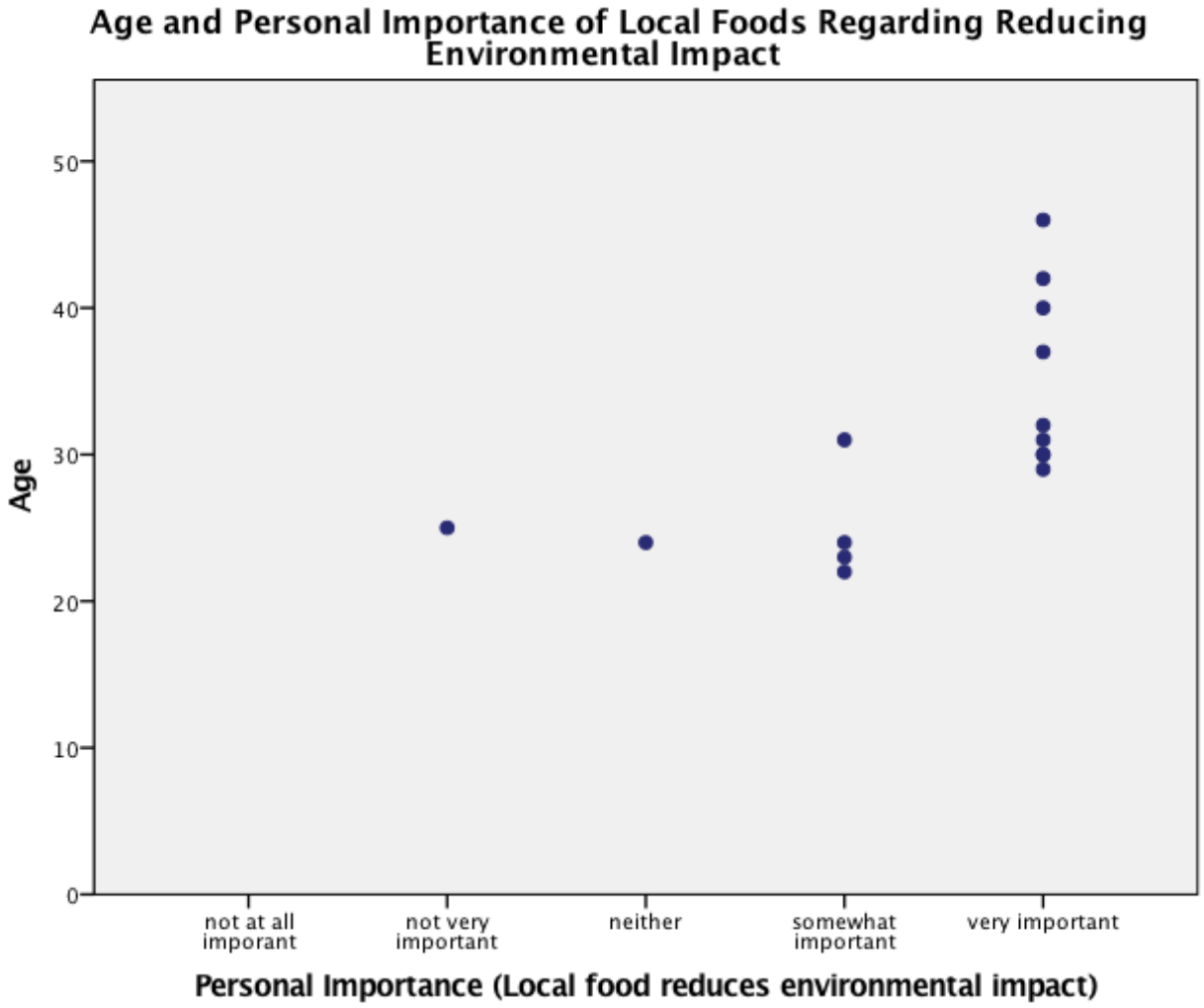


FIGURE 3: Wait staff importance of safety of local foods based on education level



*Statistical significance (p=0.04, r=0.522)

FIGURE 4: Age and personal importance of offering local foods on the menu regarding level of importance of reducing environmental impact



*Statistical significance (p=0.003, r=0.713)

