Marketing and Logistics Assistance Needs of Food Processors

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The focus of this paper is a study that examines the marketing and logistics assistance needs of Tennessee food processors. Data for the study was drawn from a 1999 survey of Tennessee food processors. The study examines the overall importance of various types of marketing and logistics assistance and the variance of needs across firm size, product type, scope of anticipated market growth, and business experience. The findings from this study are useful for the targeting of assistance services to food processors.

Background and Objectives

A study by the National Research Council (1993) proposed that small- and medium-sized manufacturers often lack the "in-house" resources needed to improve their business performance. Food processors, particularly small or new ones, may not have the "in-house" resources necessary to acquire needed market information and to participate in marketing activities to increase their market scope. Small firms may experience disproportionately large marketing and management constraints as they attempt to expand into new markets (Greening, Barringer, and Macy, 1996). Findings from a multi-industry study of small business problems indicate that marketing problems are preeminent, followed by accounting and management problems (Wichmann, 1983). A study of business failures suggests that assistance dealing with competition and growth strategies is warranted for small business (Gaskill, Van Auken, and Manning, 1993). In fact, Greening, Barringer, and Macy (1996) found that many smaller firms rely on publicly provided sources of marketing and business assistance.

The food processing industry is highly competitive, with more than 10,000 products introduced each year and an estimated three-year-survival rate of 1 percent for new products (Nelson-Stafford, 1991). The high rates of new product introduction and product failure suggest that marketing/logistics assistance may be particularly critical for small or new food processors. Given the high levels of competition and product attrition, and the general reliance on public sources of marketing information among smaller firms, small and new food-processing firms may be an especially critical market for publicly provided marketing services.

A wide variety of marketing and logistic assistance services are offered by local, state, and federal agencies. Examples include services provided by county-level economic/business development groups, the Cooperative Extension Service, the U.S. Department of Agriculture (USDA), and the Department of Commerce's Small Business Administration. Recent trends in the administration of publicly provided business assistance programs show a tendency to provide more customer-oriented services. One result of this trend is that information regarding the assistance needs of "customer firms" is critical to the targeted delivery of assistance services (GAO, 1996). Findings from several studies of business assistance suggest that the assistance services offered may not always match the needs expressed by owners and managers (Peterson, 1984; Torok, Menkhaus, and Schroeder, 1991). Also, findings from previous studies indicate that the marketing problems and assistance needs of firms are not uniform across industries, firm characteristics, or business situations (Naidu and Rao, 1993; O'Rourke, 1985; Torok and Schroeder, 1992).

Morris and Sexton (1996) found that, compared with other businesses, food and kindred products processing showed the highest level of entrepreneurial intensity, as indicated by innovativeness, risk-taking attitudes, and proactiveness of firms or individuals. Despite this high level of entrepreneurial intensity, other studies have found that food processors may face unique business problems compared with other types

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of firms (Torok and Schroeder, 1992). Torok, Menkhaus, and Schroeder (1991) found that marketing assistance needs were a critical component of small food processors' business assistance needs. Some such marketing assistance needs were advertising, the preparation of a marketing plan, and the development of pricing strategies (Torok, Menkhaus, and Schroeder, 1991).

A number of studies have focused on the assistance needs of small or new firms (Naidu and Rao, 1993; O'Rourke, 1985; Peterson, 1984; Torok, Menkhaus, and Schroeder, 1991; Wichmann, 1983). A study by Greening, Barringer, and Macy (1996) proposes that the skills needed to operate a small business in a local market differ from those required to expand geographically; hence, firms may experience new management problems when they move into the expansionary mode. Stearns et al. (1995) compared manufacturing firms with other types of firms, including service and retail firms. They found that, compared with other types of firms, new manufacturers may have fewer suppliers and buyers that share information about needs and demands. While these studies provide useful insights into the problems of small or new firms, no studies have assessed the marketing/logistics assistance needs of food processors nor the impact of firm size, product type, business experience, and market growth factors on assistance needs. In their study of small food and kindred products processors, Torok, Menkhaus, and Schroeder (1991) encourage such analysis in future research.

