Crawfish Processor Preferences for the Adoption of a Potential Crawfish Peeling Machine: A Conjoint Analysis

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***Abstract*:** Thirty crawfish processors' preferences for hypothetical crawfish peeling machines are evaluated using conjoint analysis. Deveining is the most important attribute, with fat retention, individual handling of crawfish, and backstrap retention being roughly equal in importance. Whether the machine is owned or leased is the least important attribute.

Keywords: Crawfish, Conjoint Analysis, Two-Limit Tobit, Cluster Analysis, Peeling Machine.

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Crawfish processing is a major segment of the Louisiana seafood industry. The total value of Louisiana's crawfish industry in 2005 was just over $45.2 million annually (LSU Ag Center, 2006). Since the mid-1990s, there has been escalated discussion among Louisiana crawfish processors regarding the need for a crawfish peeling machine. It is commonly believed that with the implementation of a crawfish peeling machine, the crawfish industry could not only potentially improve economic conditions for the industry, but be a larger contributor to the Louisiana economy. This belief is based on the assumption that peeling machine adoption would lead to a reduction in costs of production for U.S. peeled tailmeat. Little, however, is known about the market for a crawfish peeling machine. Though a number of potential investors have expressed interest in developing a machine, there has been hesitance to invest resources prior to more market information being made available.

A number of patents for peeling machines have been received, with prototypes being developed. None, however, have been widely adopted by crawfish processors because either the machines did not meet their expectations or were not widely marketed. Recognizing the need for market analysis of crawfish peeling machines, the objectives for the present study were: (1) to determine the relative importance of the attributes most valued by processors in a crawfish peeling machine and (2) to identify distinct clusters of processors in terms of preference for a peeling machine. The analysis in this paper is part of a larger study that examined current costs of peeling crawfish, processors' preferences for peeling machines, and processors' willingness to purchase peeling machines.

Background

One of the biggest challenges the Louisiana crawfish industry has faced in recent years is foreign competition. For over a decade, China has exported peeled crawfish tailmeat into the United States, where it has been marketed at prices lower than the domestically produced product (Gillespie and Capdeboscq, 1996). In 1996, the retail price of the imported product generally ranged from $3.00 - $6.00 per pound for the China-produced product, compared with $6.00 - $9.00 per pound for the domestically-produced product. As a result of decreased demand for the domestic product, from 1993 and 1996, Louisiana crawfish producers saw the value of their product decline from $13.5 million to $4.9 million (Gillespie and Capdeboscq, 1996).

Since 1996, the arena has changed, but many of the same issues remain. A modified version of the Gillespie and Capdeboscq (1996) survey was administered in the present study. Gillespie and Capdeboscq (1996) had identified 80 processors. Fewer than half of the 80 processors peeling crawfish in 1996 remained in business in 2005. The attenuation in firm numbers is generally attributed to foreign competition. Currently, domestic product retail prices range from $7.00 to $15.00 per pound while the imported product is being sold from $5.00 to $8.00 per pound (Gillespie and Lewis, 2005). Domestically produced crawfish tailmeat is sold primarily to consumers and select restaurants that prefer it. The authors believe the price gap between the two products is unlikely to be reduced substantially unless there is a reduction in the domestic cost of production in farming or processing. Though the domestic and Chinese products are close competitors, it is recognized that the U.S. product can be sold as fresh, rather than frozen, and that unlike the Chinese product, it contains the hepatopancreas, a yellow substance commonly referred to as "fat" that is considered to provide additional flavor.

As much as 70% to 80% of the United States peeled crawfish market has been supplied as imported product in the last decade (ITC, 2003). This eventually led to an investigation by the ITC at the request of the U.S. House of Representatives. On August 29, 1997, the ITC determined that the U.S. crawfish industry had been "materially injured" by the imported tailmeat and ruled that China was dumping crawfish into the United States. The result was the imposition of tariffs on imported tailmeat from China. In its 2002 five-year review, the ITC determined that a revocation of the order would be detrimental to the industry because it would "materially injure" the domestic market. Thus, the duties were reinstated (ITC, 2003). The duty effectively reduces the margin of prices between the two countries, though the imported peeled product generally continues to be sold at prices lower than the domestic product.

