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Direct Marketing Local Food to Chefs: Chef Preferences and Perceived Obstacles

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Increasing consumer preferences for locally produced foods, exhibited by the nationwide expansion of farmers markets, is likely to affect food-service establishments. This study used a mail and telephone survey to evaluate chefs' preferences and attitudes towards purchasing locally produced foods for their restaurants. Results show that chefs are most concerned with food quality, taste, and freshness. Chefs of small gourmet, independently owned restaurants are more likely to purchase local foods. Gourmet chefs are more concerned with food-production practices and thus see the value of purchasing local foods. Lack of information was found to be the largest hurdle to purchasing local products, clearly demonstrating the need for additional information and product samples from local producers.

Rising consumer food-safety concerns, due in part to the widening separation between agricultural producers and consumers, as well as to recent global food-safety scares (Mad Cow, E. coli, etc.), have consumers questioning the origin of their food products. Additionally, health-conscious consumers are now purchasing fruits and vegetables in larger quantities, some requiring specific production methods such as organic (Bukenya et al. 2007). Consumer concerns regarding food origin and production methods have initiated a movement focused on consumption of locally grown products. This movement is evident in the surge in the number of farmers markets in the United States (a 150 percent increase from 1994 to 2006 [USDA-AMS 2007]). Interestingly, recent literature has shown that consumers are willing to pay more for locally grown products as well (see Loureiro and Umberger 2005; Umberger et al. 2003). As locally produced foods increase in popularity, it is reasonable to question how the food-service industry will be affected. Will consumers demand product-origin information on menus? Will restaurants incorporate local foods into their menus to distinguish themselves from competitors? These issues are particularly relevant in Nevada, where the economy relies heavily upon tourism

and gaming, resulting in a disproportionately large number of high-end and gourmet restaurants. This study examines gourmet chefs' preferences for locally produced food products/ingredients, their attitudes toward purchasing locally, the product attributes they find to be of the most importance, and the issues they perceive as obstacles to making local purchases.

A variety of literature addresses the topic of direct-marketing agricultural products to chefs and restaurants. Montri, Kelley, and Sanchez (2006) examined chefs' preference for locally grown edamame cultivars in Philadelphia. A similar study by Gao and Bergefurd (1998) sought to determine chefs' preferences for locally grown culinary herbs in southern Ohio. Other articles have placed their focus more on case studies of small producers and their experiences in working with local chefs and restaurants. Kelley (2006), Wright (2005), and Strohbehn et al. (2002) all provide examples of the steps producers have taken to enter the market for supplying chefs and restaurants, and provide tips for producers who are interested in breaking into this market. Pepinsky and Thilmany (2004) and Thilmany (2004) outline the struggles and accomplishments of Colorado's successful chef direct-marketing cooperative, Colorado Crop to Cuisine. This study adds to the present literature by providing valuable information on gourmet chefs' perceptions of and preferences for locally produced foods, an area of focus that thus far has been seen only in studies of consumer attitudes and perceptions (see Wolf, Spittler, and Ahern 2005; Govindasamy, Italia, and Adelaja 2002; Bukenya et al. 2007).

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This study was funded in part by the USDA Agricultural Marketing Service and the Nevada Agricultural Experiment Station, publication #51077055.

The authors would like to thank Slavica Vusovic for technical assistance and two anonymous reviewers for their helpful comments and suggestions.

Survey Data

In order to assess chefs' preferences for locally produced foods (produced in Nevada), a mail survey was sent to 289 executive chefs at gourmet and high-end restaurants throughout Nevada as listed by the Nevada Restaurant Association in 2005. Seventy-six surveys were returned, a response rate of 26 percent. A follow-up phone survey was conducted in 2007 to which 72 chefs responded, a total sample of 148 respondents. The survey was modeled after that used by the Food Processing Center at the University of Nebraska-Lincoln (2003) and comprised three sections. The first section of the survey requested information about food-service segment, restaurant ownership, meal units, and supplier-choice autonomy. The second section requested information about the food attributes deemed to be important by chefs in their assessment of purchasing decisions. The third section of the survey focused on the respondents' use and perceptions of locally grown food products. Table 1 provides a complete overview of survey sample statistics. Results are described in the following paragraphs.

