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PRIVATE LABEL AND NATIONAL BRAND PREPARED FOODS
A PILOT STUDY OF THE RELATIONSHIP OF SPACE ALLOCATION TO NET PROFIT

By

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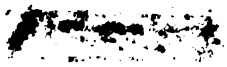

PREFACE

To date, much lip service has been given to the subject of maximizing profits by properly allocating shelf space to products stocked. Empirically, it would seem that shelf space is currently being allocated on a hit or miss basis.

The increasing number and impressive growth in sales of prepared food products has enticed retailers to add prepared foods to an increasing line of private label merchandise. Prepared food sections, therefore, have become areas which are seriously in need of a method for determining that allocation of shelf space which would maximize the sales and net profit realized by the retailer.

The author's interest in increasing the sales and profits realized from prepared food sections originates from his experience in prepared food sales. No implication of expertise is meant to be implied from this interest, only a sincere desire to gain a further insight into a problematical situation.

The purpose of the pilot study was to test the applicability and reliability of the research design which is presented in Appendix A. The research design provides a method for maximizing net profit through the proper allocation of shelf space to private label and manufacturer brand prepared foods.

The scope of the study is limited to the Kroger store which is located in Frandor Shopping Center, Lansing, Michigan. The results obtained are representative of other stores only to the degree that the Kroger, Frandor store was representative.

It is hoped that the study will encourage further exploration and testing of the methodology to the end that even greater net profits can be realized from the sale of prepared foods.

The author should like to acknowledge the patient understanding of his family and particularly the willingness of his wife, Lois, to spend her few spare hours at the typewriter; Dr. Daniel M. Slate, whose suggestions and insistence upon organization proved invaluable; Dr. Edward M. Barnet, who has provided guidance throughout the past school year; the Kroger Company and its personnel for allowing and cooperating in the study; and to the Campbell Soup Company, who provided the author with the opportunity to conduct the study.

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INTRODUCTION

I

INTRODUCTION

Supermarket operators and grocery manufacturers are concerned with the premium which has been placed upon shelf space in supermarkets today. The lack of available shelf space has resulted from the rapid increase in the number of items which are currently stocked by supermarkets. An important contributor to the increased number of items has been the broadening of product lines packed under private labels.[1]

Because of a rapid growth in sales, canned prepared foods have been selected for study.[2] The success of prepared foods can best be seen in the number of new products which have been introduced to the public as well as the

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[1]The term "private label" or "private labelled product" refers to any product label which is manufactured, distributed, or controlled by a wholesale or retail grocery organization. The products may be labelled under any name other than that of the manufacturer, except when the name of the manufacturer and retailer are one and the same. An example would be A & P or Kroger.

[2]For the purpose of this study, "prepared foods" will be considered to include only canned products whose basic ingredients have been blended into a new form during processing. Prepared food products can be served without further processing, except possible heating. Canned fruits, vegetables, unblended juices, meats, and other such items would be excluded by definition. Included would be canned soup, spaghetti, chili, and pork & beans.

increased over-all usage by consumers. The sale of soups, for instance, has been increasing in the last ten years at a rate 60 per cent greater than the rate for all foods combined. Soup consumption in 1960 rose both as a total national figure and on a per capita basis.[1]

From the point of view of the manufacturer, the sales of prepared foods have been built on the premise of product differentiation and brand loyalty. Competition has been primarily concentrated between a handful of manufacturers. The sales of a private label prepared food item will depend a great deal upon the degree of simulation of the taste preferences of consumers which have been developed by manufacturer brands.[2]

Competition among retail grocers has created the use of trading stamps, tape plans, and low prices, which have caused a reduction in net profits. Little wonder that grocers have introduced private label prepared foods in hopes of capitalizing on the growth rate and increasing already narrow profit margins.[3]

Personal observation would indicate that, in many cases, space has been allocated to private label prepared

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[1]"Memo for Merchandisers," Super Market Merchandising, XXVI, No. 11 (November, 1961), p. 79.

[2]For the purpose of the study, a "manufacturer brand" will be any product which bears the name of the manufacturer and may be purchased for resale by any or all grocery retailers. The product may also be referred to as a "national brand."

[3]"Where We Stand Today in Private Brand Merchandising," Progressive Grocer, XXXVIII, No. 8 (August, 1959), p. 46.

foods in a non-rational manner. Usually the product shelf facings of the manufacturer's brands have been reduced to accommodate the private label products.

The national brand manufacturer contends that a disproportionate allocation of space will reduce sales and cause the retailer to realize less than maximum profits from prepared food sections.[1] The retailer, on the other hand, will often take the point of view that net profit can be best increased by "pushing" the private label product in order to capitalize upon the greater percentage of gross profit carried by the product.

Problem

The problem of this study is twofold: (1) to determine whether or not a relationship exists between the amount of space allocated to prepared food products and the net profit realized from the sale of those products, and (2) to determine whether the amount of space currently allocated to private label and manufacturer brand prepared food products achieves net profit maximization.

Objective

The objective of the study is to construct a model for determining the allocation of space to private label

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[1]The term "retailer" is used to designate any store or organization of stores whose business function is the sale of grocery products directly to final consumers.

and manufacturer brand prepared foods that will allow a maximization of the net profit derived from the sale of these products.

Hypothesis

It is hypothesized that the supermarkets in the Lansing, Michigan area over-emphasize the amount of shelf space which is allocated to private label prepared foods. Thus, less than optimum net profit is being realized from the space utilized for prepared food sections.

Method

An in-store experiment was designed to measure accurately the sales and net profit per linear foot of shelf space for both private label and manufacturer brand prepared foods. The measure of linear feet was selected rather than square or cubic feet in order to assure uniformity and simplicity in conducting the study.

The term, square feet, has been used in many different manners by the grocery industry. Square feet measurements have been used in conjunction with floor area, selling area, horizontal shelf area, and vertical shelf area. The lack of agreement by the industry regarding the use of square feet measurements, could lead to a misinterpretation by persons who may read the study.

The problem of using cubic feet as a measurement is the matter of vertical distance. The space above the top

shelf would have to be of a standard height. Unfortunately, the heights to which products are stacked on top shelves varies from store to store.

The term, linear feet of shelf space, has a common meaning among members of the food industry. It is defined as 12 inches of space, measured horizontally along the front edge of a shelf. The actual measurement process is explained in detail in Appendix A.

The in-store experiment was conducted in the Kroger Super Market located in Frandor Shopping Center, Lansing, Michigan.[1]

Three controlled experiments were conducted in this store. The first phase of the experiment was designed to measure the sales and net profits of six canned soup items and three canned pork & bean items from the shelf space currently allocated to them.

The second controlled experiment also measured the sales and profits of the nine items mentioned above. The only condition which varied was the space allocated to each item. All related items were assigned an equal amount of shelf space.