Study Objectives

The primary goal of the study focused on in this paper was to assess the marketing and logistics assistance needs of Tennessee food processors. Progress on the primary objective also led to the accomplishment of the following related objectives:

(1) to estimate how perceived marketing assistance needs might be influenced by firm size, product type, scope of anticipated market growth, and business experience, and

(2) to develop firm-level profiles, based on firm characteristics of food processors needing particular types of assistance.

The results are intended to help service providers understand the forms of marketing and logistics assistance that are most important to food processors. The results also provide insights useful in the tailoring of marketing and logistics assistance services to meet food processors needs, based on size, product type, business experience, and scope of anticipated market growth.

Data and Methodology

In order to gather information about marketing and logistics assistance needs, a survey instrument was developed in conjunction with the Tennessee Department of Agriculture, Market Development and Promotions Group, and University of Tennessee Extension Service personnel. The survey contained questions regarding perceived marketing and logistics assistance needs. A list of potential marketing and logistics assistance needs was developed, based on results from previous studies and on services that are currently provided or that could potentially be provided through local and state agencies, the Extension Service, and university researchers. The food processors were asked to respond to questions about the level of need for assistance according to a five-point Likert Scale. If the need for an assistance type was rated as negligible, it was assigned a value of "1." Low-need ratings were assigned "2"; moderate-need, "3"; high-need, "4"; and extreme-need, "5." The marketing and logistics assistance services included:

- location and identification of potential buyers;
- promotion of products/advertising;
- research of potential markets (that is, pricing, competition, trends);
- marketing via the Internet;
- trade show/fair representation;
- formulation of a marketing plan;
- help in preparing to call on marketing outlets;
- help with development and design of sales displays;
- location of reliable transportation/ distribution; and
- compliance with product and/or shipping regulations.

The survey also contained questions regarding the anticipated scope of market growth and firm characteristics, including value of sales, product type, and years in business.

The survey was conducted via mail in late March and April 1999, following procedures outlined by Dillman (1978), including a pretest by representative firms. The sample was comprised of 374 food processors identified by American Business Information as Tennessee food and kindred products processors. The sample encompassed a variety of food and kindred processors, including meats, dairy, processed fruit/vegetables, cereals/grain products, bakery, confectionery, fats and oils, beverages, and "other" food products processors. Of the 374 food processors, 54 provided usable responses to all questions contained in this analysis, yielding a response rate of 14.4 percent.[1]

The overall importance of the marketing and logistics assistance types to the food processors were compared through means comparisons tests. The test statistic,

$$t = \left| \overline{ASST}_i - \overline{ASST}_k \right| / s\sqrt{n},$$

was calculated by comparing the mean ratings of two types of assistance ($ASST_i$ and $ASST_k$), where s was the pooled standard deviation and $ASST_i$ included locating buyers, promotion/advertising, market research, Internet marketing, trade shows, market plan, reliable transportation, shipping/product regulations, help with calling on buyers, and sales displays.

The influence of firm characteristics and scope of anticipated market growth on how food processors perceive their needs for marketing and logistics assistance were also examined with ordered logistic (logit) regressions. The general model of preferences regarding marketing assistance needs was hypothesized as:

ASST = f (Sales, Product Type, Years in Business, Years in Business Squared, Regional Growth, National Growth, International Growth).