Restaurant Demographics

When a producer approaches a chef or dining establishment in hopes of reaching a supply agreement, it is important to know the ownership of the establishment, the size of the establishment, the food-service segment with which the establishment is associated, and the level of autonomy the chef has in terms of making purchases. Knowing the ownership structure of a food-service establishment may provide vital information to producers wishing to direct market. For example, a corporate-owned restaurant, such as those in casinos, may be more concerned with avoiding waste and maximizing profit than with promoting local products. A smaller, private, or locally owned establishment, on the other hand, may find promotion of local products to be beneficial to its own status as a local business. While 47 percent of the chefs responding to this survey identified their establishment as corporate or a chain/franchise restaurant, the other 53 percent were independently owned dining establishments.

The size of the establishment, measured in meal units served per day, week, or month, can potentially provide valuable information as to

its preferences. A large establishment may have quantity as its primary supply goal, while a small establishment may place more emphasis on unique products or services. Survey respondents served an average of 1,034 meal units each day, with a range of 60–11,000 meals each day, indicating that the respondents represented establishments ranging from somewhat small to quite large.

The food-service segment with which the establishment is associated determines the type of food the establishment serves. For example, a specialty restaurant with an emphasis on health or natural foods may be interested in purchasing only lean meat for healthier dishes, while a traditional steakhouse may be interested in all cuts of beef, including marbled cuts with a higher fat content. Forty-one percent of the responding chefs identified their establishment as gourmet or fine dining; 38 percent said their establishment is a steakhouse, seafood restaurant, or ethnic restaurant; 16 percent described their establishment as casual/family dining; and five percent said their establishment falls into the category of "other."

The level of autonomy the chef has in making purchases determines whether or not the chef can purchase the products he/she desires from whom-ever he/she wishes. Some chefs may have to have purchases approved by the establishment's owner or manager or be required to use a pre-designated supplier. The chefs in this survey were asked to rate their level of autonomy on a 4-point scale, from no autonomy (1) to complete autonomy (4). The average autonomy rating of respondents was 3.4, meaning that, on average, they have nearly complete autonomy.

Current Purchasing Patterns and Obstacles to Buying Locally

Chefs were asked to provide information about their attitudes toward local purchases, including whether they currently make local purchases, why they began making local purchases, why they continue or have discontinued, and what they view as obstacles towards making additional local purchases (see Table 1). While 69 percent of respondents to this survey said they have never purchased from local producers, 31 percent said they currently make local purchases or have made local purchases in the past. Producers who are currently making local

Table 1. Overview of Survey Statistics.

Variable	Description	Frequency (%)	Mean	Std. dev.
Segment	1: Gourmet	41	1.8649	0.8779
	2: Ethnic/steakhouse	38		
	3: Casual/family	16		
	4: Other	5		
Ownership	0: Franchise/ corporate	47	0.5270	0.5010
	1: Independent	53		
Meals	Number of meals served daily		1034	2240
	1: < 1000	83		
	2: 1001–5000	11		
	3: 5001–10000	3		
	4: > 10000	3		
Chef title	1: Executive chef	50	2.0694	1.2213
	2: Owner/operator	14		
	3: Manager	15		
	4: Other	21		
Location	0: Other	43	0.5735	0.4964
	1: Las Vegas	57		
Autonomy	1: No autonomy	4	3.4595	0.7593
	2: Little autonomy	4		
	3: Some autonomy	34		
	4: Complete autonomy	58		
Buy local	Current or previous local (Nevada) food purchases		0.3108	0.4644
	0: No	69		
	1: Yes	31		
Duration	Duration of establishment's locally grown (Nevada) food purchases (years)	N/A	12.7632	18.6796
Local purchases	Percentage of establishment's monthly locally grown (Nevada) food purchases	N/A	18.6111	22.1247

purchases have been doing so for an average of 12 years, and make an average of 18 percent of their monthly purchases from local producers.