The third experiment utilized the results of the first two experiments to determine the optimum space allocation for the products involved. By so doing, it was possible to increase the net profits realized from the sale of the products.

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[1]The factors considered in selecting this store for study are presented in Section III, p. 20.

All data was collected through observation and was manually tabulated. The nature and scope of data and tabulations, product characteristics, control factors, and the calculation of optimum space allocation are discussed in Appendix A.

Significance of the Pilot Study

The pilot study was utilized to test the operational procedures and tabulation forms which comprise the research design presented in Appendix A. The research design contains a program for expanding the pilot study to include a cross-section of Greater Lansing supermarkets. Time and financial limitations prevented the author from undertaking the complete study.

In addition, Appendix B includes a preliminary research design for a consumer preference survey which could be conducted in conjunction with the space allocation study. The consumer preference survey should be utilized to attempt to isolate the reasons for the lack of direct relationship between the amount of space allocated to a product and the sales of that product, which was prevalent in the pilot study.

The study and research designs presented in this paper are intended to serve as the basis for further research.

II

PRIVATE LABEL VERSUS MANUFACTURER'S BRANDS

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PRIVATE LABEL VERSUS MANUFACTURER'S BRANDS

The so-called "Battle of the Brands" for shelf space in supermarkets is not new. Indeed, the controversy of private label versus national brand merchandise is a subject which has been hashed and re-hashed by food industry personnel, students, and academicians for decades. It is not the purpose of this paper to regurgitate a historical resume of the pros and cons of this controversy. However, a brief review will be presented in order to establish a frame of reference for the presentation of the study.

Reasons for Stocking Private Label Merchandise

Competitive Reasons

Why does a supermarket stock private label products? Mr. Harley V. McNamara, president of National Tea Company, has stated that National would add a private label product only when forced to do so by competition.[1]

What Mr. McNamara means by "forced to do so by the competition" can, at best, be conjectured. Empirical observation would indicate that private label products may be

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[1] Harley V. McNamara, "The New Face of Distribution," Super Market Merchandising, XXV, No. 8 (August, 1960), p. 106.

added in order to prevent a competitor with a private label merchandise line from having a competitive edge in the product mix offered to consumers. Private label merchandise is usually sold at a lower price than competing national brands. In essence, the competitive edge is achieved by offering a line of lower-priced merchandise to the consumers.

Competition alone, should not be the criterion for stocking a private label item. Stop and Shop Supermarkets in Boston insist that a private label product will not be stocked unless:

1. It shows volume sales.
2. Its quality is equal to competing national brands.
3. It provides a savings to the consumer.
4. It must be profitable to the retailer.[1]

It is to be acknowledged that supermarkets are obtaining many private label products of a quality comparable to that of national brand products. The products are purchased at a lower price and, consequently, may be sold profitably at a lower retail price. In some instances, manufacturers of national brand products are today selling the same products with respect to formulation and quality under private labels, and at prices as much as one-third under the prices for the national brand.[2] The Federal Trade Commission is

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[1]Donald A. Gannon, "Private Labels, Cooperative Advertising, Profits," Super Market Merchandising, XXIV, No. 5 (May, 1959), p. 113.

[2]Letter from Mr. W. B. Nixon, General Sales Manager, Campbell Sales Company, January 19, 1962.

currently investigating practices of this nature to determine if the participating companies are guilty of price discrimination.

The Profit Viewpoint

It has been shown that private label merchandise is purchased and sold at lower prices. Competition today has created the use of trading stamps and low retail prices which, coupled with higher overhead and operating costs, has caused a reduction in the net profit realized by the supermarket operator. Consequently, emphasis is being placed upon private label merchandise in hopes of increasing already narrow profit margins.[1]

The following tables will provide a comparison between the percentage of gross sales and percentage of gross profits realized from private label products in selected voluntary groups and regional chains during 1958.

TABLE 1

PER CENT OF DOLLAR GROSS PROFIT
(Categories with Private Label
and National Brands)

	Voluntary Groups	Regional Chains
Private Brands	27%	22%
National Brands	73%	78%
Total	100%	100%

[1]"Where We Stand Today in Private Brand Merchandising," Progressive Grocer, XXXVIII, No. 8 (August, 1959), p. 48.

TABLE 2

PER CENT OF DOLLAR SALES
(Categories with Private
Label and National Brands)

	Voluntary Groups	Regional Chains
Private Brands	25%	16%
National Brands	75%	84%
Total	100%	100%

Source: Progressive Grocer, XXXVIII, No. 8 (August, 1959), p. 48.

A review of the tables will show that private labels accounted for 25 per cent of total dollar sales and 27 per cent of dollar gross profit in the voluntary groups. In the regional chains, private labels accounted for 16 per cent of the total dollar sales and 22 per cent of dollar gross profit.

It can be inferred from these figures that private label merchandise returns a greater percentage of gross profit. The question must then be asked, "What is the resultant net profit realized from the sale of private label merchandise?"

Here lies the real problem. No one seems to know exactly what it costs to sell a particular product.[1] Without this knowledge an accurate economic appraisal of a private label or, indeed, any product is impossible. It is

[1]"Brand Philosophy, the Von's Way," Super Market Merchandising, XXV, No. 7 (July, 1960), p. 45.

time for the food industry to cease operating on the basis of rules of thumb and emotionally founded decisions.

Net profit, the criteria for rational decision-making, can be determined for an entire store by deducting the total operating and overhead expenses from the gross profit realized from sales for a given period of time. Operating and overhead expenses include the following costs: real estate, depreciation, indirect labor, direct labor, advertising and promotion, trading stamps, utilities, and a portion of warehouse and general office expenses (see Appendix A). To ascertain the net profit contribution of a given product, it is necessary to determine that portion of total operating and overhead expenses incurred in the sale of that product.

A portion of the above expenses could be assigned to each product stocked on the basis of time-and-motion studies and a complete engineering survey. The prohibitive cost of such a study renders it impractical. This paper presents a method for allocating operating and overhead expenses on the basis of the amount of linear selling area utilized by each product. The application of this methodology permits computation of the net profit contribution for a given product. The perpetuity of a firm will be insured through the utilization of net profit as a criteria for rational decision-making.

Customer Loyalty to Brand and Store

Store loyalty is another argument for private labels.

Supermarket operators feel that customer preference for a private label can be a factor which will distinguish their store from competitors. The existant problem is to develop profitably a consumer preference for the private labelled products.

A recent study was conducted by Ross M. Cunningham of the Massachusetts Institute of Technology to determine the relationship between customer loyalty to store and brand.[1] The study was conducted among members of The Chicago Tribune consumer panel. The study points out that families with high store loyalty are somewhat more loyal to the particular private brands they purchase than are families with lower store loyalty.