Variable definitions and summary measures for each of the firm characteristics and scope of anticipated market growth variables are provided in Table 1. Sales were included to examine how small, moderate, and large food processors' assistance needs might differ. It is hypothesized that, in general, smaller firms will have greater needs for marketing and logistics assistance. Food product type (three-digit SIC code) is included to evaluate how the type of products may influence needs for assistance. No assumptions about specific product type influences on assistance needs are made *a priori*; however, it is likely that, with the various market channel structures and the product characteristics represented by the food processing industry, differences in needs across the food product types exist. Years in business were used as a proxy for business experience. It was hypothesized that newer businesses might have greater needs for assistance; however, a squared term was included to examine non-linearities in how business experience might influence needs for assistance. Expectations about growth markets in the next five years were included to assess whether growth in certain types of markets might present special assistance needs for food processors. Anticipated growth beyond local markets will likely create greater needs for several types of marketing and logistics assistance as firms expand into broader geographic markets.

Because of the categorical nature of the responses regarding assistance needs, ordered logistic regressions—rather than simple linear regressions—were used to estimate the influence of firm characteristics and scope of market growth on probability of respondents expressing a given level of need for each type of marketing and logistics assistance. Letting X represent the vector of firm characteristics and market growth variables for the jth food processor, the probability of observing a given level of perceived need for assistance type i by the jth food processor is:

[1]Information regarding several firm characteristics—sales category value, three-digit standard industrial classification (SIC) codes, and location in the state (East, Middle, West)—was available for both respondents and non-respondents. Statistical comparisons at the 95 percent confidence level did not reveal significant differences in the mean values for each of the characteristics between the respondents and non-respondents.

Table 1. Characteristics of Food-Processing Firms Studied.

Firm Characteristic	Measure	Mean
Total Sales in 1998		
Less than $250,000	1 if 1998 firm sales<$250,000; 0 otherwise	.2407
$250,000≤Sales<$1 million	1 if $250,000≤1998 firm sales<$1 million; 0 otherwise	.2037
$1 million≤Sales<$2.5 million	1 if $1 million≤1998 firm sales<$2.5 million; 0 otherwise	.1296
$2.5 million≤Sales<$10 million	1 if $2.5 million≤1998 firm sales<$10 million; 0 otherwise	.1667
$10 million≤Sales<$100 million	1 if $10 million≤1998 firm sales<$100 million; 0 otherwise	.1481
Sales≥$100 million	1 if 1998 firm sales≥$100 million; 0 otherwise	.1111
Firm Type		
Meat and Meat Products	1 if meat or meat products processor; 0 otherwise	.1481
Dairy Products	1 if dairy products processor; 0 otherwise	.1296
Processed Fruit/Vegetable Products	1 if fruit/vegetable products processor; 0 otherwise	.1481
Cereals and Grain Mill Products	1 if cereal or grain mill products processor; 0 otherwise	.0741
Bakery Products	1 if bakery products processor; 0 otherwise	.0741
Beverages	1 if beverage products processor; 0 otherwise	.1481
"Other" Food Products	1 if "other" food products processor; 0 otherwise	.2779
Majority of Growth Expected During Next Five Years		
Local Growth	1 if majority of growth in next five years is expected in local markets; 0 otherwise	.2037
Regional Growth	1 if majority of growth in next five years is expected in regional markets; 0 otherwise	.2963
National Growth	1 if majority of growth in next five years is expected in national markets; 0 otherwise	.4444
International Growth	1 if majority of growth in next five years is expected in international markets; 0 otherwise	.0556
Business Experience		
Years in Business	years	33.7870
Years Squared	years squared	2,374.9900

$$\Pr(ASST_{ij} = 1|X_{ij}) = \Phi(\alpha_1 + \beta X_{ij})$$

$$\Pr(ASST_{ij} = 2|X_{ij}) = \Phi(\alpha_2 + \beta X_{ij}) - \Phi(\alpha_1 + \beta X_{ij})$$

$$P_{ij} = \Pr(ASST_{ij} = 3|X_{ij}) = \Phi(\alpha_3 + \beta X_{ij}) - \Phi(\alpha_2 + \beta X_{ij})$$

$$\Pr(ASST_{ij} = 4|X_{ij}) = \Phi(\alpha_4 + \beta X_{ij}) - \Phi(\alpha_3 + \beta X_{ij})$$

$$\Pr(ASST_{ij} = 5|X_{ij}) = 1 - \Phi(\alpha_4 + \beta X_{ij}),$$

where

$$\Phi = \frac{e^{\beta' Xij}}{1 + e^{\beta' Xij}}$$

is the cumulative logistic distribution.

