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RESEARCH UP-DATES

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Human Resource Impacts on Food Store Selection and Shopping Loyalty

by

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Project Background

Human resources in food retailing are the second most important influence, second to the consumer, in facilitating the in-store transaction and the exchange of value.

Describing the role of store human resources in achieving customer awareness and creating positive attitudes contributes to the development of the situational environment on which market planning--strategic and tactical planning--is based.

This research project was initiated in order to operationally define terms and concepts frequently used to describe the reasons a consumer consistently shops a particular food store.

Satisfactions and frustrations are often defined in trade publications and by trade associations in rather nebulous terms, seldom definable in tactical store operating terms.

Goals and Objectives

It is assumed that retail management's goal is to effectively develop human service resources as facilitators of the marketing plan. More specifically, management's objectives are assumed to be (a) more effective employment of human resources with the appropriate service delivery capabilities, and (b) the retention and continuous upgrading of the service capabilities of human resources.

The research goal is to define appropriate levels and degrees of service explicitly and implicitly communicated from store customers. The research objectives are to (a) determine the in-store human resource characteristics related to customer frustrations, (b) determine store human resource characteristics related to customer satisfactions, and (c) determine the service characteristics of human resources desired by store customers.

Methods and Procedures

The data for this project have been and are presently being generated through telephone interviews with household members who spend the majority of grocery dollars for this respective household. During the fall of 1987, 635 Fort Collins, CO households were interviewed. During October of 1988, an additional 560 households were interviewed to follow up the previous survey.

Preliminary Findings

Human resource involvement significantly penetrated the base of reasons given for the frustrations experienced in the food store by customers.

Frustrations

The major sources of frustrations were long and slow checkout lines (41%), high prices (17%), and lack of variety of food products (12%). Employees were specifically mentioned by an additional 5 percent. Long and slow checkout lines are not caused entirely by checkers but they were perceived to affect the speed and were criticized for the delay and inconvenience perceived by the customer.

Likewise, human resources significantly penetrated the satisfaction base expressed by consumers while shopping in their food store and other stores.

Satisfactions

Employees were a source of satisfaction for 15.6 percent of the customers interviewed; plus another 8 percent mentioned the checker as a source of satisfaction.

Analysis will continue to explore relationships between shopping actions and human resource helpfulness ratings; between the shopping consistency index and the perception of human resource helpfulness; and other potentially insightful associations between and/or among variables in the shopping situation.

Repeated Shopping

Consistently shopping at a store was reportedly caused by numerous factors. Fourth on the list was the factor of employees (12%). Not a significant factor as explicitly expressed by the consumer, but what aspects of "convenience" are employee related? Convenience was the most important factor expressed as a reason for consistently shopping at a food store (expressed by 60% of the consumers).

What Do Consumers Want?

Human resources desired by food store customers in Fort Collins, CO are those that are knowledgeable with a positive attitude--an ability and willingness to help the consumer solve problems regarding product characteristics and product location in the store.

Store customers want a friendly person who is outgoing and helpful. Is the industry willing and able to employ and train persons with these characteristics?

Results of this project will be available in early 1989, and will be used as a basis for a third survey planned for March of 1989.

The Use of the Multi-Dimensional Database Spreadsheet (VP Planner) to Analyze Supermarket Revenue Data

by

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There is unlimited flexibility in the naming of the dimensions as well as the type of subheadings that the user may adopt. Since the data are placed on spreadsheets, changes may be readily made. The several sections of the database may be changed with relatively minimal effort.

After the dimensions are defined, appropriate data are entered into the database. The data are entered readily in a two-dimensional format. It is also possible to input formulas to manipulate the data. The results are also available from the perspective of the five dimensions.

At this time, data may be retrieved on a two-dimensional basis. For example, a worksheet may be set up, with TIME as the columns (horizontal) and ACCOUNTS the rows (vertical). Any combination of the five dimensions may be retrieved and reflected in a two-dimensional worksheet.

Some of the combinations may be:

- product by region
- product by time
- product by accounts
- product by divisions

The combinations are only limited by the requirements of the user. Any two of the dimensions may be used in the spreadsheet. The combinations with five dimensions would be 5! (factorial) which would give 120 possibilities (5*4*3*2*1). Because of storage technique used by VP-Planner, it is possible to make available all of these possibilities on a microcomputer. The system manipulates each individual piece of data and places it in the appropriate matrix as the information is required. Each matrix may be displayed with very little effort on the part of the user. After the database has been completed, there are about six keys to press to retrieve data and present it in the desired format.