Two factors of the study are of particular interest. First, a significant correlation between store loyalty and loyalty to private label canned prepared foods does not exist. Second, the data does not answer the question, "Is store loyalty more likely to lead to private-brand loyalty, or is private-brand loyalty more likely to lead to store loyalty?"

Some of the reasons for stocking private label merchandise have been presented. It is not intended to determine whether or not private label products should be stocked, but rather to indicate the reasons for stocking that are presented by retailers. The next step will be to present

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[1]Ross M. Cunningham, "Customer Loyalty to Store and Brand," Harvard Business Review, XXXIX, No. 6 (November-December, 1961), pp. 127-137.

the reasons for stocking manufacturer's label products.

Reasons for Stocking Manufacturer's Label Merchandise

Consumer Demand

A safe assumption would be that a supermarket operator would not purchase or continue to stock an item if the product was not purchased by the ultimate consumers. The assumption, being correct, would lead to the fact that consumer demand for the product exists. What creates this demand?

Assurance of quality.--It has been said that a consumer can be led to a display, but cannot be made to purchase; or more importantly repeat the purchase.[1] The growth of successful food manufacturers must have been dependent upon repeat sales to the ultimate consumer.

If the quality of the products had not been satisfactory in the past and was not expected to be of at least equal quality in the future, these repeat sales would not have occurred.

Advertising.--Advertising of manufacturer brand products in the various media is primarily institutional in nature. The purposes of such advertising is to create an appeal which will motivate the consumer to purchase; to build brand loyalty based on a quality image; and to encourage

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[1]Gannon, p. 113.

additional purchases by providing the consumer with new and interesting ideas for serving or preparing the product.

In addition, many manufacturers provide cooperative advertising allowances to assist the retailer financially in promoting the products directly to the consumers at the store level.

New Products Create New Markets

Much has been written on the value of new products in creating new markets, especially for convenience foods. Consumer eating patterns have been in a state of flux since the end of World War II. The new product innovations of national brand manufacturers have been at least partially responsible.

The 1961 annual report of the Campbell Soup Company states that new products which were introduced during the past ten years accounted for over one-third of the Company's sales for fiscal 1961.

Perhaps the best summation of the value of manufacturer's brand merchandise can be presented by quoting Harold G. Ward, Sales and Merchandising Manager of Von's Super Markets:

> I believe the difference (growth in food sales) has been made by the manufacturers. They have used continuous advertising to get the customer to give more toward her food budget by buying all of the "extras" such as added convenience, new taste sensations, more gracious entertaining.
> . . . . . .
> Private labels do not adventure. They cling to the coat-tails of the efforts made by Brand Manufacturers,

> . . . Private labels don't pioneer new products. . . . We welcome new products.[1]

Much of the innovation in new product development can be credited to the manufacturers of prepared foods. The number of new products introduced by the Campbell Soup Company during the 1961-62 fiscal year represents the largest number of new consumer-tested products ever introduced by that company in a single year.[2]

Despite the rapid growth of prepared food items, the current literature fails to recognize the resultant space allocation problems occurring within the prepared food sections in retail stores. The re-emergence of private label prepared foods is a contributing factor to the allocation problem.

Entry of Private Label Prepared Foods

The entry of private labels into canned prepared foods was originally made during the early 1920's by wholesale grocers and multiple store operators. The primary items involved were pork & beans, spaghetti, and, in many cases, one or more kinds of soup.[3]

The existence of these private label products continued until World War II when most of them disappeared from the market because of the relative shortage of food products.

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[1]"Brand Philosophy, The Von's Way," p. 40.

[2]Campbell Soup Company Annual Report, Fiscal year 1961.

[3]W. B. Nixon, personal letter.

During the past five years distributors once again have begun to expand the lines of private label products. The expansion of private label product lines and the rapid growth in total number of products stocked by supermarkets has created the problem of space allocation and management.

Store managers have a tendency to view private label products as "their" product and treat them accordingly when allocating shelf space. The attitudes of supermarket operators, combined with the rapid increase in number of items stocked and confronted by a limited amount of sales space, formulates the problem at hand.

III

RESULTS OF THE PILOT STUDY

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The pilot study was conducted in the Kroger Super Market which is located in Frandor Shopping Center. The Kroger store was selected for the following reasons:

1. Frandor Shopping Center provides shopping facilities second only to the downtown area and is patronized by a broad cross-section of the Greater Lansing population.
2. The Kroger store is located in the shopping center.
3. The store is one of the larger volume supermarkets in the Lansing area.
4. The management of the store was permissive toward the study.

The study was conducted during the period from January 8, 1962, to March 5, 1962. This period was divided into three phases. One week was selected from each phase for the purpose of comparison. The data presented represents the weeks selected.

Selection was made on the basis of total store sales. Total store sales for the selected weeks did not vary more than ± 3 per cent. A request for anonymity prevents the

usage of actual store sales figures. The weeks were also similar in that the test items did not receive any advertising or merchandising support of any type. In addition, close personal supervision was utilized in order to prevent an out-of-stock condition from arising. The following evaluation of the study is presented in chronological sequence so that it may be repeated and improved upon in subsequent experiments.

Preliminary Steps

Initial Interviews

The first step was to interview the store manager and assistant manager in order to obtain permission to conduct the study. The interview was carefully planned, although not structured, so as to assure that the store management was informed as to the subject and purpose of the study; who would conduct the study; and how the store was selected for the study. The interview should be considered as a carefully planned sales presentation.

After receiving permission to conduct the study, the head stock clerk and the chief of the night stocking crew were contacted. The nature and purpose of the study was presented to these persons and their cooperation was requested. This step should not be overlooked as the persons responsible for shelf-stocking were of invaluable aid in controlling the stability of space allocation during the study.

The head stock clerk was responsible for the ordering of merchandise. His awareness of the study procedures assisted in maintaining the proper level of product inventories during the study. Products ordered during the study were geared to the planned changes in space allocation which prevented the occurrence of an abnormally high inventory on any item.

Cost and Measurement Data

The procedure for tabulating operating cost and linear footage of sales area is presented in detail in Appendix A. A total cost concept was applied, as net profit rather than gross profit was used for evaluation. Imputed or opportunity costs were not included in the study as it was felt that the inclusion of these costs would not significantly alter the results of the study.

Relocation of Products

In order to avoid possible bias, all comparable test items should be stocked on the same shelf level.[1] It was necessary to move Brand B vegetable soup and Brand B pork & beans down one shelf level prior to beginning the study.

In each case, the item was moved only in a vertical direction so that the resultant space and position occupied within the product section was unchanged with the exception of being one shelf lower. Once the preliminary steps had

[1] A detailed explanation of the bias involved is presented in the section of Appendix A entitled "Conducting the Experiment: Phase 1."

been completed, Phase 1 of the study was begun.