Figure 5: Inaccurate wait staff responses example

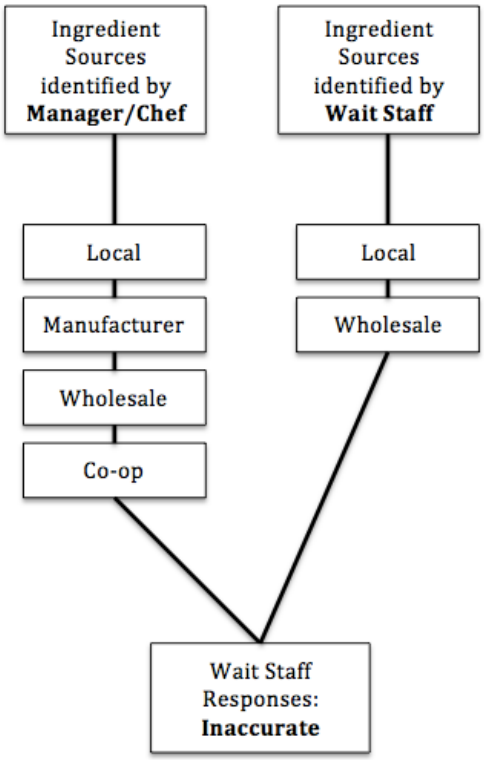
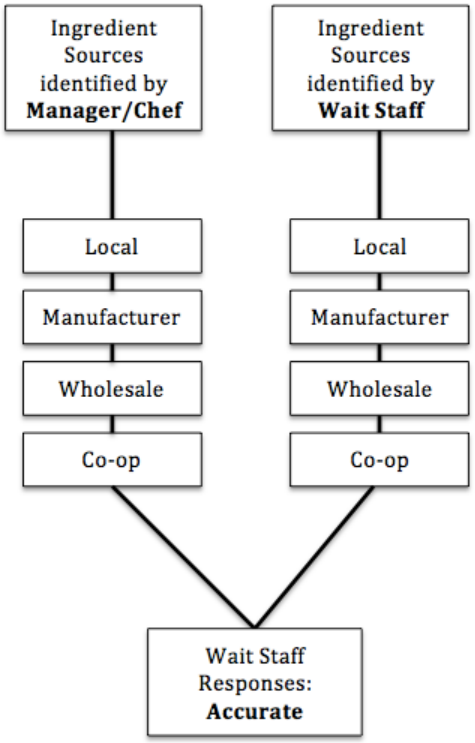


Figure 6: Accurate wait staff responses example



APPENDICES

APPENDIX A: Survey 1 Instrument

Q#	Name	Survey Question	Values
1	Q1	What do you think makes a food a local food (what does it mean to you)?	
2	Q2	Name 3 foods you consider to be local foods.	
	Q2a		
	Q2b		
	Q2c		
3	Q3	Name 3 foods that are definitely NOT local.	
	Q3a		
	Q3b		
	Q3c		
4	Q4	Think about how you would define local food in terms of distance from where it is grown/raised to where it is consumed. To be considered local, would you say that food must be grown/raised:	
	Q4a	Within the United States	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4b	Within 500 Miles	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4c	Within 100 Miles	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4d	Within 50 Miles	4= Yes
			3= Maybe
			2= No
			1= Don't Know

	Q4e	Within the Northeast region	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4f	Within New York State	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4g	Within this region of New York (CNY, FLX)	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4h	Within Onondaga County	4= Yes
			3= Maybe
			2= No
			1= Don't Know
	Q4i	Within Syracuse, New York	4= Yes
			3= Maybe
			2= No
			1= Don't Know
5	Q5	How often do customers ask questions about where the food on the menu comes from?	6= More than 1 question per shift
			5= At least 1 question per shift
			4= Questions most shifts
			3= Questions about half of shifts
			2= Questions less than half of shifts
			1= Rarely get asked questions
6	Q6	What kinds of questions do your customers ask?	
7	Q7	What do you think are the major motivations behind your customers' interest in local food? Customers believe that eating local food:	
	Q7a	Supports local economy	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important

	Q7b	Local food tastes better	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q7c	Safer (reduces risk of foodborne illness)	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q7d	Reduces environmental impact	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q7e	Others	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
8	Q8	How do you personally value the importance of offering local foods on the menu? This next question is about your own views about the benefits of local food. I believe that offering local food on the menu:	
	Q8a	Supports local economy	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q8b	Local food tastes better	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q8c	Safer (reduces risk of foodborne illness)	5= Very important
			4= Somewhat important