Results

Firm Characteristics

The summary of firm characteristics, presented in Table 1, shows that more than 24 percent of the food processors had less than $250,000 in sales in 1998. About 20.4 percent of the food processors were moderately small, with between $250,000 and $1 million in sales. About 13 percent had between $1 million and $2.5 million, while just less than 17 percent had between $2.5 million and $10 million in sales. Nearly 15 percent of the food processors were moderately large, having more than $10 million but less than $100 million in sales. About 11 percent fell into the largest sales category.

The responding firms covered a wide variety of food processor types. About 14.8 percent were meat products processors; 13 percent were dairy products processors; 14.8 percent were processed fruit and vegetable products processors; 7.4 percent were cereals and grain mill products processors; 7.4 percent were bakery products processors; and 14.8 percent were beverage processors. The rest, 27.8 percent, processed other food products (confectionery products were grouped with "other" to protect confidentiality due to low numbers, and none of the respondents were fats and oils products processors).

A little more than 20 percent of the responding food processors expected the majority of their growth to occur in local markets during the next five years, while just less than 30 percent expected most growth to occur in regional markets. More than 44 percent of the food processors expected most of their growth to take place in national markets, while a little more than 5 percent believed the majority would occur in international markets. On average, the food processors had been in business about 33.8 years.

Needs for Assistance Overall

The comparisons of mean ratings for need for each type of assistance are presented in Table 2. Letters beside each of the means indicate those for which no significant difference was found at α=.05 when comparing the calculated t with the table value for t. As presented in Table 2, the means comparisons tests suggest that, among the marketing and logistic assistance, assistance in locating buyers was most needed overall, followed by assistance with promotion and advertising. About 63 percent of the food processors indicated at least a moderate need for each of these types of assistance. More moderately needed forms of assistance included market research, assistance with marketing across the Internet, help developing a market plan, assistance with trade shows, and help locating reliable transportation. Least needed forms of marketing and logistic assistance included assistance complying with shipping and product regulations, help in preparing to call on buyers, and help with sales display types and designs.

Table 2. Marketing and Logistics Assistance Needs by Food-Processing Firms.[1]

Type of Assistance	Summary Measures of Ratings of Needs for Assistance (1=Negligible; 2=Low; 3= Moderate; 4=High; 5=Extreme) Mean	Standard Deviation
Locating Buyers	3.0370	1.3731[a]
Promotion/Advertising	2.9630	1.3026[a]
Market Research	2.7778	1.2539[ab]
Internet Marketing	2.5741	1.3954[bc]
Market Plan	2.5370	1.1279[bc]
Trade Shows	2.5185	1.2091[bc]
Reliable Transportation	2.3889	1.2946[bc]
Shipping/Product Regulations	2.3519	1.1518[c]
Help in Preparing to Call on Buyers	2.3333	1.2286[c]
Sales Displays	2.2222	1.1103[c]

[1]Means with the same letters are not significantly different from each other at α=.05.

Differences in Assistance Needs Across Firm Characteristics and Scope of Market Growth

The ordered logit models representing each of the assistance needs are presented in Tables 3 and 4. In each model, the smallest sales category (Sales<$250,000), "Other" Food Products, and anticipated Local Growth were the omitted categories; therefore, dummy variables representing each of these categories were omitted from the models. The models correctly predicted between 68.9 percent and 82.3 percent of the ratings of perceived needs for each of the types of assistance. The model for assistance locating reliable transportation correctly predicted the greatest percentage of observations, while the model for help calling on buyers performed most poorly at predicting responses. The likelihood ratio tests of model significance suggested that the models were significant at α=.10 for reliable transportation, promotion/advertising, market research, help developing a market plan, assistance with trade shows, and help with sales display types and designs. The models for locating buyers, Internet marketing, shipping/product regulations, and help calling on buyers were not significant at α=.10.