Chefs who responded that they did not currently make local purchases and had not done so in the past were asked to identify factors which precluded them from purchasing local products (see Table 2). Three-quarters (75 percent) of the respondents who do not make local purchases said they do not purchase locally because they are unaware of their local options or they lack the information necessary to make such purchases. Inadequate availability and variety were also cited as major barriers to purchasing locally, as was a lack of authority to choose suppliers. However, when asked about barriers to making local purchases, the barrier perceived as being most prohibitive was the belief that local producers could not supply the quantity or volume required. Several chefs indicated that inconsistent quality of products kept them from purchasing locally, indicating either that they had made previous purchases and had been dissatisfied with them or that they assumed the quality would be inconsistent. Another issue raised by chefs was the belief that the

local climate could not support the specific products they desired, an issue that may have more relevance in climates that are less conducive to agriculture, such as the arid climate that exists in many parts of Nevada.

Product Attributes of Importance

“Product attributes” refers to factors chefs may consider when inspecting individual products prior to purchase. Chefs responding to the survey were asked to rate these attributes on a five-point scale, from not important (1) to extremely important (5). The average rating was taken for each attribute to determine the average level of importance of each (see Table 3).

Two quality attributes were given average ratings in the “extremely important” range (4.5–5). The attributes given the highest average importance rating were quality of the product and the product’s taste, a result that seems fairly intuitive given that regardless of the nutritional or business goal of the chef, his or her main goal is to provide high-quality, tasty dishes.

Table 2. Factors Preventing Choice of Local Products.

Factor	Response (%)
Why haven't you purchased locally, or discontinued doing so?	
Incomplete information/lack of awareness	75.0
Inadequate availability/variety	12.5
Do not have the authority to make such decisions	12.5
What do you view as the greatest challenges/obstacles to purchasing locally?	
Inadequate volume/quantity	26.1
Inconsistent quality of products	21.7
Local climate does not support desired products	17.4
Incomplete information/lack of awareness	13.0
Costs too high	8.7
Inadequate organic variety	4.3
Inadequate availability	4.3
Issues with delivery	4.3

Table 3. Mean Food Attribute Ratings, Scale of 1–5 (Entire Sample).

Attribute	Mean	Std. dev.
Quality	4.99	0.12
Taste	4.99	0.12
Signature item	4.18	0.97
Marketability	4.16	0.93
Cost	4.15	0.97
Unique	4.15	0.96
Menu applicability	4.11	1.05
Nutritious	4.03	1.06
Environmental/humane animal treatment	3.45	1.50
Know growing process	3.35	1.41
Ease of preparation	3.16	1.34
Brand item	3.07	1.28
Know grower	3.06	1.44
Certified organic	3.05	1.56
Local (Nevada)	2.92	1.38

Six product attributes were found to have average ratings in the “very important” range (3.5–4.4). The first three of these attributes are the product’s ability to serve as a signature dish or menu item for the chef and dining establishment, the product’s marketability, and the product’s cost. The signature dish rating is likely a result of increased pressure on chefs to provide patrons with unique products or products that serve a specific niche. Similarly, the marketability of products is crucial, as a product that holds little or no appeal to the establishment’s patrons is essentially useless to the chef, while purchasing a product with versatile menu applications allows chefs to cut costs and eliminate waste by purchasing fewer inputs. For this survey, “cost” referred to the amount the dining establishment’s patrons would need to pay to obtain the product as part of a meal. The fact that this was given a high level of importance indicates that chefs are concerned with keeping costs reasonable for their patrons, an attitude that may also have its roots in the chefs’ desire to remain competitive within their market.

Also falling into the “very important” category were the product’s “uniqueness,” ability to serve a variety of menu applications, and the nutritional aspects of the product. In an era where product diversification can be the key to attracting and maintaining customers, producers who feel they have a unique or special product should ensure that potential chef customers are aware of these qualities. And as health consciousness among consumers increases, having the ability to provide customers with products that meet their nutritional preferences may allow chefs to maintain their competitive edge.

