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The Divergence of Defining Local Food – Consumer Co-op versus Conventional Grocery Shoppers

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The Divergence of Defining Local Food – Consumer Co-op versus Conventional Grocery Shoppers

Abstract

The "Locally grown" or "buy local" concept has brought tremendous impacts in many different market venues. This study focuses on finding whether there is any difference on the local definition between traditional shoppers (Kentucky food consumers) and food co-op shoppers. Particularly, the definition of "local" is discussed in three different concepts, i.e., geographical, practical, and supportive concepts. Our results reveal that shoppers between food co-op and traditional stores define local quite differently. An interesting outcome indicates that the food co-op shoppers don't hold a consistent definition of local if we segment shoppers into three groups, like the core/mid-level/periphery based on the percentage of shopping at store. The primary contribution of this study is the identification of clear consumer differences across consumers' viewpoints on the definition of local across stores between the traditional and food co-op shoppers with important merchandising and sourcing implications for corresponding grocers.

Introduction

The "Locally grown" or "buy local" concept has brought tremendous impacts in many ways to local producers, farmers markets, food co-op, community support agriculture (CSA), restaurants, food hubs, etc. Consumers tend to buy locally produced foods because they believe that local foods are healthier (Hartman Group, 2008). Furthermore, consumers have gradually expanded their options for local food options because they are concerned about the globalized food system, requiring substantial "food miles" to transport food from producers to consumers. Meanwhile, many consumers are willing to buy locally produced foods as a way to support local economies and engage with their local communities, food co-op, farmers markets, and producers.

Nevertheless, consumers don't treat the "local" concept consistently. The majority (about 75%) of consumers define "local" as within 50 miles from where they bought their food, and approximately 25% of consumers treat "local" concept at least above 100 miles (McFadden, 2012), while a well-received publication defined "local food" as food grown and consumed within a 100-mile radius in Canada (Smith and Mackinnon, 2007). Lim and Hu (2012) concluded that Canadian consumers are equally satisfied if the food is produced either within 50 km or within 160 km. Therefore, the "local" definition seems an inconsistency among consumers; some can accept wider distance radius, and others can accept short distance. Instead of focusing on food miles to define local, this study attempts to explore on various local definition, i.e., geographical, practical, and supportive concepts, and how "food co-op" consumers view the various nuances of the local concept as compared to other "traditional" consumers.

Food co-op is an organization which is owned by the members who use its services that reconnect farmers and consumers, support local, and champion more environmentally sustainable food systems (Sumner, McMurtry, and Renglich, 2014). Food co-op has its own local sourcing program that potentially attracts shoppers who have higher awareness in choosing healthy/fresh/local attributes about their products. While the traditional shoppers may also have the same interests on healthy/fresh/local attributes about their products, it becomes an interesting question whether the food co-op shoppers would share the same "local" definition with the traditional shoppers or not. The objective of this study is to examine the "buy local" value proposition and definition, comparing differences and similarities between traditional and food coop consumers.

Consumers may treat the CSA, food co-op, or farmers markets as an educational venue to know more about their vendors and how they practice their production, as well as look for an entertaining venue to bring their kids or friends to enjoy a weekend break. We have observed consumers to hold different definitions and value propositions related to the geography of food. A National Grocers Association (NGA, 2013) study confirms a growing consumer interest in local foods and suggests merchandising strategies focusing on healthy/fresh/local attributes and expanded categories that will help consumers to raise their confidence in the local foods diet. Food coop patrons are similarly interested in access to local food, but are also driven by additional supply chain preferences. Therefore, shoppers from different market venues may treat the "local" definition differently. Especially, food co-op shoppers may have potential divergence in defining "local" comparing with traditional shoppers.

Literature Reviews

Many researchers from different states have been investigating the "buy local" attributes for over three decades (Eastwood, Brooker, and Orr, 1987; Lehman, et al., 1998; Loureiro and Hine, 2002; Selfa and Oazi, 2005; Pirog and McCann, 2009; Carpio and Isengildina-Massa, 2009). The discovery of these researchers is shown that consumer preference for local food has been slightly changed. Consumers, nowadays, are looking for fresher food alternatives, do care more about the local economic development, and are willing to support the local community or environmentally sustainable practices. Therefore, the branding strategies, like "locally grown" or state-certified logos, cater to consumer purchasing preference. Indeed, researchers have found that consumers are willing to pay a premium for a locally grown food or locally produced products.

Basically, the locally grown product has been defined by the 2008 U.S. Farm Bill (Food, Conservation, and Energy Act of 2008, P.L. 110-246, section 6015). The definition declares that any product to be marketed as "locally or regionally produced agricultural food product" must be transported less than 400 miles from its origin or within the state in which it is produced. Within 400 miles or within the state/region boundaries seems a wider acceptant level for not

discriminating against the majority of consumers in defining "local." However, consumers may have different preferences for the "local" definition in choosing the product what they valued most and which is the most catering to their demand.

Although the USDA adopted 400 miles radius or within the state to regulate the definition of local food, there is no any agreement showing a distance-related logo to promote local food in any market (Martinez, et al., 2010). When the local definition is related to distance, many researchers have concluded a slight divergent in distance if comparing what they have found. The majority of consumers define "local" as within 50 miles from where they bought their food, and approximately 25% of consumers treat "local" concept at least above 100 miles (McFadden, 2012). Lim and Hu (2012) found that Canadian consumers are equally satisfied if the food is produced either within 50 km or within 160 km, while some consumers perceived the local definition to be more limited, only 50 miles or less (Adams and Adams, 2008; Hu, et al., 2010).

As early as 1980, State Department of Agriculture and Commerce around the U.S. have established home state branding logos, slogans, and other state marketing campaigns to promote local food (Onken and Bernard, 2010). Marketers have been widely adopted the state boundary to promote the locally grown fresh produce or product. Although consumers in each state may not treat the state boundary in the same way, consumers' preference in deciding which product is the most appealing to them may be reflected in their recognition of the "local" definition. However, researchers have found that consumers do have a strong willingness to purchase under a state-branded logo, such as *Ohio Proud* or *Kentucky Proud* (Jekanowsky, Williams II, and Schiek, 2000; Ernst and Darby, 2008).