While the magnitudes of the coefficients from ordered logits cannot be interpreted directly, the significance and the signs on the coefficients can be interpreted. The signs indicate the effect of the firm characteristics and market scope variables on the probability of extreme need or negligible need. A positive sign indicates a positive influence of the variable on the probability of extreme need and a negative influence on the probability of negligible need. The signs on the coefficients for the sales variables, product type variables, and market growth variables reflect comparisons with the omitted categories for each of these variables (Sales<$250,000, "Other" Food Products, and Local Growth).

Effects of Firm Size

One or more of the sales category variables were significantly different from zero in each of the models, suggesting that needs for each type of assistance were influenced by the size of the food processor. However, the effects of food processor size differed across the various types of marketing/logistics assistance. Compared with the smallest food processors (Sales<$250,000), food processors having $250,000 to $1 million in sales had a higher probability of extreme need (lower probability of negligible need) for assistance with locating buyers, advertising promotion, market research, Internet marketing, developing a market plan, trade shows, locating reliable transportation, help preparing to call on buyers, and developing sales displays. Food processors with $2.5 million to $10 million in sales also had a higher probability of extreme need for assistance with market research, trade shows, and locating reliable transportation. Moderately large food processors ($10 million to $100 million in sales) had a higher probability of extreme need for assistance with market research. Compared with the smallest food processors, the very largest food processors (Sales—$100 million) had a lower probability of extreme need for assistance with locating buyers, promotion/ advertising, developing a market plan, reliable transportation, and help complying with shipping/product regulations.

Effects of Firm Type

For each of the models of assistance needs, with the exceptions of locating buyers or trade shows, firm type influenced perceived needs for

Table 3. Estimated Models for Marketing/Logistic Assistance Needs: Locating Buyers, Promotion/ Advertising, Market Research, Internet Marketing, Market Plan.[a,b]