One way for domestically-produced tailmeat to potentially become more competitive would be via development and adoption of a crawfish peeling machine that would reduce peeling cost and potentially result in more product. The lower cost of production would likely allow early adopters to increase profit in the short run while lowering the price of crawfish tailmeat, making domestic tailmeat more competitive with the already lower-priced imported tailmeat.

Data and Methods

Data Collection

A survey was developed to collect data for this research. The initial sections of the survey followed the survey conducted by Gillespie and Capdeboscq (1996), with additional questions added. The researchers decided personal interviews, as opposed to mail surveys (as conducted by Gillespie and Capdeboscq, 1996) would be most suitable, considering the intricate nature of the questions being asked, such as conjoint and ex-ante technology adoption questions. It was important to receive responses from as many processors as possible, a further argument for personal interviews.

Letters were sent to 53 crawfish processing firms requesting interviews. These firms were on a publicly available listing of Louisiana seafood processors on the Louisiana Department of Agriculture and Forestry website. Other firms had been initially deleted from the list for this study in cases where it was known that the firm did not peel crawfish. Of the 53 firms sent letters, 10 were found to be no longer in business, five letters were returned as non-deliverable, three firms did not agree to participate in the survey, one was not in the peeling business, and seven were either never reached after frequent attempts or a time could not be agreed upon to administer the survey. Though three interviewed firms were no longer peeling crawfish (but were dealing with live crawfish), they were included in the study because they expressed interest in a crawfish peeling machine if it were to be developed. This resulted in the 30 surveyed processors.

Upon arrival to each firm, the researchers reassured the processors any data gathered during the interview would remain confidential, as had been approved by the Internal Review Board of the LSU AgCenter, Human Subjects Committee. In most cases, the interview was conducted in the main office of the processing plant.

The survey included questions regarding volume of crawfish processed, equipment owned, peeling labor productivity and costs, attributes considered in a hypothetical machine, and willingness to adopt specific hypothetical machines. The interviews generally lasted about an hour. Conjoint questions are shown in Appendix 1.

Conjoint Analysis

Conjoint Analysis (CA) was introduced in the 1970's to quantify consumer tradeoffs (Cattin and Wittink 1982). Conjoint Analysis uses a survey-based approach to determine the importance of attributes in determining preferences for products or services. The conceptual model for conjoint analysis follows the theory that consumers generally choose products according to the attributes linked to the product.

Using conjoint analysis, the preferences of Louisiana crawfish processors in adopting crawfish peeling machines are analyzed. Utility is the numerical score representing the satisfaction a consumer gains from acquiring a product, and serves as the dependent variable in a conjoint model. Conceptually, a crawfish processor's utility for a crawfish processing machine could be defined as:

$$U_Y = f(\text{DEVEIN, FAT, BACKSTRAP, HANDLING, OWN})$$

where U_Y is the processor's utility associated with machine Y. U_Y is dependent on levels of combinations of attributes, such as whether the machine deveins (DEVEIN), retains the fat or hepatopancreas (FAT), retains the backstrap (BACKSTRAP), whether individual handling of each crawfish is required (HANDLING), and whether it is owned or leased (OWN). Thus, utility is assumed to be based on the value placed on each of the levels of the attributes.

The attributes were initially selected from a discussion with a local crawfish processor who informed the researchers of the important attributes his colleagues deemed to be of importance in a peeling machine. This meeting confirmed the researchers' perceptions of the important attributes, based upon previous research they had conducted with crawfish processors. A meeting was then arranged between the researchers and a seafood processing equipment developer, manufacturer, and distributor. This firm was considered a potential developer of a crawfish peeling machine based upon previous discussion. This interview confirmed the attributes stated by the processor and perceived by the researchers were of the greatest importance. Unlike many other conjoint analyses, price was not included in the analysis. Price was excluded because, first, it would be highly dependent on the size of the machine and the attributes of the machine. More important, however, there was no previous knowledge of potential machine costs, providing little basis to predict a price range.