Darby, et al. (2008) attempted to look into other localness elements, like farm size and freshness, that are also the important attributes to the local definition among consumers. Consumers may perceive the benefit and geographical definitions of local food very differently (Campbell, Mhlanga, and Lesschaeve, 2013). Particularly, the purchasing behavior may have also been linked to supporting local farmers (especially for whose farms are local, small, and family-owned) and local economy (Hughner, et al., 2007). Therefore, it raises an interest on discovering other concepts that are also related to the "local" definition.

Although many researchers have focused on general consumers as their research group when they attempted to explain how consumers perceived the definition of "local," it seems that no any study has particularly looked into shoppers and store formats' attributes. This study is trying to explain the definition of "local" between different shopper groups, i.e., traditional and Food co-op shoppers. Especially, the food co-op shoppers' preference for the definition of "local" would be potentially different from traditional shoppers. A co-op store aims to provide their members to eat better and spend less money to against overpriced groceries that are common to many urban areas. Therefore, it is important to understand if there is any heterogeneity between traditional and food co-op shoppers.

Data and Empirical Model

In order to analyze the heterogeneity of the local definition between traditional and co-op shoppers, this study utilized an identical questionnaire to survey food co-op members and traditional shoppers. Regarding the traditional shoppers, the annual NGA survey outcomes for 2013 is utilized as a standard rule. Since we don't have the raw data of the consumer panel survey as collected by the NGA, and our survey questions were designed to ask the same questions that are asked in the NGA's survey, the outcomes of our Kentucky Food Consumer Survey (KFCS) do share many similarities in the distribution with those characteristics in the NGA's consumer survey (Figure 1). Therefore, the Kentucky food consumer respondents will represent as our traditional shoppers.

A total of 1,923 shoppers, only members, from eight food co-op retail stores in City Market (Burlington, VT); Community Food Co-op (Bellingham, WA); Davis Food Co-op (Davis, CA); Good Foods Co-op (Lexington, KY); Co-op Food Stores (Hanover, NH); New Leaf Market (Tallahassee, FL); Weavers Way (Philadelphia, PA) and Willy Street Market (Madison, WI), were surveyed by using mail survey and completed in December, 2011. Meanwhile, a similar survey with identical questions about defining local was established targeting general food consumers in Kentucky (total 1,298) by using web-based survey and completed in August, 2013. Although the latter was not a national survey, it corresponds closely in most other observations about local with the NGA 2013 Survey.

Marketers promote food products with local identification by using various definitions, like "produced within region," "produced within state," "100% grown in the area," "100% processed within the area," and "provided by small family farm supplier." Even marketers may promote local as described as "produced within so many miles" and "distinctive local not within the area," or inviting the grower to stores to sell their products is possible. Each strategy using by marketers may receive a potential agreement from shoppers. Shoppers may or may not agree with these definitions, but whether these definitions would exhibit a different reflection on different store formats, i.e., traditional grocers and food co-op stores. Therefore, this study creates a simple examination on exploring how likely respondents from different store formats would agree with whether these "local" definitions are important and very important to them. The eight "local" definitions, shown in Table 1, are examined. These eight "local" definitions are grouped into different concepts: 1) Geographic concept: "produced within region," "produced within state," "produced within so many miles," and "distinctive local not within the area;" 2) Practice concept: "100% grown in the area" and "100% processed within the area;" 3) Supportive concept: "store purchase directly from grower" and "small family farm supplier."

Since the likelihood to indicate each "local" term as a relevant relation with respondents is measured by a seven point Likert scale from 1: "not important at all" to 7: "very important." A

Probit model was estimated to explore the determinants of the likelihood of answering either an important or a very important for the various ways shoppers might define local. Therefore, the probability of propensity to indicate each "local" term as a highly relevant relation with them can be presented as:

(1) $$p = pr(y_i = 1|\boldsymbol{x}_i) = F(x'\beta) = \Phi(x_i'\beta)$$

where y_i =1 indicates positive propensity to agree with the "local" term; $\boldsymbol{x}_i$ denotes independent variables. The probability of the probit model is the cumulative density function of the standard normal distribution. The marginal effects are calculated as $\partial p/\partial x_j = F'(x'\beta)\beta_j$ for the probit models. The empirical specifications in this study for each "local" term are:

(2) $$produced\ within\ region = y^* = y^* = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_{19} X_{19} + \varepsilon$$

(3) $$produced\ within\ state = y^* = \gamma_0 + \gamma_1 X_1 + \gamma_2 X_2 + \cdots + \gamma_{19} X_{19} + \varepsilon$$

(4) $$produced\ within\ so\ many\ miles = y^* = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \cdots + \alpha_{19} X_{19} + \varepsilon$$

(5) $$distinctive\ local\ not\ within\ the\ area = y^* = \delta_0 + \delta_1 X_1 + \delta_2 X_2 + \cdots + \delta_{19} X_{19} + \varepsilon$$

(6) $$100\%\ grown\ in\ the\ area = y^* = \theta_0 + \theta_1 X_1 + \theta_2 X_2 + \cdots + \theta_{19} X_{19} + \varepsilon$$

(7) $$100\%\ processed\ within\ the\ area = y^* = \vartheta_0 + \vartheta_1 X_1 + \vartheta_2 X_2 + \cdots + \vartheta_{19} X_{19} + \varepsilon$$

(8) $$store\ purchase\ directly\ from\ grower = y^* = \rho_0 + \rho_1 X_1 + \rho_2 X_2 + \cdots + \rho_{19} X_{19} + \varepsilon$$

(9) $$small\ family\ farm\ supplier = y^* = \tau_0 + \tau_1 X_1 + \tau_2 X_2 + \cdots + \tau_{19} X_{19} + \varepsilon$$

where the dependent variables (each "local" term) are explained by nineteen independent variables (X_s), while the β_s, γ_s, α_s, δ_s, θ_s, ϑ_s, ρ_s, and, τ_s are parameters to be estimated. Note that each empirical specification will examine the KFCS and Coop data as a comparison to see if there is any heterogeneity among shoppers. The explanatory variables consist of demographic, shopper characteristic, and promoting strategy attribute variables.