Phase 1

The initial step taken was to record the beginning inventory and linear feet of selling area occupied for each test item on the In-Store Data Sheet (see Appendix A). All inventory counts were made on Saturday evening at 7:00 P.M., which is closing time. Since the store was not open on Sunday, the close of business on Saturday was considered to be the close of the business week. Accurate counts were more easily obtained at this time as shelf inventories were relatively low.

The purpose of Phase 1 was to measure the sales and net profits of the test items from the same amount of shelf space as occupied by those products prior to the study. The amount of space allocated and the percentage of total space for each product are shown in Table 3. Brand A and Brand B represent the national brand items. Brand C represents the private label products. This coding is used uniformly throughout the study.

The store was visited daily in order to control the stability of space allocation and to prevent the occurrence of an out-of-stock condition. The visits also served to insure that salesmen or store personnel had not installed any shelf talkers or other point-of-sale advertising materials which might bias the results of the study. No control problems were encountered during the week selected for Phase 1.

TABLE 3

SPACE ALLOCATION: PHASE 1

Brand	Tomato Soup		Vegetable Soup		Pork & Beans	
	Linear inches	Percentage of total space	Linear inches	Percentage of total space	Linear inches	Percentage of total space
A	44	50	22	50	27	35
B	22	25	11	25	14	18
C	22	25	11	25	36	47
Total	88	100	44	100	78	100

Source: Appendix A.

The ending inventory count was made at the close of the business week. Table 4 shows the resultant total unit sales, percentage of total sales, and the net profit or loss realized for each test item.

The salient factors which evolve from Phase 1 are the net losses which resulted and the relationship between percentage of space utilized and percentage of total sales. The relationship can be seen by comparing Tables 3 and 4. For instance, Brand B tomato soup occupied 25 per cent of total space allocated to tomato soup, but accounted for only 7.5 per cent of the total tomato soup sales.

The net losses shown in Table 4 do not necessarily indicate that the product should not be stocked. The loss does indicate that, although contributing to the fixed

TABLE 4

SALES AND NET PROFIT: PHASE 1

Brand	Unit Sales	Percentage of Total Sales	Net Profit or Loss
		Tomato Soup	
A	542	80.2	$2.5590
B	51	7.5	(1.2505)[a]
C	84	12.3	(.5342)[a]
Total	677	100.0	$ .7743
		Vegetable Soup	
A	197	70.1	$2.7037
B	17	6.1	(.5309)[a]
C	67	23.8	.2004
Total	281	100.0	$2.3732
		Pork & Beans	
A	186	60.6	$2.7208
B	4	1.3	(1.0390)[a]
C	117	38.1	(.4200)[a]
Total	307	100.0	$1.2618

[a]Net loss
Source: Appendix A

costs of operation, the profits realized from the sale of the product are not as great as the total cost which is charged against the space occupied.

The role played by selling price and gross margin in determining profitability was next examined. Selling prices

and gross margins are shown in Table 5. The prices and percentages shown were constant through all phases of the study.

TABLE 5

PRICE AND GROSS MARGIN OF PROFIT

Brand	Tomato Soup		Vegetable Soup		Pork & Beans	
	Selling Price	Per cent Margin	Selling Price	Per cent Margin	Selling Price	Per cent Margin
A	3/.35	10.9	2/.29	18.9	2/.29	22.1
B	3/.35	10.9	2/.29	18.6	2/.29	28.8
C	.10	20.0	.10	20.0	2/.25	25.0

A comparison of the gross margin and net profit (Tables 4 and 5) for any of the items quickly points out the importance of turnover. Without volume sales, profit margins are meaningless.

Phase 1 is a representation of profitability under the space allocation conditions as established by store personnel. Phase 2, to the best of the author's knowledge, is a unique step in the analysis and evaluation of space allocation.

Phase 2

Phase 2 was conducted in order to measure the sales and net profits which would result when all test items were afforded an equal sales opportunity based upon space allocation. With the exception of the amount of shelf space

allocated to each test item, all conditions and procedures were identical to Phase 1.

The total space allocated to each product group, e.g., tomato soup, was approximately the same. Tomato soup occupied 81 inches of linear space as opposed to 88 inches in Phase 1. Vegetable soup occupied 48 inches as opposed to 44 inches in Phase 1. Total space occupied by pork & beans remained the same. The variance in the space allocated to soups was necessitated due to the fact that they were tray-packed.[1] The variance in total space is not considered to be large enough to affect the comparisons in the study significantly.

Within each product group, each test item occupied an equal amount of linear shelf space. Thus, Brands A, B, and C each accounted for 33-1/3 per cent of the total shelf space allocated to each of the product groups. The resulting total unit sales, percentage of total sales, and net profits realized are shown in Table 6.

Several interesting observations can be drawn from the results of Phase 2. Although the amount of space occupied by Brand A tomato soup was reduced by 39 per cent, the relative percentage of total sales increased during Phase 2 by 2.3 per cent. Conversely, the space occupied by Brand C tomato soup was increased by 22 per cent and the resultant

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[1]Tray packing is a method of stocking and displaying products in half-case lots. If there are 24 units in each tray, they must be displayed in segments of four or six units.

TABLE 6

SALES AND NET PROFIT: PHASE 2

Brand	Unit Sales	Percentage of Total Sales	Net Profit or Loss
		Tomato Soup	
A	567	82.5	$4.2660
B	66	9.5	(1.4955)[a]
C	55	8.0	(1.3360)[a]
Total	688	100.0	$1.4345
		Vegetable Soup	
A	200	68.5	$3.2840
B	25	9.0	(.7660)[a]
C	66	22.5	(.2338)[a]
Total	291	100.0	$2.2842
		Pork & Beans	
A	100	62.0	$ .4590
B	16	10.0	(1.4910)[a]
C	45	28.0	(1.0460)[a]
Total	161	100.0	($2.0780)[a]

[a]Net loss
Source: Appendix A

relative percentage of total sales declined by 4.3 per cent.

The results of Phase 2 indicate that a direct relationship between the amount of linear space occupied and unit sales does not exist. A similar comparison of the other products tested supports this finding. It should be

pointed out that the reduction of shelf space on Brand A tomato and vegetable soup presented one control problem. It was necessary to restock these products personally three times during the week in order to prevent the occurrence of an out-of-stock condition.

The stocking was necessary, as might be expected, during the heavy business periods on Wednesday, Friday, and Saturday. The store manager stated that store personnel would have been unable to avoid an out-of-stock condition during these periods; thus, lost sales would have resulted.

It should also be noted that sales of pork & beans declined sharply during Phase 2. The loss of sales can be attributed to the display at a reduced price of another pork & bean item. This display was maintained throughout Phases 2 and 3. Although the pork & bean results are shown, the sales and net profit data are significantly biased and should not be viewed as representative.

The results obtained from Phases 1 and 2 were then evaluated and the linear shelf space that would be allocated to each product during Phase 3 was determined.