For the conjoint analysis, respondents were initially asked the following questions: "Would you prefer a machine that deveins or does not devein the crawfish?;" "Would you prefer a machine that retains the fat or does not retain the fat of the crawfish?;" "Would you prefer a machine that retains the backstrap or does not retain the backstrap of the crawfish?;" "Would you prefer a machine in which an individual must handle each crawfish or one in which an individual need not handle each crawfish?;" "If you were to adopt a crawfish peeling machine, would you prefer to own or lease it on an annual basis assuming necessary maintenance services were included in the price?" "Yes/No" responses to these five questions provided the basis for determining a "most desired machine" and a "least desired machine" for each respondent. These two machines were then described to the respondent with the information gathered, and assigned ratings of 10 and 0, respectively. These ratings would anchor the most and least preferred machines at the extreme values such that all others would be rated accordingly.

This study assessed preferences over five attributes at two levels each, resulting in 32 profiles (2 × 2 × 2 × 2 × 2 = 32) in the full factorial design. This would be an excessive amount of information for a respondent to functionally analyze; therefore other designs were examined to reduce the number of profiles for evaluation. A fractional factorial design was considered to minimize ambiguity and maximize selected choice validity. This design is a sample of profiles from the full factorial design without losing valuable information. Fractional factorial designs provide an orthogonal collection of profiles for analysis by each respondent (Green and Srinivasan, 1990). With this approach, only the main effects are estimated, reducing the number of profiles to an acceptable level. The number of profiles included in the fractional factorial design was eight. Two additional holdout profiles were included for use in determining how well the resulting conjoint model predicted rating, a test of internal validity.

Two-limit tobit (TLT) models were used to determine the importance of attributes on preference for a crawfish peeling machine. The TLT model is preferred for this study, as opposed to the Ordered Probit (OP) model, because when degrees of freedom are limited, such as the case with individual-level conjoint models, the OP cannot be estimated. Harrison, Gillespie, and Fields (2005) showed that, using three separate datasets, there were no significant differences in part-worth utilities estimated by OP and TLT. Since individual-level models would be run for this study, the TLT is used.

The TLT model can be written as follows (Verbeeck, p. 198):

(1) $$y_i^* = x_i' ß + e_i, \quad i = 1,2,\ldots,N,$$

$$y_i = L_{1i} \text{ if } y_i = L_{1i}$$

$$= y_i^* \text{ if } L_{1i} < y_i^* < L_{2i}$$

$$= L_{2i} \text{ if } y_i^* = L_{2i}$$

where e_i is assumed to be $(0,s^2)$ and independent of x_i. This means the error terms e_i are independent drawings from a normal distribution with mean 0 and variance s^2. The latent variable is y_i^* and the dependent variable (machine rating) is y_i. In this model, L_{1i} and L_{2i} represent the lower and upper limits, respectively. The marginal effects for the two-limit tobit can be written as (Greene, p. 766):

$$(2) \qquad \frac{\partial E[y_i \mid x_i]}{\partial x_i} = ß[F(L_{2i} – x_i’ß/s) – F(L_{1i} - x_i’ß/s)]$$

The change in x_i affects the conditional mean of y_i^* in the distribution, also influencing which part of the distribution the observation will be a part of. Each variable was considered to contribute to the importance of the prospective peeling machine; therefore part-worths were tabulated for the entire industry and at the firm level. For each firm, the two-limit tobit models were run using all eight profiles in the fractional factorial design, plus the two profiles that were determined to be rated highest, rated 10, and lowest, rated 0, for that individual. The same dataset was used for the aggregate run.

Cluster Analysis

Among the most valuable information a potential developer of a crawfish peeling machine can have is what types of processors prefer which types of machines. Cluster analysis is a multivariate statistical technique that assesses the similarities between units in order to create homogeneous groups of cases or variables (Hair et al. 1998, p. 473). The objective is to maximize the homogeneity within the clusters and the heterogeneity between the clusters. In this study, the crawfish processors are divided into two clusters (groups), each with similar preference structures.