The demographic variables, shown in Table 2, are consisted of gender, age, income level, education level, have kids at home, and region. The shopper characteristic variables include how loyal and how long the experience being a shopper at his/her primary food store. The more loyal shopper, the more percentage of total monthly grocery purchases spend at the primary food store. If a shopper spends more than 80% of total monthly grocery purchases at the primary food store, then we define this shopper as a core consumer for his/her primary food store, mid-level (40%-80%) and periphery (less than 40%). The year-experience being his/her primary food store is a way to explain if there is any correlation with the "local" definitions that marketers have been used.

The promoting strategy attribute variables include "farmer-led sampling," "employee-led sampling," "store newsletter," "in-store promotion material," "store ad circular," "farmer label on a product," "state Ag. logos on products," "local label on a product," and "cross-promoted products." Each respondent was asked to indicate their recognition on how their primary stores promote local producers. This question is measured by a five point Likert scale from 1: "rarely" to 7: "extensively." If respondents have recognized their primary stores promote local producers extensively, it gets a value in one as a dummy variable. These attributes represent that shoppers, basically, are receiving information all the time. These attribute information exists in our life, makes shoppers to think, and may have changed shoppers' opinion on defining "local."

Empirical Results

Traditional (KFCS) Shoppers versus Food Coop Shoppers

Following the concept of segmenting consumer groups in the Hartman consumer study, shoppers were segmented into three groups based on the percentage of their monthly grocery purchase at their primary food store. These three groups include: Core (spent above 80% of total monthly grocery purchase at the primary food store), Mid-level (40% ~ 80%), and Periphery (less than 40%). Table 3 shows the frequency and percentage of each group for traditional (*KFCS*) and food *Coop* shoppers. Note that about half of *Coop* shoppers are in the periphery group, but only 20% of *Coop* shoppers are in the Core group. Comparing with *KFCS* shoppers, *Coop* shoppers are less likely spending the majority of total monthly grocery purchase just at one store. *Coop* shoppers are more actively in shopping among grocery stores for what they want or for the particular product attributes they look for. Over half of traditional (*KFCS*) shoppers are in the mid-level group, and one third of *KFCS* shoppers are in the core group. It seems showing that traditional shoppers are more likely to spend over half of total monthly grocery purchase at the primary store.

Although we see a special difference between *KFCS* and *Coop* shoppers how they allocate their monthly grocery purchase, *Coop* shoppers exhibit high recognition of local definition for each concept (i.e., Geographic, Practice, and Supportive concepts) if comparing with *KFCS* shoppers. Except for the distinctive local definition, core *Coop* shoppers do treat these local definitions to be important or very important if comparing to mid-level and periphery groups. Therefore, it is necessary to explore the potential attributes that is affecting shoppers to define "local."

The estimated parameters from the probit models are presented in Tables 4, 5, 6, and 7. Each table reports the estimated parameters and average marginal effects for each "local" definition. Each empirical model is provided the outcomes of Wald χ^2, correctly classified, and goodness of fit, and each empirical specification shows a significant level. Shoppers were asked

to indicate the level of the importance in eight different definitions, and were examined. Each table shows a contrast between traditional (*KFCS*) and food *Coop* shoppers.

Determinants of Geographic Concept in "Local" Definition

The geographic concept of the "local" definition includes "Produced within region," "Produced within state," "Produced within so many miles," and "Distinctive local not within the area." The outcomes of the geographic concept are shown in Tables 4 and 5. When the "Produced within region" becomes a promoting strategy as a local definition, shoppers between *KFCS* and *Coop* are similar for the effects in the "Store promotion" and "Local label." If shoppers have extensively recognized the food store promoting local producers via "Store promotion" and "Local label," shoppers would agree with the "produced within region" as the "local" definition. Especially, *KFCS* and *Coop* shoppers do have about 15% more likely to agree with the "Local label" as the "local" definition. *KFCS* seasoned shoppers are more likely to define "local" as "Produced within region" if comparing to the beginner and experienced shoppers. An interesting outcome is that *KFCS* shoppers are less likely to define local if shoppers have not extensively recognized the food store promoting local producers via "farmer-led sampling." On the other hand, *KFCS* shoppers are more easily to encourage defining local as "Produced within region."

When the "Produced within state" becomes a promoting strategy as a local definition, "Store promotion," "State logo," and "Local label" do positively affect *KFCS* and *Coop* shoppers in defining local. "State logo" effect has the highest positive impact (about 23%) on *KFCS* shoppers in defining local. An interesting outcome is that "Store newsletter" posts a different impact on *KFCS* (negative) and *Coop* (positive) shoppers. A possible explanation is that the store newsletter promoting local producers in food coop store is more appealing to shoppers but not in the traditional grocery store. On the other hand, the traditional grocery store may not promote local producer via store newsletter as much as food coop store.

When the "Produced within so many miles" is utilized as a promoting strategy as a local definition, "Female," "Store newsletter," "State logo," and "Local label" do positively affect *KFCS* and *Coop* shoppers in defining local. Seasoned, core, and mid-level *Coop* shoppers do positively define local as "Produced within so many miles." When the "Distinctive local not necessarily within the area" is used as a promoting strategy as a local definition, "Farmer-led sampling," older, and less educated shoppers have positive impact on consumers to define local as "Distinctive local."

Determinants of Practice Concept in "Local" Definition

The practice concept of the "local" definition includes "100% grown in the area" and "100% processed within the area." The outcomes of the practice concept are shown in Table 6. When the "100% grown in the area" is used as a promoting strategy as a local definition, only the "Local label" does positively affect *KFCS* and *Coop* shoppers in defining local. Besides that, "Store newsletter," "Farmer label," and "State logo" do also positively affect *Coop* shoppers in the local definition. When the "100% processed within the area" is used as a promoting strategy as a local definition, "Female" and the "State logo" does positively affect *KFCS* and *Coop* shoppers in defining local. An interesting outcome of this "local" definition is that *Coop* shoppers tend to be positively affected when "Farmer-led sampling," "Store newsletter," "Store promotion," and "Farmer label" have been posted to them.