The limitations of VP-planner may be summarized as follows:

Maximum dimensions: 5

Maximum categories: 254 per dimension

Maximum file size: 17 megabytes (17,000,000 bytes)

Memory requirements:

256K minimum

640K maximum

Qualitative Choice Models for Determining Factors Influencing Consumer's Preferences For Package Sizes of Selected Produce Items

by

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The questionnaire asked each respondent to indicate what package sizes they prefer for nineteen types of fruits and vegetables. Responses for each type of fruit and vegetable were categorized as small, medium and large and were given a score ranging from one to three (1: small; 2: medium; 3: large). The scores for all produce items were averaged. Thus those preferring the small package sizes for all items had the smallest average score. These average scores were then divided into three categories to create the final indexes. With those having an average score in the bottom third of the sample were given an index value of 0; these people had a tendency to prefer small package sizes. Those in the middle third received a value of 1; they preferred medium-sized packages, and those in the top third received a value of 2 and chose predominantly large sized packages. These two indexes were used in conjunction with other variables to evaluate the factors that determine the consumer's preference for certain package sizes.

1. Logistic regression fits a series of independent variables to either a single binary (0-1) dependent variable or to an ordinal (0, 1, . . . K) dependent variable. The package size of produce items was used as the dependent variable in logistical multiple regression models. It was hypothesized that the package size index for produce items might be influenced by total household size, income, age of respondent, education of respondent and frequency of shopping at supermarkets. These variables were included as independent variables in the model.

It was found that total household size was the most important predictor. The larger the household, the more likely consumers are to choose large package produce. Education was also found to have a slight negative relationship with choice of package size for produce.

In addition to household size and years of education, age of the respondent and frequency of supermarket shopping were found to be statistically significant variables in determining choice of package size for produce. A very slight positive relationship between age and choice of package size was indicated. As age increases, the likelihood of purchasing larger package sizes of produce increases very slightly. The relationship between frequency of shopping and choice of package size was somewhat stronger. As the frequency of supermarket shopping decreases, the tendency to choose large packages of produce increases. These regression results are in Table 1.

Discriminant Analysis

The major objective of discriminant analysis (DA) is the classification of an item into one of the several mutually exclusive groups on the basis of its measured response variables. It is used to predict the class to which unknown samples belong. Whereas regression analysis uses a weighted combination of continuous quantitative variables to predict an item's response on a continuous quantitative scale, DA uses a weighted combination of the quantitative variables to predict the discrete class to which an item belongs.

Table 1

Logistic Regression Procedure
Dependent Variable: Veggroup

Variable	Beta	Chi-Square	P	R
Alpha1	-1.0092	2.87	0.0904	
Alpha2	-2.3610	15.47	0.0001	
Q1S	0.2764	11.18	0.0008	0.070
Q26YA	0.0130	7.01	0.0081	0.052
Q26YSC	-0.0612	5.99	0.0144	-0.046
Q25TOT	0.4924	67.98	0.0000	0.188

Q1S - Shopping at supermarket
Q26YA - Age
Q26YSC - Educational level
Q25TOT - Household size

Discriminant analysis showed the same relationships among the variables as the logistic regression, but again was ineffective at categorizing observations based on these variables. The results of the discriminant analysis classification are presented in Table 2. The technique worked best at classifying observations into the small and large categories, but did an extremely poor job at classifying those in the medium group. About 67 percent of the observations in the small package size group, and about 52 percent of the observations in the large package size group were correctly categorized. Less than 17 percent of the observations in the medium group were classified appropriately.

Table 2

Discriminant Analysis
Number of Observations and
Percents Classified into Veggroup

From Veggroup	Small	Medium	Large	Total
Large	35.54	12.54	51.92	100.00
Medium	41.57	16.47	41.96	100.00
Small	66.88	10.39	22.73	100.00

Consumer Reaction Toward Promotional Tools Used to Induce Soft Drink Purchases in a Supermarket

by

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Problem Addressed

The goal of this research project was to examine consumer practices and motives relating to soft drink purchases especially their reaction toward promotional tools used to induce soft drink purchases in a supermarket.