The final seven product attributes were found to have average ratings in the “somewhat important” range (2.9–3.5). The first two of these somewhat important attributes relate to production practices: the environmentally and humanely conscious treatment of animals, and the chef being personally aware of the growing process. This result indicates that it is at least somewhat important to chefs to have some personal knowledge of the products they plan to serve their customers. Ease of the product’s preparation, familiarity with the product’s brand, and the

chef personally knowing the producer ranked third, fourth, and fifth in this category, respectively. Finally, certified organic or natural products and locally produced products were rated of lowest importance. Although these attributes were given a lower rating than expected, it is important to note that the standard deviation was slightly higher than that of the attributes receiving similar average ratings, meaning there was great variation in the ratings. This may indicate that chefs' personal preferences for certified organic or natural products are not consistent across the sample. Depending on the particular chef's preferences and the market the chef's establishment seeks to serve, these production processes may be considered more or less important. Table 4 provides an overview of attribute preferences by restaurant type and lists which of the ratings were statistically significantly different among restaurant types.

Additional information about the preferences of the various food service segments can be gained from comparing attribute ratings across establishment type. Product cost was much more important to chefs representing casual/family restaurants compared to those representing gourmet restaurants, while uniqueness of product was more important to gourmet restaurants than casual/family restaurants. Local (Nevada) products, signature products, and ease of preparation were more important to chefs representing ethnic restaurants and steakhouses than gourmet or casual/family restaurants. Organic production, the environmentally and humane treatment of animals, and knowing the grower personally were much more important to the chefs of gourmet restaurants relative to all other restaurant types, which is not surprising given that gourmet restaurants serve dishes that are typically more expensive than the dishes found in other restaurants. It would be expected that chefs of gourmet restaurants would therefore place more emphasis on the higher-cost differentiated products than would chefs representing other restaurant types.

Logit Model

A logit model was used to examine the effects of restaurant/chef demographics and food attribute preferences on the decision to purchase locally (Nevada) produced foods. The choice of the restaurant/chef choice to purchase locally (Nevada) foods is represented by

$$(1) \quad Y_i^* = \alpha_i + \text{Market}\beta + \text{Technical}\beta + \text{Gourmet}\beta + \text{MealsLG}\beta + \text{Autonomy}\beta + \text{Location}\beta + \text{Ownership}\beta + \varepsilon_i^*$$

With the use of the logistic distribution, the discrete binary choice is

$$(2) \quad \begin{aligned} Y_i &= 0 \text{ if } Y_i^* \leq 0 \text{ (does not purchase local} \\ &\text{foods),} \\ Y_i &= 1 \text{ if } Y_i^* > 0 \text{ (purchases local foods).} \end{aligned}$$

Independent variables include "Gourmet," a dummy variable presenting gourmet restaurants; "Autonomy," representing the chef's level of autonomy in restaurant food input purchases; "Location," a dummy variable representing a Las Vegas, NV location; "Ownership," a dummy variable representing independent restaurant ownership; and "MealsLG," a dummy variable representing restaurants that serve more than 250 meals per day, i.e. larger restaurants.

For the purposes of the logit analysis, the fifteen product attributes were placed into smaller subgroups through the use of factor analysis (principle axis factoring using a Varimax rotation with Kaiser normalization). The factor analysis placed the product attributes into three main groups (see Table 5). The first group, labeled "Market," was made up of the attributes related to marketing food products, including serving as a signature product, marketability, nutrition, uniqueness, and menu appeal. The second group, "Production," was composed of the attributes associated with the production methods of the product, including certified organic, humane treatment of animals, locally grown, and knowing the farmer personally. The final group was labeled "Technical," and included the attributes ease of preparation, awareness of the growing process, cost, and brand name. The attributes quality and taste were deleted by the factor-analysis routine due to colinearity issues. Logit model variable descriptive statistics can be found in Table 6.

Logit results show that chefs who were more concerned with production issues such as certified organic and knowledge of the farmer were more likely to purchase local foods (23 percent more likely). Chefs representing gourmet and independently-owned restaurants were also more likely to purchase local foods (28 percent and 27 percent, respectively). Not surprisingly, the restaurants that

Table 4. Mean Food Attribute Ratings by Restaurant Type, scale 1–5.