Explanatory Variable	Locating Buyers	Promotion/ Advertising	Market Research	Internet Marketing	Market Plan
Intercept 1	-2.8936***	-4.4248***	-5.3500***	-4.2733***	-5.9344***
	(.9723)	(1.0975)	(1.1637)	(1.0774)	(1.3258)
Intercept 2	-1.3127	-2.7664***	-3.7106***	-3.5508***	-3.7773***
	(.8966)	(.9787)	(1.0265)	(1.0262)	(1.0620)
Intercept 3	-.2158	-1.0972	-2.1528**	-2.3121**	-1.3015
	(.8793)	(.9179)	(.9380)	(.9596)	(.9249)
Intercept 4	1.0783	.4850	-.1247	-1.1956	.0619
	(.9094)	(.9196)	(.9028)	(.9258)	(.9187)
$250,000≤Sales<$1 million	1.6449*	3.4596***	1.9400**	1.9196**	3.0293***
	(.8964)	(1.0113)	(.9152)	(.9133)	(.9899)
$1 million≤Sales<$2.5 million	.4463	.1208	.3989	.0226	.2194
	(1.1189)	(1.1223)	(1.1327)	(1.1026)	(1.1408)
$2.5 million≤Sales<$10 million	.8677	.5020	2.0062*	-.0617	1.7856
	(1.1022)	(1.1170)	(1.1537)	(1.1078)	(1.1562)
$10 million≤Sales<$100 million	1.2168	1.0910	2.6279**	-.8706	.4727
	(1.2382)	(1.2525)	(1.3046)	(1.2341)	(1.2767)
Sales≥$100 million	-2.9929*	-2.3970*	.5488	-1.5248	-2.6974*
	(1.6798)	(1.5412)	(1.3852)	(1.3818)	(1.6098)
Meat or Meat Products	-.6907	.0384	.7227	.6216	-.2723
	(1.0203)	(1.0395)	(1.0470)	(1.0452)	(1.0690)
Dairy Products	-1.4019	.1865	.0378	.3188	.4876
	(1.1806)	(1.1343)	(1.1016)	(1.0886)	(1.1787)
Processed Fruit/Vegetable Products	.0185	.4651	.9537	.3145	-1.2719
	(.9174)	(.9359)	(.9423)	(.9348)	(.9725)
Cereals or Grain Mill Products	1.5231	2.4809**	3.8252***	1.2349	3.0884**
	(1.2968)	(1.2893)	(1.3562)	(1.2180)	(1.3457)
Bakery Products	-.2119	-.7114	-.6333	-1.3215	-1.6661
	(1.2059)	(1.2327)	(1.2434)	(1.2785)	(1.2993)
Beverages	1.6472*	2.8498***	1.8166**	.6064	1.1764
	(.9125)	(1.0177)	(.9212)	(.8917)	(.9149)
Regional Growth	1.1062	1.5342*	1.7882**	1.1640	2.2163**
	(.8337)	(.8594)	(.8642)	(.8550)	(.9021)
National Growth	.4596	.4527	.0205	1.7263**	.7263
	(.8206)	(.8522)	(.8266)	(.8520)	(.8489)
International Growth	-1.5176	1.3644	-2.5109	1.6462	.6816
	(1.4250)	(1.4606)	(1.5499)	(1.4296)	(1.4573)
Years in Business	-.0186	-.0175	-.00078	.0296	-.0163
	(.0282)	(.0282)	(.0283)	(.0280)	(.0290)
Years Squared	.00022	.00018	-.0000001	-.00014	.00014
	(.00018)	(.00018)	(.00018)	(.00017)	(.00019)
% Correct	73.1	78.8	75.5	69.8	79.3
LLR	21.5738	33.1383***	27.8834**	14.5200	28.6526**

[a]Values in parentheses are the standard errors of the coefficients.

[b] *=significance at α=.10; **=significance at α=.05; ***=significance at α=.01.

Table 4. Estimated Models for Marketing Logistic Assistance Needs: Trade Shows, Reliable Transportation, Shipping/Product Regulations, Help Calling on Buyers, and Sales Displays.[a,b]