Space Allocation Method

Restrictions

The first step necessary in the determination of space allocation is the recognition of the factors and restrictions that exist. For the purpose of this study, the following factors were considered.

1. The product-mix was to remain static.
2. The amount of space allocated to each product group during Phase 1 was considered to be the maximum amount of space available.
3. There is a minimum amount of shelf space which must be maintained for each test product.

Factors 1 and 2 were predetermined and could not be altered. The minimum amount of shelf space for each product (factor 3) must allow for the stocking of a quantity of units which is sufficient to prevent the occurrence of an out-of-stock condition. For the soup items which were tray-packed, the minimum space was determined by the size of the shipping cases in which they were stocked.

The minimum linear shelf space for soups was determined to be 11 inches with the exception of Brand B vegetable soup which was eight inches. Adherence to these minimums allowed the stocking of 1-1/2 cases in the minimum space. The minimum space for pork & beans was determined to be 11 inches which would allow the stocking of 1-1/2 cases of product.

After determining the product-mix, maximum space restrictions, and the minimum space for each product, attention could be given the problem of maximizing the net profit for each product group.

Maximization of Net Profit

In order to maximize the total net profit within each product group, the net losses must be reduced. Optimum

space allocation would result when the gross profit realized from the sale of each product equals or exceeds the total cost of the space utilized by the product. Thus, net losses would not exist.

Method of Allocation

The method utilized to determine the space to be allocated to each test item during Phase 3 is relatively simple. The steps are shown below.

1. Determine the total gross profit per week for each product in both Phase 1 and Phase 2 by multiplying the gross profit per unit by the number of units sold.

   gross profit = profit per unit X units sold

2. Determine the maximum space which profitably could be allocated to each product in both Phase 1 and Phase 2 by dividing the gross profit per week by the total cost per linear inch of selling area per week.

$$\frac{\text{gross profit per week}}{\text{total cost per linear inch per week}} = \text{maximum inches to be allocated}$$

Table 7 shows the derivation of the maximum space allocation for each product based upon Phase 1 and Phase 2 sales.

TABLE 7

DERIVATION OF MAXIMUM SPACE ALLOCATION

Brand	Phase 1	Phase 2
	Profit per week / Cost per linear inch = maximum allocation (inches)	Profit per week / Cost per linear inch = maximum allocation (inches)
Tomato Soup		
A	$\frac{6.2330}{.0835} = 75$	$\frac{6.5205}{.0835} = 78$
B	$\frac{.5865}{.0835} = 7$	$\frac{.7590}{.0835} = 9$
C	$\frac{1.3028}{.0835} = 15$	$\frac{.9185}{.0835} = 11$
Vegetable Soup		
A	$\frac{4.5407}{.0835} = 54$	$\frac{4.6200}{.0835} = 55$
B	$\frac{.3876}{.0835} = 5$	$\frac{.5700}{.0835} = 7$
C	$\frac{1.1189}{.0835} = 13$	$\frac{1.1022}{.0835} = 13$
Pork & Beans		
A	$\frac{4.8918}{.0835} = 59$	$\frac{2.6300}{.0835} = 31$
B	$\frac{.1300}{.0835} = 2$	$\frac{.6800}{.0835} = 8$
C	$\frac{2.9250}{.0835} = 35$	$\frac{1.1250}{.0835} = 14$

As can be seen in Table 7, even though the amount of space allocated to each product was changed between Phases 1 and 2, the maximum space which profitably could have been allocated to each product remained virtually the same. This gives additional support to the lack of direct relationship between the amount of space allocated to a product and sales of the product which was presented earlier.

Allocation of space to each product during Phase 3 was determined in the following manner.

Tomato Soup:

1. The minimum allowable allocation of space for Brand B was 11 inches. This exceeded the maximum allowable allocation as determined for either Phase 1 or Phase 2 (see Table 7). Thus, the minimum established the allocation of 11 inches for this product.
2. The minimum allocation of space for Brand C is 11 inches which equals the maximum allocation as determined for Phase 2. Because of tray-packing, the next larger space that could be occupied would have to be at least 16 inches. This amount of space exceeds the maximum as determined for Phase 1 (see Table 7). Thus, 11 inches was allocated to this product.
3. Brands B and C were allocated a total of 22 inches. This space was subtracted from the 88 inches available for all tomato soup and the

remaining 66 inches was allocated to Brand A. It should be noted that this amount is less than the maximum allowable allocation for either Phase 1 or Phase 2 (see Table 7).

Vegetable Soup:

The minimum allowable space for Brand B again exceeded the maximum allocations as determined in Table 7. Steps 1, 2, and 3, as shown above, were repeated in order to determine the space allocation for the vegetable soup items. Brand A was allocated 27 inches; Brand B, 8 inches; and Brand C, 11 inches.

Pork & Beans:

As mentioned earlier, the sales of pork & beans were affected by the display of a competing pork & bean product. This forced a judgment as to the maximum space which could be allocated profitably. The maximum allowable space allocation was arbitrarily determined by averaging the figures as determined for Phases 1 and 2 (see Table 7). The maximum allocation would be 45 inches for Brand A, 5 inches for Brand B, and 24 inches for Brand C.

1. Once again the minimum possible allocation for Brand B exceeded the maximum profitable allocation. Steps 1, 2, and 3, as described above, were repeated.
2. Brand A was allocated 42 inches; Brand B, 11 inches; and Brand C, 24 inches.

3. The pork & bean sales and net profit results should not be viewed as representative because of the bias introduced both by the display and by the arbitrary judgment made in the allocation process.

The allocation method described above is designed to allow for better utilization of existing shelf space. The results of the method can be seen by examining the results for Phase 3.

Phase 3

The purpose of Phase 3 was to evaluate the effectiveness of the space allocation method developed above. The method was designed to permit a better utilization of existing shelf space. An increase in the net profit realized is the desired result.

With the exception of the allocation of linear shelf space to the individual test items, all conditions and procedures were identical to Phases 1 and 2. The amount of space allocated and the percentage of total space for each product is shown in Table 8.

Daily visits to the store affirmed that the allocation provided adequate shelf stock to prevent the occurrence of an out-of-stock condition. The only control problem encountered was the continuation of the special pork & bean display mentioned in Phase 2. This display negated the value of the results obtained for pork & bean sales.

TABLE 8

SPACE ALLOCATION: PHASE 3

Brand	Tomato Soup		Vegetable Soup		Pork & Beans	
	Linear Inches	Percentage of Total Space	Linear Inches	Percentage of Total Space	Linear Inches	Percentage of Total Space
A	66	75.0	27	59.0	42	54.5
B	11	12.5	8	17.0	11	14.5
C	11	12.5	11	24.0	24	32.0
Total	88	100.0	46	100.0	77	100.0

Source: Appendix A

Total unit sales, percentage of total sales, and the net profit or loss realized for each test item are shown in Table 9.