The most common types of algorithmic procedures for clustering using Ward's method are hierarchical and nonhierarchical procedures. Instead of a treelike construction process expressed in the hierarchical procedure, the nonhierarchical procedure produces only a single cluster solution based on the number of clusters specified (Hair et al. 1998, p. 496). Due to limited observations, a nonhierarchical procedure was used in this study.

To determine the preference structure of individuals within the cluster, two-limit tobit models were generated for each cluster. Models for each cluster were evaluated using the same methodology as the aggregate model.

To determine differences in processor characteristics among the clusters, clusters were evaluated based upon the characteristics of each crawfish processor using a logit model (Verbeeck). Firm characteristics that were included as independent variables in the model were: thousands of pounds of tailmeat peeled in the previous year, production of value-added products, whether other seafood species were also processed, percentage of purchased crawfish that were peeled the previous year, whether enough labor was available during the peeling season, cooker capacity, presence of a continuous cooker, whether alteration of facilities would be required to adopt a large machine, wage paid to peelers, years the processor expected to remain in crawfish peeling, and whether the processor anticipated a close family member to take over the business upon retirement.

Descriptive Statistics and Empirical Results

Conjoint Analysis

Due to missing data, two of the 30 total observations were omitted from the conjoint analysis; thus the analysis consisted of 28 firms in the Louisiana crawfish industry. The aggregate (industry) statistics are the industry averages of the five variables included in the study. The coefficient values show whether there was an increase or decrease in a hypothetical crawfish peeling machine's rating if a particular attribute was present, relative to not being present. Table 1 provides the marginal effects. For the industry, a machine that deveins crawfish increases the rating of that machine by 3.89 on the 0-10 scale. Retaining the fat of the crawfish increases the machine's rating by 2.27. With regard to an individual not being required to handle each crawfish, retaining the backstrap, and owning the machine, these increased the ratings of the machine by 2.13, 2.20, and 0.02, respectively. Owning the machine was the only variable that was non-significant. For the hold-out profiles, Pearson correlation coefficients were 0.40, p=0.0364, for hold-out profile 1, and 0.71, p=0.0001, for hold-out profile 2.

Percentage Importance for Each of the Crawfish Peeling Machine Attributes

Once the marginal effects are estimated, the relative importance of each attribute for each of the processors can be determined. The formula for calculating the part-worths for individual processors is:

$$RI_i = \frac{|ß_i|}{\sum_{k=1}^{5} |ß_k|} \qquad (3)$$

RI_i is defined as the relative importance of each attribute *i*. The ß in the numerator signifies the ß estimate in the conjoint analysis and the S in the denominator refers to the summation of the ßs of the 5 attributes. Once Equation (3) is estimated for each processor, the mean value for each attribute across all 28 processors is determined. An illustrated estimation of the importance of the aggregate part-worths is shown in Figure 1.

For the aggregate model, whether the crawfish peeling machine deveins was viewed as being most important, constituting 30.6% of the total importance. The second most important attribute to the producers was the retention of fat, at 20.0%. No handling of individual crawfish and retaining the backstrap were the third and fourth most important variables, at 19.5% and 18.4%, respectively. Whether the machine was owned or leased was the least important attribute, receiving 11.5% of the processors' measure of importance when adopting a crawfish peeling machine. Processors were generally in agreement over the signs of all variables except OWN; some preferred to own, while others preferred to lease. This explains the relatively small marginal effect for OWN, but the percentage importance value.

Conjoint analysis allows for a ranking of all possible profiles from top to bottom, as shown in Table 2. The highest ranked machine would devein and retain fat, no handling would be required, it would retain the backstrap, and would be owned. This is closely followed by a machine that conducts all of the same activities, but is leased. Likewise, the least favored machine would be one that conducted none of the tasks and was leased.