Explanatory Variable	Trade Shows	Reliable Transportation	Shipping/ Product Regulations	Help Calling on Buyers	Sales Displays
Intercept 1	-5.9101***	-6.6677***	-4.6266***	-3.9890***	-6.2782***
	(1.2378)	(1.3945)	(1.1474)	(1.0721)	(1.4996)
Intercept 2	-4.2861***	-4.4890***	-3.5679***	-2.9115***	-3.2665***
	(1.0886)	(1.1682)	(1.0381)	(.9807)	(1.0436)
Intercept 3	-2.8204***	-3.2610***	-1.3594	-1.5289*	-2.2787**
	(.9871)	(1.1057)	(.9262)	(.9143)	(.9875)
Intercept 4	-.7886	-1.2269	-.0682	-.1433	.0907
	(.9237)	(1.0286)	(.9057)	(.8906)	(.9326)
$250,000≤Sales<$1 million	2.7339***	3.1446***	.0909	1.4640*	2.9243***
	(.9518)	(1.0424)	(.8895)	(.8998)	(.9940)
$1 million≤Sales<$2.5 million	1.1541	1.2725	-.3522	.2570	.1548
	(1.1323)	(1.1712)	(1.1357)	(1.1117)	(1.1736)
$2.5 million≤Sales<$10 million	1.9553*	2.0077*	1.0201	.6029	1.6234
	(1.1535)	(1.1788)	(1.1258)	(1.1278)	(1.1712)
$10 million≤Sales<$100 million	1.0686	1.1318	-.6299	.5491	.6208
	(1.2793)	(1.3081)	(1.2629)	(1.2622)	(1.3018)
Sales≥$100 million	-.6468	-4.2240**	-3.6318**	-2.0114	-2.4971
	(1.4156)	(1.9912)	(1.7126)	(1.5746)	(1.7242)
Meat or Meat Products	.7332	-.1038	.3521	-.0412	.1450
	(1.0537)	(1.1218)	(1.0486)	(1.0381)	(1.0794)
Dairy Products	-.2794	4.3436***	2.1429*	.5951	.9826
	(1.1169)	(1.4022)	(1.2234)	(1.1597)	(1.2271)
Processed Fruit/Vegetable Products	1.4130	.6740	-.1294	.6760	-.4585
	(.9513)	(.9974)	(.9461)	(.9332)	(.9701)
Cereals or Grain Mill Products	1.5989	2.0571	1.8641	2.0128	1.0671
	(1.2554)	(1.3926)	(1.3337)	(1.2709)	(1.3643)
Bakery Products	-.8961	-.4461	.3249	-.8122	.5208
	(1.2629)	(1.2887)	(1.2496)	(1.2482)	(1.2728)
Beverages	1.4072	4.5656***	1.8241**	2.0702**	1.6038*
	(.9087)	(1.1145)	(.9260)	(.9161)	(.9460)
Regional Growth	1.8084**	.0298	.9326	.5308	2.2124**
	(.8733)	(.8915)	(.8502)	(.8272)	(.9099)
National Growth	1.5388*	.0334	1.5162*	.0088	.3351
	(.8563)	(.8804)	(.8644)	(.8240)	(.8728)
International Growth	-1.2874	-1.1241	.0727	-2.2475	-.0756
	(1.5220)	(1.4882)	(1.4663)	(1.5681)	(1.5073)
Years in Business	-.0144	-.0131	-.0191	.00032	-.0449
	(.0283)	(.0292)	(.0283)	(.0283)	(.0297)
Years Squared	.00009	.00032	.00020	.000065	.00032*
	(.00018)	(.0002)	(.00018)	(.00018)	(.00019)
% Correct	75.6	82.3	74.2	68.9	73.3
LLR	25.1547*	40.7175***	18.6784	15.9270	27.7307**

[a]Values in parentheses are the standard errors of the coefficients.

[b]*=significance at α=.10; **=significance at α=.05; ***=significance at α=.01.

assistance. Compared with "other" food products processors, dairy products processors perceived greater needs for assistance with locating reliable transportation and complying with shipping/product regulations. Compared with "other" food products processors, cereals and grain mill products processors perceived greater needs for assistance with promotion/advertising, market research, and developing a market plan. Beverages processors appeared to have greater needs with several types of assistance as compared with "other" food products processors. These assistance types include help locating buyers; promotion/advertising; market research; locating reliable transportation; complying with shipping/product regulations; help calling on buyers; and sales displays. The coefficients on meat products, processed fruit/vegetable products, and bakery products were not significant, suggesting no differences in perceived needs between any of these firm types and processors of "other" food products.

Effects of Scope of Anticipated Market Growth

Scope of anticipated market growth (local, regional, national, or international) influenced perceived needs for promotion/advertising, market research, Internet marketing, developing a market plan, trade shows, shipping/product regulations, and sales displays. Scope of anticipated market growth did not significantly influence perceived needs for locating buyers, locating reliable transportation, or help preparing to call on buyers. Compared with food processors who anticipated the majority of growth to occur in local markets, food processors who anticipated growth in regional markets expressed greater needs for assistance with promotion/advertising, market research, developing a market plan, trade shows, and sales displays. Food processors who primarily anticipate national growth expressed a greater need for assistance with Internet marketing, trade shows, and shipping/product regulations. International growth did not appear to influence perceived needs as compared with food processors who anticipated mostly local growth.