A comparison of the net profit results for Phases 1, 2, and 3 (Table 10) quickly discloses that a better utilization of the existing shelf space not only was possible, but was obtained. The net profit realized from the sale of tomato soup increased from $.77 in Phase 1 to $3.63 in Phase 3. Vegetable soup sales yielded a net profit of $4.57 in Phase 3 as opposed to $2.37 in Phase 1.

The only soup items that suffered a net loss during Phase 3 were Brand B tomato and vegetable soups. It should be pointed out that the allocation of space to these items was restricted by the minimum amount of space necessary due

TABLE 9

SALES AND NET PROFIT: PHASE 3

Brand	Unit Sales	Percentage of Total Sales	Net Profit or Loss
		Tomato Soup	
A	739	81.7	$2.9885
B	57	6.3	(.2630)[a]
C	109	12.0	.9018
Total	905	100.0	$3.6273
		Vegetable Soup	
A	248	72.3	$4.4743
B	16	4.4	(.3032)[a]
C	79	23.3	.4008
Total	343	100.0	$4.5719
		Pork & Beans	
A	163	63.4	$ .7799
B	16	6.3	(.3985)[a]
C	78	30.3	(.0540)[a]
Total	257	100.0	$ .3274

[a]Net loss

Source: Appendix A

to the tray-pack method of stocking. The net loss position of these items was expected prior to the beginning of Phase 3.

TABLE 10

NET PROFIT: PHASES 1, 2, AND 3

Brand	Phase 1	Phase 2	Phase 3
	Tomato Soup		
A	$2.5590	$4.2660	$2.9885
B	(1.2505)[a]	(1.4955)[a]	(.2630)[a]
C	(.5342)[a]	(1.3360)[a]	.9018
Total	$ .7743	$1.4345	$3.6273
	Vegetable Soup		
A	$2.7037	$3.2840	$4.4743
B	(.5309)[a]	(.7660)[a]	(.3032)[a]
C	.2004	(.2338)[a]	.4008
Total	$2.3732	$2.2842	$4.5719
	Pork & Beans		
A	$2.7208	$ .4590	$ .7799
B	(1.0390)[a]	(1.4910)[a]	(.3985)[a]
C	(.4200)[a]	(1.0460)[a]	(.0540)[a]
Total	$1.2618	($2.0780)[a]	$ .3274

[a]Net loss

Source: Appendix A

The net loss realized on Brand B tomato soup was reduced from $1.25 in Phase 1 to $.26 in Phase 3. The net loss on Brand B vegetable soup was $.30 in Phase 3 as opposed to $.53 for the same product during Phase 1. The loss on Brand B and Brand C pork & beans was reduced even

though the sale of these products was affected by the display mentioned previously.

The most significant evaluation is the net profit per unit sold for each product group during each of the three phases. The net profit per unit sold is calculated by dividing the total units sold for any product group, e.g., tomato soup, by the total net profit realized. Table 11 shows the net profit per unit sold for each product group during each phase.

TABLE 11

NET PROFIT PER UNIT SOLD BY PHASE

Phase	Tomato Soup	Vegetable Soup	Pork & Beans
1	$.00114	$.00844	$.00411
2	.00208	.00785	(.01290)[a]
3	.00408	.01333	.00127

[a]Net loss
Source: Appendix A

The net profit per unit of tomato soup sold was increased from one-tenth of a cent in Phase 1 to four-tenths of a cent in Phase 3. Although small in dollar value, this represents a 358 per cent gain. The net profit per unit of vegetable soup sold was increased by almost five-tenths of a cent (see Table 11).

The results of the pilot study appear to support the original hypothesis and to confirm the reliability of the

research design. The reallocation of shelf space to both private label and manufacturer brands not only enhanced the net profit realized from the sale of the individual items, but increased the net profit realized from the space utilized for all test items.

An excessive allocation of space to two of the three private label products tested was partially responsible for the lower net profits realized during Phases 1 and 2. Mutually responsible, however, was the excessive allocation of space to Brand B products--all national brands. The pilot study demonstrates significantly that the amount of shelf space allocated to private label prepared foods should not be influenced by the optical illusion of higher gross profit margins. Shelf space <u>should</u> be allocated to private label <u>and</u> manufacturer brand prepared foods on the basis of their <u>net</u> profit contribution.

The methodology presented in the pilot study provides the retailer with a weapon which will settle the age-old "battle of the brands."

Recommendations for needed improvement and expansion of the study are included in the next section of this paper.

IV

SUMMARY AND RECOMMENDATIONS

IV

SUMMARY AND RECOMMENDATIONS

Summary

In this era of increased competition and narrow profit margins, supermarket operators must do everything within their power to increase the net profit of their operations. With the great numbers of new products entering the competition for space on the supermarket shelf, the problem of space allocation increases in its importance both to the supermarket operator and the grocery manufacturer. Both are engaged in a struggle for survival.

The supermarket operator must use every tool at his disposal to bolster sagging net profits and at the same time remain competitive. One method for increasing net profit is through the proper allocation of shelf space. The question of how to utilize the existing selling area in a supermarket more profitably prompted the development of this pilot study.

The results of the pilot study indicate that within the store and for the products studied, an improvement in net profit was achievable through better space allocation. Shelf space was allocated on the basis of the product's net earning power. Each product, whether private label or

manufacturer brand, must earn the space it occupies if net profits are to be increased. Therefore, the amount of shelf space allocated to private label products should not be determined by sentimentality or illusionary gross profit margins. Shelf space must be allocated to each product on the basis of its net profit contribution.

The pilot study, although limited in scope, presents a practical method for evaluating and enhancing the net profit contribution of prepared food products. Through the application of this methodology, supermarket operators now will be able to allocate shelf space rationally to each prepared food product on the basis of its true profitability.

It is hoped that this pilot study will stimulate a doctoral candidate or a research group with sufficient interest and resources to continue and expand the scope of the study. The pilot study should provide the inquiring researcher with a bit of mortar which may be used in laying the foundation which is so vital to the food industry. With this thought in mind, the following recommendations are included.

Recommendations

1. Control would be enhanced if a group or chain of stores were selected rather than a market area as is suggested in Appendix A. Advertising and merchandising should be much easier to control at general office rather than store level.