Determinants of Supportive Concept in "Local" Definition

The supportive concept of the "local" definition includes "Purchase directly from the grower" and "Small family farm supplier." The outcomes of the supportive concept are shown in Table 7. When the "Purchase directly from the grower" is utilized as a promoting strategy for the local definition, "Female," "Farmer-led sampling," and "Farmer label" have positive impact on *KFCS* and *Coop* shoppers in defining local. This outcome is in line with coop's business statement. Furthermore, *Coop* core and mid-level shoppers tend to agree with purchasing from grower as a way to define local. On the other hand, "Store ads. circular" and "Local label" are only positive impact on *KFCS* shoppers in defining local. However, *KFCS* shoppers with kids at home are less likely to agree with "Purchas directly from the grower." A plausible explanation is that *KFCS* shoppers (Table 3) are more likely to be one-stop shopper or stick on one store purchase characteristics, and family with kids could have less available time to shop, so they may less likely to see the "Purchase directly from the grower" as an important local definition if comparing with family without kids.

When the "Small family farm supplier" is utilized as a promoting strategy for the local definition, "Female," "Store promotion," and "Local label" have positive impact on *KFCS* and *Coop* shoppers in defining local. Especially, farmer characteristics, i.e., "Farmer-led sampling" and "Farmer label" still play a big role for *Coop* shoppers but not in *KFCS* shoppers. While *Coop* core and mid-level shoppers tend to agree with supporting small family farm supplier as a way to define local.

Conclusion

Many evidence shows that consumers, nowadays, are more likely to buy fresh, healthy, and environment-friendly products as a way to support local economic, care about local environmental impacts, and enhance their healthy diets. However, the "local" concept potentially

exhibits a divergent influence among shoppers. Not only because of the distance radius from where they are but also shopper experience, purchasing behavior in what percentage of his/her spending grocery purchase at the primary food store, and his/her primary store type are all relevant to shoppers in defining local.

An interesting result indicates that the *Coop* shoppers don't hold a consistent definition of local if we segment shoppers into three groups, like the core/mid-level/periphery based on the percentage of shopping at store. Overall, *Coop* shoppers tend to be more supportive local definition if comparing to *KFCS* shoppers.

The results indicate that shoppers between *KFCS* and *Coop* define local appearing some divergences and similarities. As it comes to geographic concept, the region and state appear a linkage with "Local label," "State logo," and "Store promotion" for *KFCS* and *Coop* shoppers. When the geographic concept related to distance, the seasoned *Coop* shoppers show a strong opinion in defining local. Furthermore, "Farmer-led sampling" at a store do appear a distinctive local to *KFCS* and *Coop* shoppers in recognizing local.

In practice concept, only *Coop* shoppers are more likely influenced by farmer characteristics and "Store promotion" materials. When it comes to supportive concept, female and the "local" recognition related to farmers are more appealing to *Coop* shoppers, though the *KFCS* shoppers tend to be affected by the store promotions.

The primary contribution of this study is the identification of clear consumer differences across consumers' viewpoints on the definition of local across stores between the traditional shoppers (Kentucky food consumers) and food co-op shoppers with important merchandising and sourcing implications for corresponding grocers.

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Table 1. Definitions and Sample Statistics of Dependent Variables (*N* for *KFCS* = 1,298[a]; *N for Coop* = 1,923[b])

Variables	Description of Variables	Mean	Std. Dev.	Min.	Max.
Produced within the region	Binary variable=1 if respondents perceived "produced within the region" as "local" definition is either an important or a very important factor, 0 otherwise.	0.35[a]	0.47	0	1
		0.60[b]	0.48	0	1
Produced within the state	Binary variable=1 if respondents perceived "produced within the state" as "local" definition is either an important or a very important factor, 0 otherwise.	0.37[a]	0.48	0	1
		0.56[b]	0.49	0	1
Produced within so many miles	Binary variable=1 if respondents perceived "produced within so many miles" as "local" definition is either an important or a very important factor, 0 otherwise.	0.32[a]	0.46	0	1
		0.53[b]	0.49	0	1
Distinctive local	Binary variable=1 if respondents perceived "distinctive 'locale' not necessarily within the area" as "local" definition is either an important or a very important factor, 0 otherwise.	0.10[a]	0.30	0	1
		0.13[b]	0.33	0	1
100% grown in the area	Binary variable=1 if respondents perceived "100% grown in the area" as "local" definition is either an important or a very important factor, 0 otherwise.	0.43[a]	0.49	0	1
		0.55[b]	0.49	0	1
100% processed within the area	Binary variable=1 if respondents perceived "100% processed within the area" as "local" definition is either an important or a very important factor, 0 otherwise.	0.30[a]	0.46	0	1
		0.44[b]	0.49	0	1
Purchase directly from the grower	Binary variable=1 if respondents perceived "store purchase directly from the grower" as "local" definition is either an important or a very important factor, 0 otherwise.	0.37[a]	0.48	0	1
		0.67[b]	0.46	0	1
Small family farm supplier	Binary variable=1 if respondents perceived "small family farm supplier" as "local" definition is either an important or a very important factor, 0 otherwise.	0.33[a]	0.47	0	1
		0.61[b]	0.48	0	1

Note: [a] represents data sources from KFCS shoppers (KFCS).
[b] represents data sources from food co-op shoppers (Coop).