Attribute	Gourmet			Ethnic/steakhouse (ES)			Casual/family (CF)			Other (O)			Statistically significant differences
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.			
Quality	5.00	0.00	4.96	0.19	5.00	0.00	5.00	0.00	5.00	0.00	None		
Taste	5.00	0.00	4.96	0.19	5.00	0.00	5.00	0.00	5.00	0.00	None		
Marketability	4.13	0.93	4.25	0.96	4.25	0.94	4.25	0.94	3.50	0.54	G/O*, ES/O**, CF/O**		
Nutritious	4.03	0.96	4.21	0.95	3.92	1.47	3.00	1.47	3.00	0.00	G/O***, ES/O***, CF/O***		
Cost	3.97	1.06	4.21	0.99	4.50	0.51	4.00	0.51	4.00	1.07	G/CF***, ES/CF*		
Unique	4.30	0.70	4.11	1.12	3.75	1.11	4.50	1.11	4.50	0.54	G/CF**, CF/O**		
Signature item	4.17	0.87	4.25	1.07	4.08	1.06	4.00	1.06	4.00	0.00	ES/O*		
Menu applicability	4.10	0.99	4.18	0.97	3.83	1.43	4.50	1.43	4.50	0.54	CF/O*		
Local (Nevada)	2.97	1.09	3.21	1.49	2.75	1.51	1.00	1.51	1.00	0.00	G/O***, ES/O***, CF/O***		
Ease of preparation	2.97	1.21	3.50	1.36	3.25	1.45	2.00	1.45	2.00	1.07	G/ES**, G/O**, ES/O**, CF/O**		
Brand item	2.97	1.09	3.14	1.47	3.17	1.37	3.00	1.37	3.00	1.07	None		
Know grower	3.36	1.38	3.11	1.46	2.75	1.39	1.50	1.39	1.50	0.54	G/CF*, G/O***, ES/O**, CF/O***		
Certified organic	3.50	1.40	2.86	1.68	2.93	1.53	1.50	1.53	1.50	0.54	G/ES**, G/CF*, G/O**, ES/O**, CF/O***, CF/O***		
Environmental/humane animal treatment	3.80	1.29	3.36	1.51	3.42	1.69	1.50	1.69	1.50	0.54	G/ES*, G/O***, ES/O**, CF/O***		
Know growing process	3.40	1.27	3.14	1.52	3.70	1.72	3.50	1.72	3.50	0.54	None		

*, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5. Factor Matrix.

Attribute	Market	Factor	
		Production	Technical
Marketability	0.751		
Nutritious	0.834		
Unique	0.545		
Menu applicability	0.533		
Signature item	0.745		
Know grower		0.674	
Certified organic		0.643	
Environmental/humane animal treatment		0.616	
Local (Nevada)		0.495	
Ease of preparation			0.657
Know growing process			-0.633
Cost			0.614
Brand item			0.581

serve a higher volume of meals and the chefs who were more concerned with the marketing aspects of their food were less likely to purchase local foods (25 percent and 37 percent, respectively). Autonomy was not statistically significant, but was positive, as was expected. Location was not statistically significant, but was negative, indicating that restaurants in Las Vegas may be less concerned with local foods than are restaurants in other areas of Nevada. Complete results are shown in Table 7.

These results tend to indicate that local producers looking to direct market their foods to food-service establishments may find better success focusing on independently owned gourmet restaurants that serve a lower volume of meals per day. The chefs associated with these types of establishments see the value in making local food purchases, are more concerned with the production/farming practices employed, and are less concerned with the potential marketability of their products. In contrast, corporate-owned restaurants that serve a larger volume of meals may be more concerned with quantity and less concerned about farming practices, which is likely due to meal pricing and clientele.