Methodology

In order to measure consumer attitudes and behavior concerning their soft drink purchases, a two-page questionnaire was developed. This questionnaire was distributed to 212 customers at a local supermarket between the hours of 12 p.m. and 6 p.m. The questionnaire was placed on a clipboard and a random sample of customers were asked to participate in the survey. After the surveys were completed, the questionnaires were coded. Then, using the SPSS software package, the data were tabulated to develop frequencies and cross-tabulations.

Findings

From the data, various consumer practices and attitudes relating to soft drink purchases are apparent. Consumption of soft drinks is high with 53.6 percent of the sample drinking them on a regular basis (often/almost always) and 29.4 percent drink them periodically (sometimes). Most individuals (80.2%) purchase one to two different soft drink brands during a single trip to a supermarket. Some 54 percent of the respondents are loyal to a specific brand on a regular basis while 64.3 percent of the respondents switch between brands to some degree.

In rating the importance of taste, price, brand and packaging factors in soft drink purchase decisions, respondents rate taste as the most important factor. Although it is very important to both sexes, taste appears to be slightly more important to men than to women. Brand is a strong factor for 61.1 percent of the respondents. Price appears to be of only marginal importance in the respondent's decision and packaging is of relatively low importance.

The overall pattern of consumers stressing soft drink taste and brand to the subordination of the price factor points out that consumers generally are not willing to sacrifice taste for monetary savings. This behavior is further supported by several other response patterns. First, 57.7 percent of the respondents regularly purchase their favorite brand even if it is priced higher than the competition and another 25.6 percent will sometimes emulate this action. Second, 59.6 percent of the respondents generally would not purchase a brand other than their favorite brand because of a lower price. Third, 39.8 percent would not switch to a brand other than their favorite regardless of the difference in price, and another 14.8 percent required a difference of 40 cents or more to switch, which further supports the consumer's stress of taste

and loyalty to brand. Price can again be seen taking a back seat to taste and brand with 70.1 percent of the respondents not purchasing the cheapest brand out of the leading brands.

The responses relating to price discount, coupon, rebate and sweepstake/contest promotional tools convey that none of them have a particularly strong effect on consumer motivation and behavior. A price discount on the shelf is the most effective of the four tools. However, it only sometimes influences soft drink purchase for 33 percent of the respondents and is not an influence for 44.3 percent of the respondents. A cents-off coupon is the next most effective, a rebate is of low influence and a sweepstake/contest is even less effective as an influence of soft drink purchases.

Conclusions

The results of this study suggest that soft drink taste is the most important factor in the consumer's soft drink purchase decision. Price was not found to be the main influence of soft drink purchase decisions. Price discounting is the promotional tool that received the best response from consumers as being an influence on their purchasing decisions. Some consumers seem to associate a very low price with poor taste or poor quality. This study indicates that soft drink companies need to examine their promotional methods and the effectiveness of the promotional methods.

Demand Analyses of Finfish and Shellfish Products Using Scanner Data

by

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Problem Addressed

Scanner technology allows for the development of detailed databases in the retail food sector. Applications of this relatively new technology include evaluation of shelf space allocation, evaluation of advertising and promotion schemes, evaluation of new items, and estimation of price and total expenditure elasticities. However, problems such as data overload and data integrity exist. In order to circumvent these problems, it is necessary to aggregate and screen data prior to conducting economic analyses. Once the scanner data is in a usable form, demand analyses for particular products can be conducted. In this study, emphasis is on finfish and shellfish products.

Methodology Used

The assessment and evaluation of the use of scanner data in the application of demand analyses involves several steps. Initially, data were collected from Randall's food stores in Houston between January 1986 and June 1988. Because of the vastness of the database, it was necessary to aggregate the data in some manner. For this project, a total of four weekly databases will be developed corresponding to income levels of shoppers at stores (i.e., high, high middle, middle, and all). Given the emphasis on aquacultural products, finfish and shellfish will be separated for further analyses. Additionally, fish products will be classified as either being fresh or processed.

After the data have been collected and organized, it is then feasible to begin constructing econometric models. Single-equation demand analyses will be developed for certain aquacultural products and/or groups of products. The endogenous variables will be purchases of the respective products per customer. The respective exogenous variables will include:

(1) price per unit of product(s).

(2) prices per unit of complementary products.

(3) prices per unit of substitutable products.

(4) square centimeters of advertising space devoted to product(s).

(5) square centimeters of advertising space devoted to complements and substitutes.

(6) set of binary variables to measure nearness to pay day.

(7) total meat, poultry, and fish sales.

(8) dummy variables to measure seasonality.