Table 2. Definitions and Sample Statistics of Independent Variables (*N* for *KFCS* = 1,298[a]; *N for Coop* = 1,923[b])

Variables	Description of Variables	Mean	Std. Dev.	Min.	Max.
Female	Binary variable=1 if respondent is female.	0.74 [a]	0.43	0	1
		0.77 [b]	0.41	0	1
Age	Continuous variable; year of age.	48.15 [a]	14.11	16	83
		44.61 [b]	14.01	22	69.5
Income	Continuous variable; total yearly household income before tax ($1,000).	63.39 [a]	41.80	10	225
		67.59 [b]	43.69	10	225
Education	Continuous variable; year of education.	15.03 [a]	2.19	9	18
		16.37 [b]	1.75	12	18
Kids	Binary variable=1 if respondent has kids under 18 at home.	0.36 [a]	0.48	0	1
		0.27 [b]	0.44	0	1
Urban	Binary variable=1 if respondent is from urban (including city and suburb).	0.57 [a]	0.49	0	1
		0.73 [b]	0.44	0	1
Farmer-led sampling	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "farmer-led sampling," 0 otherwise.	0.03 [a]	0.19	0	1
		0.09 [b]	0.29	0	1
Employee-led sampling	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "store employee-led sampling program," 0 otherwise.	0.06 [a]	0.24	0	1
		0.13 [b]	0.34	0	1
Store newsletter	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "store newsletter," 0 otherwise.	0.07 [a]	0.26	0	1
		0.33 [b]	0.47	0	1
In-store promotion material	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "general in-store promotion material," 0 otherwise.	0.13 [a]	0.33	0	1
		0.29 [b]	0.45	0	1
Store ad circular	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "store ad circular/other print ads," 0 otherwise.	0.14 [a]	0.35	0	1
		0.23 [b]	0.42	0	1
Farmer label on a product	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "farmer label on a product," 0 otherwise.	0.12 [a]	0.32	0	1
		0.39 [b]	0.49	0	1
State Ag. logos on products	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "state department of Ag. logo on products," 0 otherwise.	0.10 [a]	0.30	0	1
		0.12 [b]	0.32	0	1
Local label on a product	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "local label on a product," 0 otherwise.	0.17 [a]	0.37	0	1
		0.56 [b]	0.49	0	1
Cross-promoted products	Binary variable=1 if respondent has extensively recognized the food store promoting local producers via "cross-promotions with other local products," 0 otherwise.	0.05 [a]	0.22	0	1
		0.09 [b]	0.29	0	1
Core	Binary variable=1 if respondent has spent more than 80% of total monthly grocery purchases at his/her primary food store, 0 otherwise.	0.32 [a]	0.46	0	1
		0.19 [b]	0.39	0	1
Mid-level	Binary variable=1 if respondent has spent more than 40% and less than 80% of total monthly grocery purchases at his/her primary food store, 0 otherwise.	0.62 [a]	0.48	0	1
		0.30 [b]	0.45	0	1
Periphery	Binary variable=1 if respondent has spent less than 40% of total monthly grocery purchases at his/her primary food store, 0 otherwise.	0.05 [a]	0.22	0	1
		0.49 [b]	0.50	0	1
Beginner shopper	Binary variable=1 if respondent has been a shopper at his/her primary food store less than 5 years, 0 otherwise.	0.24 [a]	0.42	0	1
		0.41 [b]	0.49	0	1
Experienced shopper	Binary variable=1 if respondent has been a shopper at his/her primary food store between 5 and 10 years, 0 otherwise.	0.31 [a]	0.46	0	1
		0.26 [b]	0.43	0	1
Seasoned shopper	Binary variable=1 if respondent has been a shopper at his/her primary food store more than 10 years, 0 otherwise.	0.44 [a]	0.49	0	1
		0.31 [b]	0.46	0	1

Table 3. Defining "Local:" Traditional (*KFCS*) Shoppers versus Food *Coop* Shoppers

Percent of monthly grocery purchase from the primary food store	*Periphery* (less than 40%)	*Mid-level* (40%~80%)	*Core* (above 80%)	Total
KFCS	69 (6%)	809 (62%)	420 (32%)	1298 (100%)[a]
Coop	957 (50%)	582 (30%)	384 (20%)	1923 (100%)[b]
Geographic concept:				
Produced within region	29%	34%	39%	36%[a]
	58%	60%	65%	60%[b]
Produced within state	33%	38%	38%	37%[a]
	56%	55%	61%	56%[b]
Produced within so many miles	35%	31%	35%	32%[a]
	48%	57%	61%	53%[b]
Distinctive local not within the area	14%	9%	13%	10%[a]
	14%	12%	13%	13%[b]
Practice concept:				
100% grown in the area	35%	44%	43%	43%[a]
	52%	57%	60%	55%[b]
100% processed within the area	23%	29%	34%	30%[a]
	44%	43%	48%	45%[b]
Supportive concept:				
Store purchase directly from grower	29%	37%	40%	37%[a]
	65%	70%	72%	68%[b]
Small family farm supplier	28%	34%	34%	33%[a]
	57%	63%	68%	61%[b]

Note: [a] represents data sources from KFCS shoppers (KFCS).
[b] represents data sources from food co-op shoppers (Coop).