Conclusions and Marketing Implications

This study assesses chefs' preferences for locally produced food products through two surveys of restaurants in Nevada. Using a food-product-attribute rating scale, the product attributes found to be most influential to chefs were taste and quality. A desire to diversify was also evident in the chefs' responses, as they gave high average importance ratings to the uniqueness of the product and the product's ability to serve as a signature menu item. As quality and taste are not necessarily recognizable prior to consumption, producers may find it beneficial to supply chefs with product samples to entice them to make future purchases.

Chef preferences for consistency in both supply and quality show that it is important that producers entering this market prove themselves to be more reliable than current suppliers/distributors (a result also shown in Gao and Bergefurd 1998). As local producers will likely charge higher prices than large distributors, it is imperative that the producer provide the chef with additional value through such activities as on-time deliveries of the quantity agreed

Table 6. Logit Model Variable Descriptive Statistics.

Variable	Description	Frequency (%)	Mean	Std. dev.
Buy local	0: Don't purchase locally	69	0.311	0.464
	1: Purchase locally	31		
Gourmet	0: Other restaurant	59	0.405	0.493
	1: Gourmet restaurant	41		
Ownership	0: Franchise/corporate	47	0.527	0.501
	1: Independent	53		
MealsLG	0: Number of meals served daily < 250	58	0.419	0.495
	1: Number of meals served daily > 250	42		
Location	0: Other	47	0.527	0.501
	1: Las Vegas	53		
Autonomy	1: No autonomy	4	3.459	0.759
	2: Little autonomy	4		
	3: Some autonomy	34		
	4: Complete autonomy	58		
Market	Rating from 1 to 5, where 1 means not important and 5 means extremely important	1: 0	4.297	0.804
	2: 4			
	3: 10			
	4: 39			
	5: 47			
Production	Rating from 1 to 5, where 1 means not important and 5 means extremely important	1: 5	3.351	1.206
	2: 20			
	3: 33			
	4: 18			
	5: 24			
Technical	Rating from 1 to 5, where 1 means not important and 5 means extremely important	1: 0	3.500	0.907
	2: 13			
	3: 38			
	4: 34			
	5: 15			

Table 7. Logit Model Results.

Variable	Coefficient	Marginal	Z Stat
Market	-2.545*** (0.639)	-0.372***	-3.98
Production1	0.617 (0.440)***	0.237***	3.68
Technical	-0.701 (0.432)	-0.102	-1.62
Gourmet	1.747 (0.620)***	0.283***	2.82
MealsLG	-1.843 (0.927)**	-0.250**	-1.99
Autonomy	0.214 (0.453)	0.031	0.47
Location	-0.131 (0.722)	-0.019	-0.18
Ownership	1.888 (0.646)***	0.272***	2.92
Constant	4.838* (2.701)		1.79
Observations: 148			
LR chi ² : 73.25			
Pseudo R ² : 0.3993			
Log Likelihood: -55.0967			

*, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. Standard errors are in parentheses.

upon. If a producer finds that his or her production volume has not met expectations, finding another local producer to fill the order is one way to ensure continued good relations.

It is also worth noting that the importance rating of product attributes differed among the restaurants types represented by the chefs included in this study. Knowledge of the grower and/or growing process and the production methods, including organic, were by far more important to gourmet chefs. The results of this study show that chefs from gourmet restaurants may be more aware of the value of making local food purchases and may be more concerned with the production/farming practices employed and less concerned with the potential marketability of

their products. Additionally, restaurants that were smaller and/or independently owned were more likely to purchase local products. These results show that seeking the “right fit” in a chef or dining establishment is important for small local producers interested in direct marketing. Given these results, larger family/casual dining and/or corporate-owned restaurants are less likely to be a good fit for local food producers.

It is important to note that nearly all of the chef respondents cited a lack of information as a barrier to working with local producers. Many chefs were unaware that Nevada has an agriculture industry, nor did they have knowledge of the products currently being grown/produced in Nevada. This emphasizes

how essential it is that producers wishing to enter this potentially valuable niche market provide chefs with accurate and complete information about their production capabilities. This information should include a schedule of seasonal availability, production-volume estimates, prices, and any information that may differentiate the producer's operation from other operations (such as certified organic, hormone-free, etc.).

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