Cluster Analysis

Cluster analysis resulted in Cluster 1 with 15 firms and Cluster 2 with 13 firms. Aggregate two-limit tobit models were run for each (Tables 3 and 4). For Cluster 1, deveining would increase the rating of a machine by 4.39. A machine that retained the fat of the crawfish would increase its rating by 1.24. With regards to not handling crawfish, retaining the backstrap, and owning the machine, these would increase machine ratings by 2.45, 2.09, and 0.70, respectively. Owning the machine was the only variable not statistically significant at the 0.05 level.

For Cluster 2, deveining would increase the rating by 3.27. Retaining the fat would increase a machine's rating by 3.31. With regard to not handling crawfish and retaining the backstrap, these would increase machine ratings by 1.73 and 2.26, respectively. Owning decreased the rating of a crawfish peeling machine in Cluster 2 by 0.62. All but one of the variables, OWN, are significant at the 0.05 alpha levels or better.

Figures 2 and 3 illustrate the relative importance of the five attributes of a crawfish peeling machine for the two clusters. Cluster 1 valued deveining highest, followed by individual handling of the crawfish and retention of the backstrap. This cluster regarded the inclusion of fat as less important, and ownership as least important. Cluster 2 valued fat retention highest, in contrast with the devein attribute being regarded as most important in Cluster 1. These individuals considered deveining to be only slightly less important. Backstrap retention was the third most important attribute, as in Cluster 1. Handling and whether the machine was owned were of roughly equal importance in this cluster. The biggest difference between the clusters appeared to be the importance placed on retention of the fat.

A logit model was utilized to further examine differences between the two clusters. When all of the independent variables were included in the model, none showed significance. However, when the independent variables were run individually, one showed significance. The model including only percentage of purchased crawfish peeled was positively significant when it was run by itself, suggesting processors peeling a higher percentage of crawfish tailmeat tended to be grouped into cluster 2. The overall lack of significance may be due to the relative homogeneity of preferences among processors: the clusters differed in direction of preference for only one attribute, OWN, which was not significant in any of the runs.

Conclusions

This research provides information on the attributes of a potential crawfish peeling machine that would be most important to crawfish processors. Interest has been expressed by crawfish processors in a machine for over three decades. Prospective machine developers have indicated their concerns for the market of a crawfish peeling machine. In order for them to develop an adequate machine, they needed to know the criteria deemed most important to crawfish processors to assure suitable adoption rates.

Using conjoint analysis following interviews with crawfish processors, it was concluded that deveining was the most important attribute, as consumers are perceived to prefer deveined crawfish tailmeat. Furthermore, the cost of manually deveining the crawfish after it has been processed by the peeling machine would be significant since it would require individual handling.

Retaining the fat and backstrap, and not handling individual crawfish were considered to be of roughly equal importance. The fat is regarded as important because it is preferred by consumers and contributes weight to the product. Similar to the fat, the backstrap also provides additional yield. Not having crawfish individually handled by workers was important. Processors felt if a person had to handle each individual crawfish, then he might as well hand-peel it, considering the speed at which workers can peel. Purchasing or having a lease option for the machine was the least important attribute, and was the least agreed-upon attribute in terms of direction of preference.

Though a cluster analysis was used to examine market segments, this analysis does not indicate that machines with different attributes should be developed for different segments. All producers preferred for the machine to conduct each of the tasks, deveining, retaining backstrap, retaining fat, and not requiring individual handling of the crawfish. Either own or lease options can be made available to processors without changing the physical attributes of the machine.

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Table 1: Marginal Effects for Conjoint Estimates, Aggregate Results

Variable	Coefficient	Standard Error	b/St. Error	P[|Z|>z
CONSTANT	-2.068	0.370	-5.591	0.000
DEVEIN	3.891	0.336	11.566	0.000
FAT	2.269	0.336	6.743	0.000
NOHANDLING	2.127	0.337	6.320	0.000
BACKSTRAP	2.197	0.337	6.523	0.000
OWN	0.237	0.330	0.072	0.943

Table 2. Ranking of Possible Hypothetical Machines.