Table 4. Geographic Concept of Defining "Local": *KFCS* versus *Coop*

Dependent variables	*Produced within region*				*Produced within state*			
Data sources	*KFCS*		*Coop*		*KFCS*		*Coop*	
	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]
Female	0.047	0.016	0.116	0.043	0.059	0.020	0.090	0.034
	(0.088)		(0.071)		(0.087)		(0.070)	
Age	-0.005**	-0.001	0.002	0.0009	-0.006**	-0.002	-0.001	-0.0005
	(0.002)		(0.002)		(0.002)		(0.002)	
Income	-0.0001	-5.1e-05	0.0009	0.0003	-0.001	-0.0004	-0.0003	-0.0001
	(0.0009)		(0.0007)		(0.0009)		(0.0007)	
Education	0.015	0.005	-0.005	-0.002	-0.020	-0.007	-0.021	-0.008
	(0.017)		(0.017)		(0.017)		(0.017)	
Kids	-0.216***	-0.074	-0.104	-0.038	-0.167**	-0.058	-0.059	-0.022
	(0.082)		(0.071)		(0.081)		(0.070)	
Urban	-0.089	-0.031	0.093	0.034	0.022	0.007	0.140**	0.053
	(0.075)		(0.067)		(0.074)		(0.067)	
Farmer-led sampling	-0.533**	-0.162	0.024	0.009	0.075	0.026	0.056	0.021
	(0.256)		(0.118)		(0.265)		(0.117)	
Employee-led sampling	0.093	0.033	0.038	0.014	-0.104	-0.036	0.008	0.003
	(0.199)		(0.102)		(0.202)		(0.101)	
Store newsletter	0.116	0.041	0.125*	0.046	-0.334*	-0.109	0.127*	0.047
	(0.170)		(0.072)		(0.175)		(0.071)	
In-store promotion material	0.244*	0.089	0.131*	0.046	0.362***	0.133	0.151**	0.056
	(0.134)		(0.076)		(0.134)		(0.075)	
Store ad circular	0.076	0.027	0.035	0.013	0.104	0.037	-0.060	-0.022
	(0.128)		(0.084)		(0.127)		(0.082)	
Farmer label on a product	0.066	0.023	0.101	0.037	0.009	0.003	0.181***	0.068
	(0.146)		(0.069)		(0.148)		(0.067)	
State Ag. logos on products	0.265*	0.096	0.084	0.030	0.617***	0.231	0.229**	0.084
	(0.149)		(0.101)		(0.152)		(0.100)	
Local label on a product	0.395***	0.146	0.393***	0.148	0.401***	0.149	0.284***	0.108
	(0.121)		(0.067)		(0.122)		(0.066)	
Cross-promoted products	0.373	0.137	0.198*	0.071	0.042	0.014	0.140	0.052
	(0.223)		(0.123)		(0.224)		(0.122)	
Core	0.179	0.063	0.079	0.028	-0.003	-0.001	0.018	0.006
	(0.177)		(0.083)		(0.173)		(0.083)	
Mid-level	0.161	0.055	0.027	0.009	0.140	0.049	-0.055	-0.020
	(0.171)		(0.069)		(0.167)		(0.068)	
Beginner shopper	-0.201**	-0.068	-0.040	-0.014	0.092	0.032	0.040	0.015
	(0.098)		(0.079)		(0.098)		(0.077)	
Experienced shopper	-0.185**	-0.064	-0.022	-0.008	-0.110	-0.038	0.163**	0.060
	(0.089)		(0.082)		(0.089)		(0.080)	
Intercept	-0.459		-0.325		0.159		0.059	
	(0.355)		(0.328)		(0.351)		(0.324)	
N. of observations	1298		1923		1298		1923	
Wald χ^2	91.38***		121.33***		106.31***		115.46***	
Correctly classified	68.49%		64.12%		67.57%		61.62%	
Goodness of Fit	1227.99		1853.17		1224.89		1847.64	

Note: * = 0.10, ** = 0.05, and *** = 0.01 (levels of significance); [c] average marginal effect.

Table 5. Geographic Concept of Defining "Local": *KFCS* versus *Coop* – continued.

Dependent variables	*Produced within so many miles*				*Distinctive local*			
Data sources	*KFCS*		*Coop*		*KFCS*		*Coop*	
	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]
Female	0.308***	0.099	0.286***	0.107	0.278**	0.038	-0.075	-0.015
	(0.091)		(0.071)		(0.129)		(0.089)	
Age	0.002	0.0009	-0.007***	-0.002	0.010**	0.001	0.006**	0.001
	(0.002)		(0.002)		(0.004)		(0.003)	
Income	-7.3e-05	-2.4e-05	0.0006	0.0002	-0.0008	-0.0001	-0.00005	-0.00001
	(0.0009)		(0.0007)		(0.001)		(0.0009)	
Education	0.017	0.005	0.008	0.003	-0.046*	-0.007	-0.053**	-0.010
	(0.018)		(0.017)		(0.025)		(0.021)	
Kids	0.065	0.021	-0.103	-0.038	0.232**	0.037	-0.080	-0.015
	(0.082)		(0.070)		(0.111)		(0.091)	
Urban	-0.158**	-0.053	0.020	0.007	-0.201*	-0.031	-0.069	-0.014
	(0.076)		(0.067)		(0.105)		(0.084)	
Farmer-led sampling	0.097	0.033	0.150	0.055	0.902***	0.219	0.376***	0.087
	(0.263)		(0.119)		(0.265)		(0.124)	
Employee-led sampling	-0.240	-0.075	-0.043	-0.016	-0.006	-0.0009	0.547***	0.108
	(0.207)		(0.102)		(0.218)		(0.110)	
Store newsletter	0.292*	0.103	0.160**	0.060	0.410**	0.077	0.071	0.014
	(0.170)		(0.071)		(0.198)		(0.088)	
In-store promotion material	0.044	0.014	0.139*	0.052	-0.005	-0.0009	0.135	0.027
	(0.135)		(0.074)		(0.174)		(0.092)	
Store ad circular	0.198	0.068	0.071	0.026	0.074	0.011	0.030	0.006
	(0.126)		(0.082)		(0.170)		(0.098)	
Farmer label on a product	0.287**	0.101	0.057	0.021	0.153	0.025	-0.026	-0.005
	(0.145)		(0.068)		(0.181)		(0.090)	
State Ag. logos on products	0.253*	0.088	0.176*	0.065	0.037	0.005	0.065	0.013
	(0.153)		(0.099)		(0.187)		(0.116)	
Local label on a product	0.303**	0.107	0.239***	0.091	0.103	0.016	0.057	0.011
	(0.122)		(0.066)		(0.151)		(0.088)	
Cross-promoted products	0.171	0.059	0.283**	0.104	0.568**	0.118	0.161	0.034
	(0.232)		(0.121)		(0.232)		(0.132)	
Core	-0.069	-0.022	0.216***	0.080	-0.172	-0.025	-0.029	-0.005
	(0.173)		(0.082)		(0.226)		(0.106)	
Mid-level	-0.119	-0.040	0.166**	0.062	-0.267	-0.042	-0.047	-0.009
	(0.166)		(0.069)		(0.218)		(0.089)	
Beginner shopper	0.049	0.016	-0.226***	-0.083	0.091	0.014	0.014	0.002
	(0.098)		(0.078)		(0.134)		(0.100)	
Experienced shopper	-0.170*	-0.056	-0.225***	-0.083	0.036	0.005	-0.028	-0.005
	(0.091)		(0.081)		(0.126)		(0.103)	
Intercept	-1.080***		-0.216		-1.254**		-0.634	
	(0.364)		(0.327)		(0.491)		(0.406)	
N. of observations	1298		1923		1298		1923	
Wald χ^2	100.35***		140.46***		128.20***		115.09***	
Correctly classified	69.88%		61.62%		90.52%		87.05%	
Goodness of Fit	1223.83		1849.74		1218.79		1850.90	

Note: * = 0.10, ** = 0.05, and *** = 0.01 (levels of significance); [c] average marginal effect.