Effects of Business Experience

Business experience of the food processor—as measured by years in business squared—positively influenced firms' perceived needs for help with sales displays. Other forms of marketing/logistics assistance were not significantly influenced by years in business or years in business squared.

Summary Profiles

The information in Table 5 provides an overview of assistance needs as predicted by firm characteristics and scope of anticipated market growth. The information could be used in building profiles of firms with a high potential for a particular type of assistance need. For example, moderately small food processors moving into national markets may need assistance with Internet marketing. Also, moderately small beverage processors anticipating regional growth might be likely candidates for assistance with promotion/advertising or sales displays. Another example profile is that moderately small and medium-sized dairy products processors expanding into national markets may need assistance complying with product and shipping regulations.

Table 5. Assistance Needs as Predicted by Firm Characteristics and Scope of Market Growth.

Moderately Small Food Processors ($250,000 – $1 million in Sales)
Locating Buyers, Promotion/Advertising, Market Research, Internet Marketing, Market Plan, Trade Shows, Reliable Transportation, Help Calling on Buyers, Sales Displays
Medium-Sized Food Processors ($2.5–10 million in Sales)
Market Research, Trade Shows, Reliable Transportation
Moderately Large Food Processors ($10–100 million in Sales)
Market Research
Dairy Products
Reliable Transportation, Shipping/Product Regulations
Cereals or Grain Mill Products
Promotion/Advertising, Market Research, Market Plan
Beverages
Locating Buyers, Promotion/Advertising, Market Research, Reliable Transportation, Shipping/Product Regulations, Help Calling on Buyers, Sales Displays
Food Processors Anticipating Regional Growth
Promotion/Advertising, Market Research, Market Plan, Trade Shows, Sales Displays
Food Processors Anticipating National Growth
Internet Marketing, Trade Shows, Shipping/Product Regulations
Mature Food Processors
Sales Display Design

Conclusions

The results from the models of assistance needs indicate that the perceived levels of needs for assistance are often dependent on the size and type of the food processor. In several cases, the needs for assistance are also dependent on scope of anticipated market growth. Interestingly, for many types of assistance, the very smallest and very largest food processors expressed the least need. This result is somewhat puzzling. Perhaps the largest firms have in-house resources, while the smallest may primarily be focusing on day-to-day processing operations or serving a limited market. These results pose potential questions for analysis in future research.

Regional growth appears to be influential on the needs for promotion/advertising assistance, market research, assistance with trade shows, and help with sales displays as compared with firms that primarily anticipate local market growth. Also, moderately small firms appeared to have greater needs for these types of assistance. A possible implication of these results is that moderately small food processors who are trying to regionalize their markets may need help with researching regional markets and promoting their products in the wider geographic markets. Another interesting finding is that moderately small firms that are breaking into national markets appear to desire assistance with marketing across the Internet. This would suggest that these firms see the Internet as a market mechanism that will assist in national expansion. Market research was a type of assistance expressed in greater need by moderately small to moderately large firms as compared with the smallest and largest firms. This could indicate that the need for market research is pervasive across many different sizes of food processors. Among the types of food processors, beverage processors appeared to have needs for the widest range of assistance. This may reflect responses by small wineries, a developing industry within the state. Other industry differences were for dairy products, where shipping and product regulations and locating reliable transportation were sources of need for assistance. Also, the cereals and grain mill industry expressed greater needs for promotion/advertising, market research, and help with market plans.

The results from this study suggest that, overall, help with locating buyers, promotion /advertising, and market research are the forms of marketing/logistics assistance most needed by Tennessee food processors. However, the results that show assistance needs varying across food processor size and type, scope of anticipated market growth, and business experience suggest that the targeting of several types of assistance on the basis of these firm characteristics and market situation might be appropriate. The results from this study offer marketing/logistic assistance providers with information that could be used to identify the types of food processors that are the best candidates for marketing and logistics assistance programs.

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