Rank	Machine
1	Deveins, retains fat, no handling required, retains backstrap, own
2	Deveins, retains fat, no handling required, retains backstrap, lease
3	Deveins, retains fat, handling required, retains backstrap, own
4	Deveins, retains fat, no handling required, no retain backstrap, own
5	Deveins, no retain fat, no handling required, retains backstrap, own
6	Deveins, retains fat, handling required, retains backstrap, lease
7	Deveins, retains fat, no handling required, no retain backstrap, lease
8	Deveins, no retain fat, no handling required, retains backstrap, lease
9	No devein, retains fat, no handling required, retains backstrap, own
10	No devein, retains fat, no handling required, retains backstrap, lease
11	Deveins, retains fat, handling required, no retain backstrap, own
12	Deveins, no retain fat, handling required, retains backstrap, own
13	Deveins, no retain fat, no handling required, no retain backstrap, own
14	Deveins, retains fat, handling required, no retain backstrap, lease
15	Deveins, no retain fat, handling required, retains backstrap, lease
16	Deveins, no retain fat, no handling required, no retain backstrap, lease
17	No devein, retains fat, handling required, retains backstrap, own
18	No devein, retains fat, no handling required, no retain backstrap, own
19	No devein, no retain fat, no handling required, retains backstrap, own
20	No devein, retains fat, handling required, retains backstrap, lease
21	No devein, retains fat, no handling required, no retain backstrap, lease
22	No devein, no retain fat, no handling required, retains backstrap, lease
23	Deveins, no retain fat, handling required, no retain backstrap, own
24	Deveins, no retain fat, handling required, no retain backstrap, lease
25	No devein, retains fat, handling required, no retain backstrap, own
26	No devein, no retain fat, handling required, retains backstrap, own
27	No devein, no retain fat, no handling required, no retain backstrap, own
28	No devein, retains fat, handling required, no retain backstrap, lease
29	No devein, no retain fat, handling required, retains backstrap, lease
30	No devein, no retain fat, no handling required, no retain backstrap, lease
31	No devein, no retain fat, handling required, no retain backstrap, own
32	No devein, no retain fat, handling required, no retain backstrap, lease

Table 3: Marginal Effects for Cluster 1

Variable	Coefficient	Standard Error	b/St. Error	P[|Z|>z
CONSTANT	-2.886	0.484	-5.960	0.000
DEVEIN	4.386	0.450	9.740	0.000
FAT	1.243	0.454	2.736	0.006
NOHANDLING	2.452	0.449	5.467	0.000
BACKSTRAP	2.092	0.452	4.629	0.000
OWN	0.697	0.445	1.567	0.117

Table 4: Marginal Effects for Cluster 2

Variable	Coefficient	Standard Error	b/St. Error	P[|Z|>z
CONSTANT	-1.005	0.529	-1.902	0.057
DEVEIN	3.272	0.463	7.068	0.000
FAT	3.309	0.461	7.184	0.000
NOHANDLING	1.728	0.464	3.725	0.002
BACKSTRAP	2.263	0.462	4.902	0.000
OWN	-0.620	0.455	-1.361	0.173