Table 6. Practice Concept of Defining "Local": *KFCS* versus *Coop*

Dependent variables	*100% grown in the area*				*100% processed within the area*			
Data sources	*KFCS*		*Coop*		*KFCS*		*Coop*	
	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]
Female	-0.037	-0.014	0.096	0.037	0.163*	0.052	0.258***	0.095
	(0.084)		(0.069)		(0.091)		(0.072)	
Age	0.005*	0.002	-0.0006	-0.0002	0.001	0.0005	0.002	0.0008
	(0.002)		(0.002)		(0.002)		(0.002)	
Income	-0.001**	-0.0007	-0.0008	-0.0003	-0.001	-0.0004	-0.001*	-0.0005
	(0.0009)		(0.0007)		(0.0009)		(0.0007)	
Education	0.040**	0.015	0.003	0.001	0.004	0.001	-0.004	-0.001
	(0.017)		(0.017)		(0.018)		(0.017)	
Kids	0.201***	0.076	0.005	0.001	0.012	0.004	-0.088	-0.032
	(0.078)		(0.069)		(0.083)		(0.070)	
Urban	-0.027	-0.010	-0.073	-0.028	-0.156**	-0.051	-0.082	-0.030
	(0.073)		(0.066)		(0.076)		(0.067)	
Farmer-led sampling	0.308	0.118	0.149	0.056	0.147	0.050	0.310***	0.117
	(0.253)		(0.116)		(0.247)		(0.115)	
Employee-led sampling	-0.143	-0.053	-0.054	-0.021	0.116	0.039	0.093	0.034
	(0.201)		(0.100)		(0.201)		(0.099)	
Store newsletter	0.014	0.005	0.153**	0.058	0.025	0.008	0.147**	0.055
	(0.163)		(0.070)		(0.173)		(0.070)	
In-store promotion material	0.174	0.067	0.082	0.031	0.203	0.069	0.187**	0.070
	(0.132)		(0.074)		(0.133)		(0.074)	
Store ad circular	0.018	0.007	-0.078	-0.029	0.207	0.070	0.070	0.026
	(0.125)		(0.081)		(0.129)		(0.080)	
Farmer label on a product	0.0003	0.0001	0.166**	0.064	-0.031	-0.010	0.175***	0.066
	(0.146)		(0.067)		(0.148)		(0.067)	
State Ag. logos on products	0.209	0.080	0.191*	0.072	0.247*	0.085	0.267***	0.101
	(0.147)		(0.099)		(0.150)		(0.097)	
Local label on a product	0.357***	0.138	0.190***	0.073	0.378***	0.133	0.082	0.030
	(0.120)		(0.066)		(0.122)		(0.067)	
Cross-promoted products	-0.014	-0.005	0.095	0.036	0.094	0.031	0.012	0.004
	(0.224)		(0.118)		(0.219)		(0.116)	
Core	0.248	0.094	0.129	0.049	0.250	0.083	0.061	0.022
	(0.169)		(0.082)		(0.180)		(0.082)	
Mid-level	0.296*	0.110	0.105	0.040	0.209	0.067	-0.025	-0.009
	(0.163)		(0.068)		(0.173)		(0.069)	
Beginner shopper	0.082	0.031	-0.009	-0.003	-0.025	-0.008	0.099	0.037
	(0.096)		(0.077)		(0.099)		(0.078)	
Experienced shopper	0.036	0.013	0.035	0.013	-0.247***	-0.079	-0.053	-0.019
	(0.085)		(0.080)		(0.092)		(0.081)	
Intercept	-1.359***		-0.196		-0.929**		-0.526	
	(0.346)		(0.320)		(0.368)		(0.328)	
N. of observations	1298		1923		1298		1923	
Wald χ^2	56.39***		77.00***		101.59***		140.65***	
Correctly classified	60.02%		60.22%		71.26%		62.66%	
Goodness of Fit	1221.42		1844.34		1202.84		1854.43	

Note: * = 0.10, ** = 0.05, and *** = 0.01 (levels of significance); [c] average marginal effect.

Table 7. Supportive Concept of Defining "Local": *KFCS* versus *Coop*

Dependent variables	*Purchase directly from the grower*				*Small family farm supplier*			
Data sources	*KFCS*		*Coop*		*KFCS*		*Coop*	
	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]	Coefficient	M.E.[c]
Female	0.291***	0.100	0.253***	0.087	0.298***	0.098	0.181**	0.066
	(0.089)		(0.072)		(0.090)		(0.070)	
Age	-0.002	-0.0007	0.0007	0.0002	0.003	0.001	0.0008	0.0003
	(0.002)		(0.002)		(0.002)		(0.002)	
Income	-0.001	-0.0004	0.0004	0.0001	-0.0008	-0.0002	-0.001	-0.0004
	(0.0009)		(0.0007)		(0.0009)		(0.0007)	
Education	0.037**	0.013	-0.017	-0.005	0.012	0.004	-0.024	-0.008
	(0.017)		(0.018)		(0.018)		(0.017)	
Kids	-0.161**	-0.056	-0.025	-0.008	0.083	0.028	0.001	0.0005
	(0.081)		(0.072)		(0.081)		(0.070)	
Urban	-0.102	-0.035	-0.188***	-0.061	-0.054	-0.018	-0.104	-0.037
	(0.075)		(0.072)		(0.075)		(0.068)	
Farmer-led sampling	0.688**	0.254	0.283**	0.089	0.384	0.140	0.326***	0.113
	(0.274)		(0.133)		(0.250)		(0.124)	
Employee-led sampling	-0.246	-0.082	-0.100	-0.033	-0.047	-0.015	-0.068	-0.024
	(0.214)		(0.110)		(0.199)		(0.104)	
Store newsletter	0.113	0.040	0.272***	0.089	-0.012	-0.004	0.078	0.028
	(0.173)		(0.075)		(0.169)		(0.072)	
In-store promotion material	0.160	0.057	0.109	0.036	0.379***	0.138	0.207***	0.074
	(0.133)		(0.078)		(0.132)		(0.076)	
Store ad circular	0.238*	0.086	-0.047	-0.015	0.248*	0.088	0.016	0.005
	(0.126)		(0.086)		(0.126)		(0.083)	
Farmer label on a product	0.250*	0.091	0.346***	0.115	0.041	0.014	0.268***	0.097
	(0.146)		(0.072)		(0.148)		(0.069)	
State Ag. logos on products	-0.173	-0.058	0.128	0.042	0.231	0.082	0.076	0.027
	(0.153)		(0.109)		(0.148)		(0.102)	
Local label on a product	0.322***	0.118	0.099	0.033	0.241*	0.086	0.170**	0.062
	(0.121)		(0.069)		(0.123)		(0.066)	
Cross-promoted products	0.224	0.081	0.335**	0.105	-0.083	-0.028	0.117	0.041
	(0.226)		(0.138)		(0.219)		(0.125)	
Core	0.261	0.092	0.180**	0.058	0.086	0.029	0.222***	0.078
	(0.176)		(0.087)		(0.180)		(0.084)	
Mid-level	0.286*	0.098	0.162**	0.053	0.174	0.058	0.133*	0.047
	(0.169)		(0.072)		(0.173)		(0.069)	
Beginner shopper	0.062	0.021	-0.093	-0.031	0.057	0.019	-0.122	-0.044
	(0.097)		(0.082)		(0.099)		(0.078)	
Experienced shopper	-0.224**	-0.078	-0.092	-0.031	-0.062	-0.021	-0.052	-0.019
	(0.090)		(0.084)		(0.089)		(0.081)	
Intercept	-1.180***		0.289		-1.245		0.320	
	(0.355)		(0.341)		(0.363)		(0.328)	
N. of observations	1298		1923		1298		1923	
Wald χ^2	107.83***		140.00***		91.49***		126.63***	
Correctly classified	67.18%		68.75%		69.41%		63.65%	
Goodness of Fit	1220.80		1891.36		1224.91		1854.74	