At this point in the research, we are in the process of developing a definitive database for aquacultural products. Our goal is to be able to provide some preliminary results of the econometric analyses at the conference in October.

Assessing Value-Added Agricultural Industries

by

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Problem Statement

Several dynamic forces, including (1) emerging demand for specific food characteristics such as health attributes and convenience, (2) changing structural and organizational dimensions of markets, and (3) changing institutions and policies, are influencing agriculture and rural areas. These changes, particularly the search for employment and income from value-added activity in the marketing sector both domestically and for export, have the potential to enhance the economic position of farms and rural areas.

In Louisiana, agricultural processing industries have been analyzed as unique commodity markets. However, issues that cut across these industries, such as industrial organization application to the specific economic situation and market maturity levels of products, must be examined for income and employment implications as well as public policy prescriptions.

Louisiana's food processing industry has declined as a portion of total manufacturing. Between 1962 and 1982, annual decline of shipments had averaged 5.6 percent, and the industry's employment decline had averaged 11.7 percent. In 1985, Louisiana's top ten processed food groups contributed about 58 percent of food manufacturing (a relatively high value). Among the currently important products, however, growth may be limited by competing products and product characteristics--sugar is an example. Other segments of agriculture provide substantial growth potential. Among these are pepper sauces (production of about 38 million pounds in 1986-87), frozen food products including aquaculture and vegetable, and processing in the foodservice sector (salads and cole slaws). The forest products industry also has value-added potential.

Objectives

The general objective of this project is to evaluate the economic performance of value-added markets, and to ascertain the contribution of value-added industries to rural development in Louisiana.

Specific Objectives

(1) Provide a description of structural and organizational features of agricultural value-added industries in Louisiana.

(2) Analyze the key determinants of competitive position of firms in agricultural product manufacturing, including public policy decisions.

Methodology

(1) Two approaches will be taken. Researchers within the Agricultural Economics department who have a commodity responsibility will provide a description of value-added activity in those particular segments--fruit and vegetable processing falls into this category. Otherwise, primary information will be collected via mail survey and/or personal interviews. Information on income, employment, sales or shipments, estimated growth rates, and dominant product lines will be collected. A broad descriptive document will be published.

(2) The focus on Louisiana's value-added industries implies analysis of potential contribution to rural employment and income, in particular. Characteristics of these survivor firms may identify some advantage common across agricultural value-added industries, with application to rural communities across the state. Analysis will focus on total value-added potential, on resource requirements, and on position in the marketing chain. Secondary data will be exploited as far as possible, with firm level primary data to be collected as necessary.

Significance

As the share of the food dollar accruing to the marketing and service sectors increases, there will be an increasing demand for information concerning the performance of the system. Interest in efficiency of marketing and distribution of expenditure can be expected. Applications of the competitive model and of industrial organization are likely to be useful.

Size, Profitability and Growth of Wholesale Food Firms

by

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Statement of the Problem

Can small distributors survive and grow in the wholesale food industry where distribution economies seem to favor large firms? This question has assumed added urgency with the waves of mergers of large wholesalers and medium-sized firms, with the continuing higher incidence of unprofitable small firms as compared to large ones, and with persistently higher failure rates among small wholesale firms generally.

Retained earnings constitute a vital source of firms' expansion capital. Thus, survival and growth possibilities of firms of different sizes may be inferred from their relative rates of profit, particularly if some size-profit relationship is demonstrated to exist after allowances for other factors that also may impinge on firms' profits.

Objectives

This analysis seeks to determine whether size of wholesale food firms affects their profitability and, by extension, the relative levels of retained earnings that firms may use for expansion. A related purpose is to determine how general economic conditions affected industry profits during the 1980s.

Methodology

The analysis isolated the net effects of firm size, financial leverage, and capital intensity on net profit rates of various sized wholesale firms using multiple regression techniques. Basic data were the summary income tax returns of active corporations prepared by the Internal Revenue Service. These summaries contain detailed breakdowns of assets, receipts, deductions, income, credits, and taxes for eleven size groups.

Conclusions

Small firms have higher profit rates than large firms, and the difference persists even after allowances for inter-firm differences in financial leverage and capital intensity. If relative profit levels are accepted as criteria of firms' expansion potential, these findings imply that small distributors' growth possibilities are favorable.

General economic conditions after 1980 strongly depressed profits throughout the industry; however, with their relatively higher profit rates and thus higher levels of retained earnings, small wholesale firms fared no worse than larger counterparts during the period.