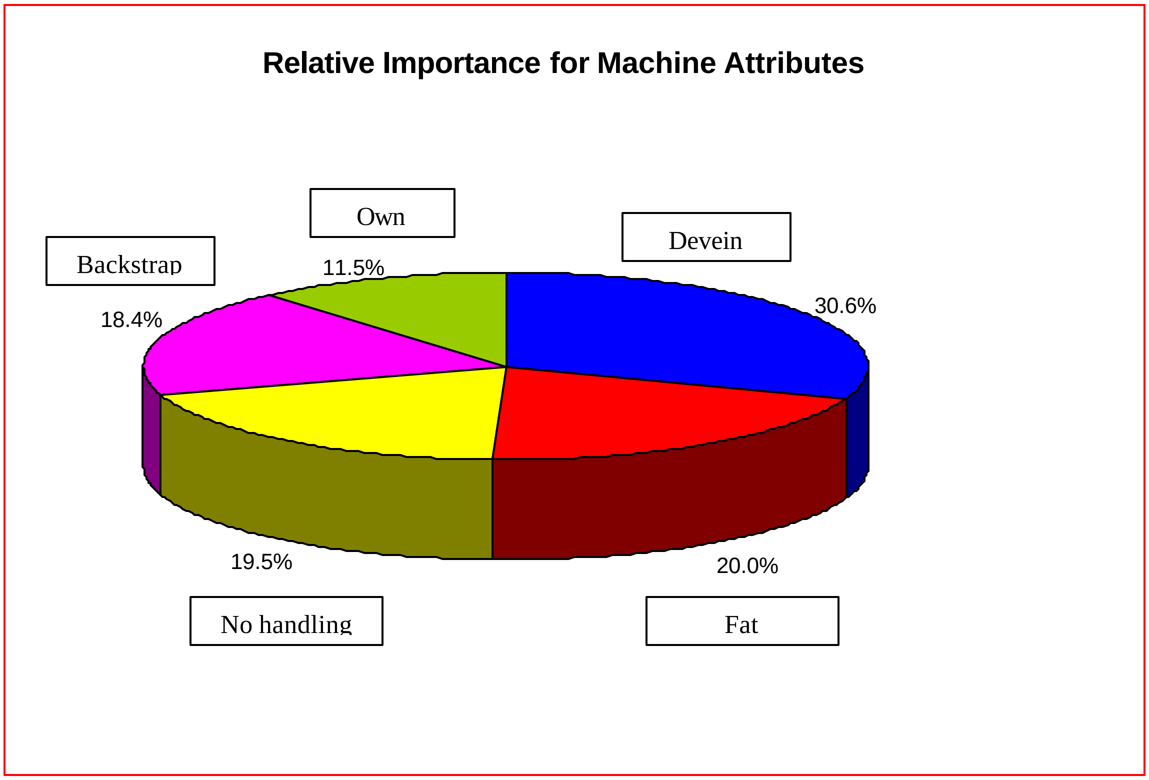

Figure 1: Depiction of Percent Importance Estimates.