2. With the aid of a computer and through the utilization of linear programming, the scope of the pilot study could be expanded to include all grocery products.
3. The study could be expanded to measure the effect that various product arrangements, location of product sections, and vertical size of product display have upon sales and net profit. Persons undertaking research in this area should make reference to a pilot study entitled Operation Velocity, which was conducted in 1961 at Michigan State University under the auspices of Dr. Edward M. Barnet. The study presented in this paper and Operation Velocity are not completely homogeneous; however, with some revisions one could serve to complement the other. If the study is expanded, the proper space allocation should be determined prior to varying other factors so that the study will be conducted under optimum net profit conditions.
4. If time permits, a consumer preference survey could be conducted in conjunction with the space allocation study. The consumer preference survey should provide insight into consumer purchase motives. Consumer purchase motives may contain the reasons for the lack of direct relationship between the amount of space allocated to a product

and the sales of that product. This lack of relationship between space and sales was experienced during the pilot study. Appendix B of this paper contains a suggested consumer preference survey design. Although limited in scope, it is hoped that the research design might serve as a starting point for further study.

Further study of the relationship of space allocation to net profit is of vital importance to the food industry. The contribution of those persons who may embark into this area of study shall be of great value to the largest industry group in the United States.

APPENDIX A

RESEARCH DESIGN--IN-STORE EXPERIMENT

APPENDIX A

Research Design--In-Store Experiment

Selection of Stores

The judgment method of selection was used to divide the Greater Lansing area into six segments.[1] A street map of the area was employed and the locations of supermarkets stocking private label prepared foods were plotted on this map.[2]

After plotting the location of the supermarkets, the map was divided into six geographic areas. Main thoroughfares, residential density, and number of stores were all incorporated in the decision for the area segmentation.

This selection procedure should provide an adequate cross-section of the entire shopping area. At least one store was selected from each of the geographical segments. Frandor Shopping Center, which provides shopping facilities second only to the downtown area and is patronized by a broad cross-section of the Greater Lansing population, was

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[1] William A. Spurr, Lester S. Kellogg, and John H. Smith, Business and Economic Statistics (Homewood, Illinois: Richard D. Irwin, Inc., 1954), p. 103.

[2] The population was derived from a list of grocery stores and percentage of total weekly sales. This list, dated March, 1961, is located in the files of the Lansing State Journal.

selected as a single area.

The dispersion of test stores has been designed to obtain a representation of all income, family size, ethnic, and age factors.

The selection of supermarkets, in which the experiment will be conducted, was based on two major factors. First, supermarkets which were centrally located within each area were selected. Secondly, the selection was designed so that three of the four corporate chain organizations would be included. No attempt was made to include A & P stores as their company policies would prohibit participation in the study. Shop-Rite, a cooperative chain, was also included in the selection process. It is realized that the exclusion of A & P stores will be a limitation of the study.

Area 1.--Area 1 is located entirely within the city limits of East Lansing, Michigan. Prince Brothers Shop-Rite, 555 East Grand River, was selected for the experiment.

Area 2.--The Frandor Shopping Center, which is located at Michigan Avenue and North Clippert Street, encompasses the whole of Area 2. The Wrigley, Kroger, and National Food stores have been selected. All are located in or adjacent to the shopping center.

Area 3.--Area 3 is bounded by: Harrison Avenue on the east, East Mt. Hope Avenue on the south, Pennsylvania

Avenue on the west, and Grand River Avenue on the north. The National Food Store, located at East Michigan Avenue and Ferguson Street, was chosen from this area.

Area 4.--Area 4 is bounded by: Grand River Avenue on the south, the Eaton County Line on the west, Wood Street on the east, and State Road on the north. The Kroger Store, 1721 North Grand River Avenue, will represent this area.

Area 5.--Area 5 is bounded by: Pennsylvania Avenue on the east, Mt. Hope Avenue on the south, the Eaton County Line on the west, and Saginaw Street on the north. The National Food Store at West Mt. Hope Avenue and Boston Boulevard, was selected as being representative of Area 5.

Area 6.--The boundaries for Area 6 are: Pennsylvania Avenue on the east, the New York Central Railroad tracks on the north, Miller Road on the south, and the Eaton County Line on the west. The store selected was Denstaedt's Shop-Rite.

Arrangements for conducting the in-store experiment will be made by personally interviewing the supermarket operators. The interviewer will be responsible for informing the supermarket operators as to the subject and purpose of the study, who is conducting the study, and how the store was selected for the study.[1] In order to allow the

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[1]J. Stacy Adams, Interviewing Procedures, A Manual for Survey Interviewers (Chapel Hill: The University of North Carolina Press, 1958), pp. 13-18.

interviewer to have more flexibility while making arrangements for this study, no attempt will be made to structure statements or questions to be used in the interview.

The advantage of providing flexibility lies in the ability of the interviewer to adapt the presentation to the personality of the individual supermarket operator. The main disadvantage of this type of qualitive interview is that the success depends directly upon the ability of the interviewer.[1] Because of the small number of stores to be contacted, the same person will conduct all interviews.

Should a store refuse to permit the experimentation, a second store will be selected from the area involved (see Table 12). Because of the number of previous experiments that have been conducted in the Lansing area, very little resistance is expected to be encountered.

TABLE 12

LIST OF STORES BY AREA

Store	Location
Area 1	
Prince Brothers Shop-Rite	555 E. Grand River, E. Lansing
Hauer's Shop-Rite	1109 E. Grand River, E. Lansing

[1]Albert B. Blankenship et al., "Questionnaire Preparation and Interviewer Technique," a Report by a Sub-Committee of American Marketing Association Committee on Marketing Research Techniques, The Journal of Marketing, XIV, No. 3 (October, 1949), p. 425.

TABLE 12 (continued)

	Area 2
Wrigley	Frandor Shopping Center
Kroger	Frandor Shopping Center
National	Frandor Shopping Center
	Area 3
National	East Michigan & Ferguson
Mike's Shop-Rite	2301 East Grand River
	Area 4
National	N. Larch and Douglas
Kroger	1221 N. Grand River
N. East Shop-Rite	2416 N. East
Willard's Shop-Rite	4206 N. East
	Area 5
National	W. Saginaw and Logan
National	W. Mt. Hope and Boston Blvd.
Kroger	4002 W. Saginaw
Townsend Shop-Rite	1910 W. Saginaw
Goodrich Shop-Rite	2401 W. St. Joseph
	Area 6
National	Jolly Road and S. Logan
Kroger	2510 S. Cedar
Wrigley	S. Cedar and Jolly Road
Denstaedt's	3630 S. Cedar
S. Cedar Shop-Rite	2519 S. Cedar
L & L Shop-Rite	5016 S. Logan

Note: Italics indicate stores selected for experiment.

The Experiment

Duration.--The duration of the entire experiment will be six weeks and will be divided into three phases of two weeks duration each.

The three phases of the experiment will be conducted consecutively in order to minimize any seasonal conditions which might affect the results of the experiment. Care also should be exercised to avoid periods which would include religious holidays, such as the period of Lent or Christmas. Religious diet restrictions or purchasing for holiday festivities could positively or negatively bias the results of a study conducted during such periods.