Note: * = 0.10, ** = 0.05, and *** = 0.01 (levels of significance); [c] average marginal effect.

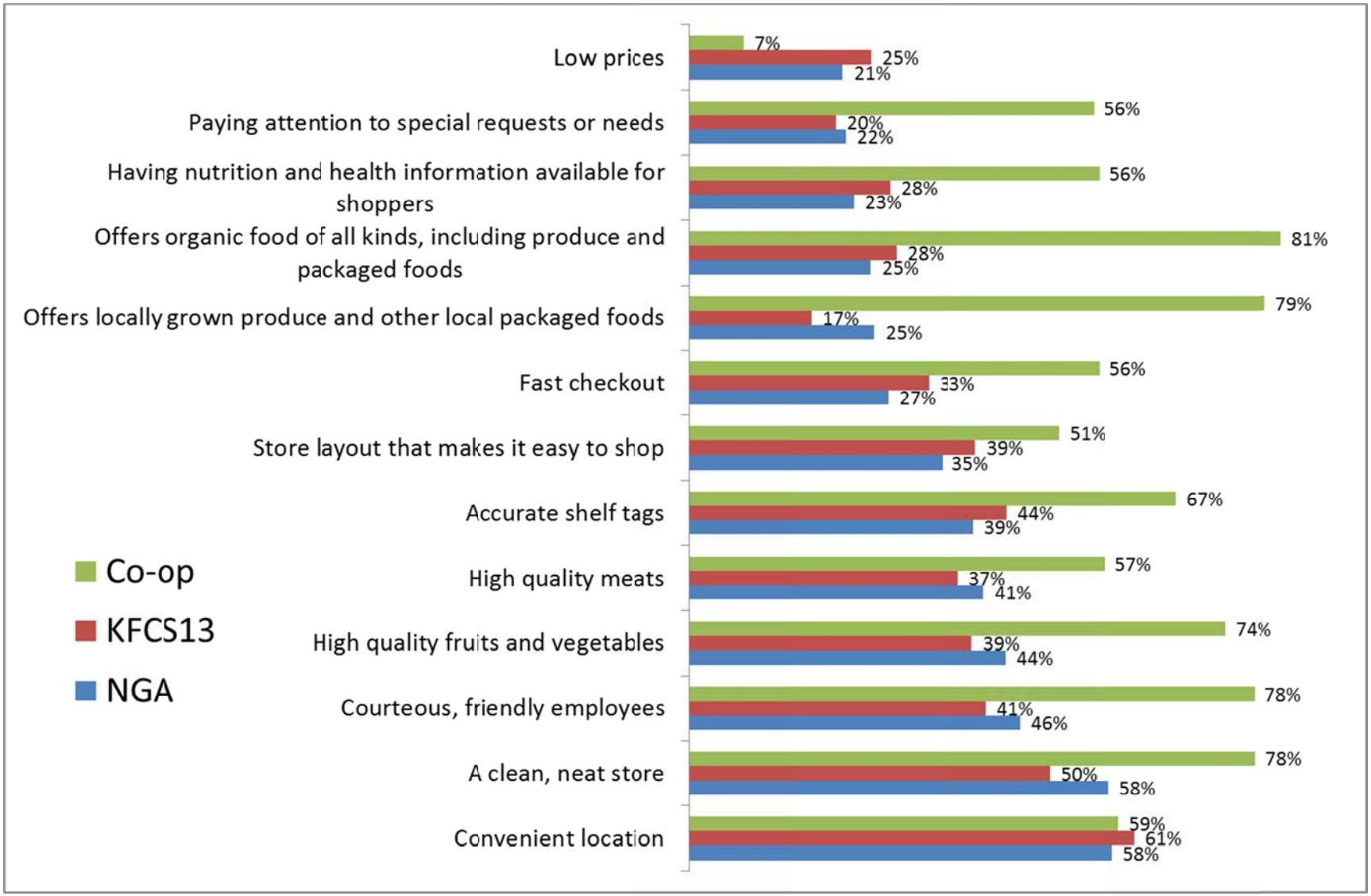

Figure 1. A Cross Comparison among Different Data Source, i.e., Food Co-op, KFCS, and NGA.
Note: An identical question was asked among these three data set: "Please rate your primary store's performance."