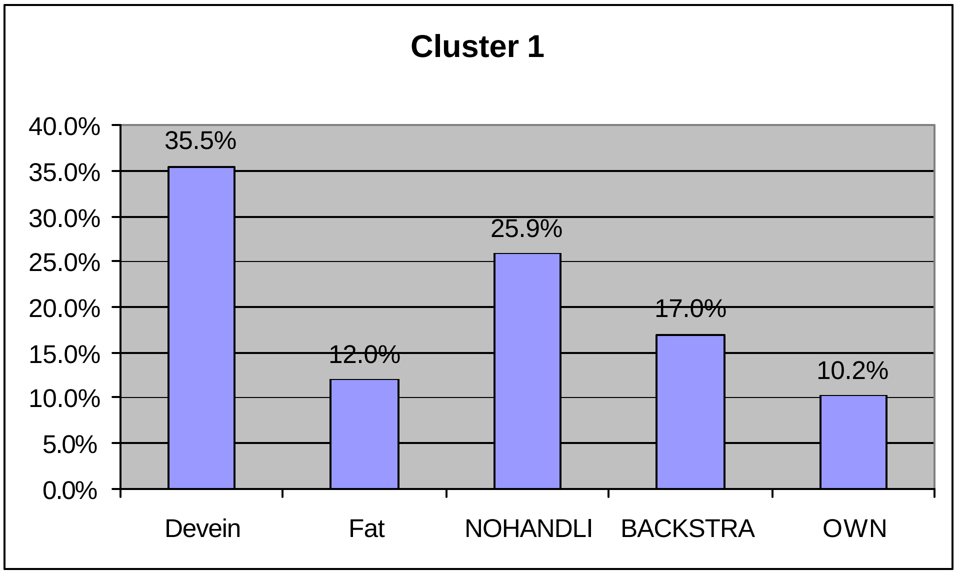

Figure 2: Relative Importance of Machine Attributes for Cluster 1

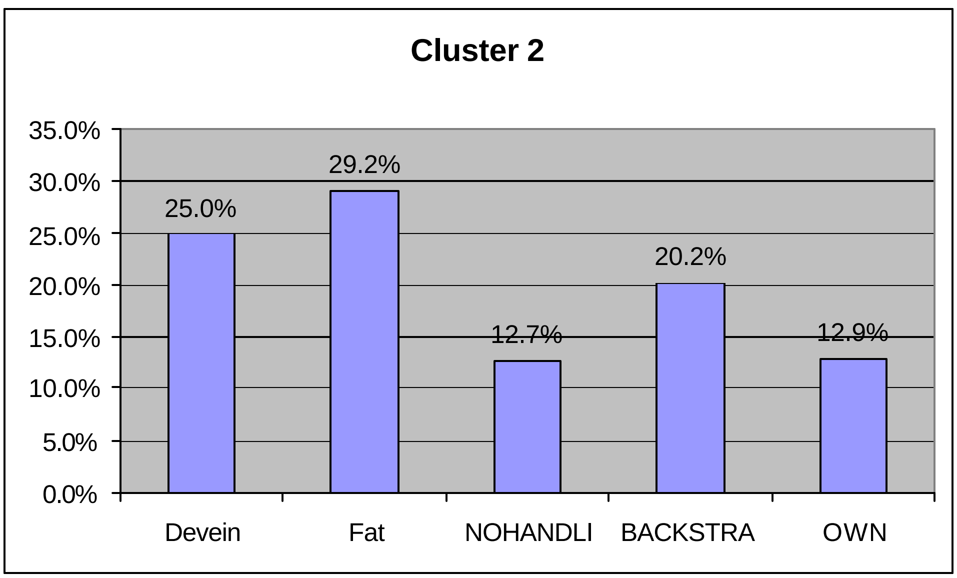

Figure 3: Relative Importance of Machine Attributes for Cluster 2

Appendix 1

Determination of Crawfish Peeling Machine Acceptability

1. If a mechanical crawfish peeler, which *deveined, separated the head from the tail, and retained the backstrap* were available from a reputable manufacturer at the same cost as the cost of picking labor, which of the following options would you prefer?

   a. Buy the machine
   b. Rent the machine
   c. Would not be interested in the machine
   d. Other (Please Specify)______________

2. Would you prefer to have a machine that deveins or does not devein the crawfish?

   a. Devein
   b. Does not devein

3. Would you prefer to have a machine that retains the fat or does not retain the fat of the crawfish?

   a. Retains the fat
   b. Does not retain the fat

4. Would you prefer to have a machine that retains the backstrap or does not retain the backstrap of the crawfish?

   a. Retains the backstrap
   b. Does not retain the backstrap

5. Would you prefer to have a machine in which an individual must handle each crawfish or one in which an individual need not handle each crawfish?

   a. Individual need not handle
   b. Individual must handle

6. If you were to adopt a crawfish peeling machine, would you prefer to own or lease it on an annual basis if the payments were based on a minimum base rent plus a production payment, and basic maintenance services were included in the price?

   a. Own the machine
   b. Lease the machine

Conjoint Analysis

Based upon your answers to the above questions, we assume that your most favored crawfish peeling machine would be one that:

____

Let's rate that machine as "10."

And, your least favored crawfish peeling machine would be one that:

____

Let's rate that machine as "0."

We assume that all other machines would fall somewhere in between the most and least favored machines above, and would thus range in rating between 10 and 0. I am going to present you with eight alternatives machines below. I would like for you to examine each of these machines and rate them on a scale from 0 to 10, where 0 represents the least favored machine above and 10 represents the most favored machine above. Here are the machines:

Machine	Attributes	Rating
1	Devein, keep fat, handling, backstrap, own	______
2	No devein, keep fat, handling, no backstrap, lease	______
3	Devein, keep fat, no handling, no backstrap, lease	______
4	No devein, keep fat, no handling, backstrap, own	______
5	Devein, no fat, handling, no backstrap, own	______
6	No devein, no fat, handling, backstrap, lease	______
7	Devein, no fat, no handling, backstrap, lease	______
8	No devein, no fat, no handling, no backstrap, own	______
HO1	Devein, keep fat, handling, no backstrap, lease	______
HO2	No devein, no fat, no handling, backstrap, own	______