			3= Neither
			2= Not very important
			1= Not at all important
	Q8d	Draws in more customers	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q8e	Makes restaurant more competitive	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q8f	Reduces environmental impact	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
	Q8g	Others	5= Very important
			4= Somewhat important
			3= Neither
			2= Not very important
			1= Not at all important
9	Q9	In general, how confident do you feel in addressing questions about local or seasonal food on the menu?	4= Very confident
			3= Moderately confident
			2= Somewhat confident
			1= Not at all confident
10	Q10	What are some examples of questions you have difficultly answering?	
11	Q11	Please describe any training you receive on local foods. Please provide examples.	5= bus trip to local farm
			4= handouts/factsheets
			3= explanation from manager/chef
			2= tasting/sampling
			1= no training or self-trained
12	Q12	Approximately how many menu items contain local ingredients?	4= All of the menu items
			3= Most of the menu items
			2= A few of the menu items

			1= None of the menu items
13	Q13	From what sources does this restaurant purchase its ingredients?	
	Q13a	Direct from farmer	1= yes
			0= no
	Q13b	Local/regional supplier	1= yes
			0= no
	Q13c	Food co-op	1= yes
			0= no
	Q13d	Wholesale distributor	1= yes
			0= no
	Q13e	Manufacturer	1= yes
			0= no
	Q13f	I don't know	1= yes
			0= no
14	Q14	From your experience, what might be some potential barriers or challenges to featuring local food on the menu?	
	Q14a	Local food is more expensive	1= yes
			0= no
	Q14b	Limited or inconsistent supply of local foods	1= yes
			0= no
	Q14c	Quality	1= yes
			0= no
	Q14d	Variety	1= yes
			0= no
	Q14e	Perception of harsh working conditions for farm laborers	1= yes
			0= no
	Q14f	There are no issues with offering local foods	1= yes
			0= no
	Q14g	Other	1= yes
			0= no
15	Q15	Do you have a background in farming or gardening? (Describe):	1= yes
			0= no
16	Q16	How long have you been waiting tables?	5= More than 10 years
			4= 6-10 years
			3= 3-5 years

			2= 1-2 years
			1= Less than 1 year
17	Q17	Age	
18	Q18	Ethnicity	1= White
			2= Hispanic/Latino
			3= Black/African American
			4= Native American/American Indian
			5= Asian/Pacific Islander
			6= Other
19	Q19	Highest Grade Completed	1= High School
			2= Some College
			3= BA/BS
			4=MA/MS
			5= PhD/MD/Beyond

APPENDIX B: Survey 2 Instrument

Q#	Name	Survey Question	Values
1	Q1	How long has your restaurant been in operation?	1= Less than 1 year
			2= 1-3 years
			3= 3-5 years
			4= 6-10 years
			5= More than 10 years
2	Q2	How many waiters/waitresses do you have on staff?	
3	Q3	From what types of sources does this restaurant purchase its ingredients?	
	Q3a	Local/regional supplier	5= All ingredients
			4= Most ingredients
			3= Half of ingredients
			2= Some ingredients
			1= No ingredients
	Q3b	Food co-op	5= All ingredients
			4= Most ingredients
			3= Half of ingredients
			2= Some ingredients
			1= No ingredients
	Q3c	Wholesale distributor	5= All ingredients
			4= Most ingredients
			3= Half of ingredients
			2= Some ingredients
			1= No ingredients
	Q3d	Manufacturer	5= All ingredients
			4= Most ingredients
			3= Half of ingredients
			2= Some ingredients
			1= No ingredients
	Q3e	Other	5= All ingredients
			4= Most ingredients
			3= Half of ingredients
			2= Some ingredients
			1= No ingredients
4	Q4	Please describe any training you	

		provide to your wait staff, specifically regarding local foods.	
5	Q5	From your experience, what might be some potential barriers or challenges to featuring local food on the menu?	
	Q5a	Local food is more expensive	1= Yes
			0= No
	Q5b	Limited or inconsistent supply of local foods	1= Yes
			0= No
	Q5c	Quality	1= Yes
			0= No
	Q5d	Variety	1= Yes
			0= No
	Q5e	Perception of harsh working conditions for farm laborers	1= Yes
			0= No
	Q5f	There are no issues with offering local foods	1= Yes
			0= No
	Q5g	Other	1= Yes
			0= No

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