Each of the three phases should be as similar as possible in all respects. Since many families are paid and consequently purchase the majority of their groceries biweekly, the decision was made that each phase would be of two weeks duration in order to negate the incidence of pay periods.

The six week period beginning Monday, January 8, 1962, and ending Saturday, February 17, 1962, will best serve the needs of the study. Seasonal and pay factors will be as homogeneous throughout the entire experiment as for any other period of the year. Pay periods are equally dispersed in each of the two week periods. Cold weather will probably dominate the entire period. Also, grocery purchasing will be returning to a normal pattern after having been affected by Christmas and New Year's.

Control factors.--In order to provide uniformity throughout all phases of the experiment, several factors will have to remain static.

The first factor that would necessarily have to be considered would be the test products. Two categories have been selected for testing: canned condensed soups and pork & beans. Selection was made on the basis of relatively high sales volume and personal familiarity with the characteristics of the categories.

The two varieties of canned condensed soups to be tested are tomato and vegetable. Tomato and vegetable soup are the only varieties, packed under private labels, which are common to all stores included in the study.

In all stores the test will include the two varieties of three different brands. Included will be the two leading manufacturer brands and the private labelled brand. Observation of product sales in the Lansing area would tend to verify the assumption that the largest selling brands nationally, are also the largest selling brands locally. Therefore, manufacturer brands were selected on the basis of national sales figures. A code letter will be assigned to each brand and will be used consistently throughout all facets of the study.

Based on the previous assumption of national sales figures, the test products for the pork & bean category will include the two leading manufacturer brands and the private labelled brand being stocked by the retailer. The study will include only one-pound cans of pork & beans which are packed in tomato sauce. The study will exclude other size cans as well as pork & beans which are packed in molasses sauce.

Observation of local sales would indicate that consumer preference for the brands of pork & beans packed in tomato sauce tend to simulate national sales figures. The pork & bean test products will also be assigned code letters which will be used consistently throughout the study.

Advertising and display also must be controlled. Rather than attempt to measure the effectiveness of advertising for any of the test items, all items will be devoid of advertising and promotional activity during the study. This will include point-of-sale advertising as well as retail newspaper or other retailer-controlled media.

Another factor that will have to be controlled is the out-of-stock condition. If any of the test items were unavailable for purchase at any time, considerable bias would be introduced through possible substitution of brands or non-purchase of the item by consumers. It will be the responsibility of the survey workers to check the stores frequently enough to prevent this situation from arising.

Care also must be exercised to assure that the shelf space and position of the test items do not change during each phase of the study. Such control must be maintained by the survey workers.

Conducting the experiment: Phase 1.--The first two weeks of the experiment will be known as Phase 1. The purpose of Phase 1 is to measure the sales of the test items from the shelf space occupied prior to the study.

The experiment will necessitate the utilization of two research workers. Each worker will be responsible for four stores. The first responsibility of the research workers will be to relocate the products so as to conform to the restrictions of the study.

As an experimental restriction, the only change in the shelf position of a test item that will be made, will be a vertical move. In order to obtain an unbiased result, each comparable test item should be sold from the same shelf level. That would mean that all three brands of tomato soup would be stocked on the same shelf during the entire duration of the experiment. All other factors being equal, this will negate the possibility that a given level of shelf may be a better selling position than other levels of shelving.

A factor that should be considered is whether the eye appeal of the total area of a particular brand's complete line will have an effect upon the sale of a particular item within that area. If such is the case, not only the total area, but the number of products in the area would be involved.

After much consideration, the assumption was made that the sale of the test items might be dependent upon the product-mix offered by the brand. An effort to eliminate the value added due to product mix by removing the test products from the environmental position occupied, would have a tendency to bias the sales and net profits of the test products.

Therefore, the lateral position of the test products will not be changed. In addition, no changes will be made in the amount of space allocated to each test product. The second responsibility of the research workers will be to control the stability of space allocation and shelf position of the test items during the experiment.

The third responsibility of the research workers will be to obtain and record the amount of linear shelf space occupied and the unit sales for each test product. The following procedure will be employed for the recording of sales for each test item.

1. The research worker will physically count the number of units on the shelf at the beginning of each phase of the experiment.
2. Next, a count will be made of the number of units which are currently on hand in the stock room of the store. The sum of steps 1 and 2 will provide a total beginning inventory.
3. At the close of the period, the worker will obtain from the supermarket operator, the number of units received during the period. The number of units received should be obtained from the retailer's invoices and not from the order book. This will prevent error due to shipping discrepancies. This figure will then be added to the total beginning inventory.
4. The closing inventory at the end of each phase

will be obtained by repeating steps 1 and 2.

5. The closing inventory (step 4) will then be subtracted from the total beginning inventory plus the units received (step 3). The remainder will be the number of units of each product sold during the period.

The research workers will also check each store at least once daily to insure that the stipulated controls are effectively maintained. In addition, the workers will stock the shelves with product if deemed necessary to prevent an out-of-stock condition. Any instances where the restrictions are not adhered to will be corrected immediately and noted on the report forms.

Phase 2.--The middle two-week period will be known as Phase 2. All procedures and controls will be identical with those in Phase 1.

The only difference between Phase 1 and Phase 2 will be the allocation of space for the test items. During Phase 2, space will be allocated equally to all comparable items. For example, each brand of tomato soup will have an equal amount of shelf space.

The position of each item will be exactly the same as during Phase 1. Phase 2 is designed to provide a sales comparison for all items with all possible factors being equal.

By combining the results of Phase 1 and Phase 2, a

basis will be derived for the allocation of space for each product during Phase 3. The methods to be employed are described in Section III of the paper.

Phase 3.--The final two weeks of the experiment has been designated as Phase 3. Again, as in Phases 1 and 2, the same procedures and controls will be observed.

Phase three will differ from the previous phases in the allocation of space for the test products. The shelf space will be allocated on the basis of the sales per linear foot of shelf space and net profit per linear foot of shelf space as determined from the previous phases.

It is expected that the products being allocated on a pro rata basis, will return a greater total net profit for the linear footage of shelf space utilized. The total shelf space utilized will be held constant through all three phases of the experiment.

Data

The success of the entire experiment hinges upon the accurate collection and tabulation of data. The collection procedure will be carried out as outlined previously in the appendix. To aid in tabulating the data, the following forms have been designed. A brief explanation of the forms should suffice to portray their operationality.

Operational data sheet.--The operational data sheet, Table 13, will be used for recording the basic store information. A sheet will be used for each store included in

in the experiment. The need for the store name (1), and address (2), should be self-explanatory.

Section 3 is to be used to record the total operating costs per year for each store. To be included are:

3a. Total real estate costs--the amount of lease or rental payments for a one-year period.

3b. Total depreciation costs--includes depreciation of building (if owned) and equipment.

3c. Indirect labor costs--the total management salaries paid to the store manager and assistant manager including bonuses.

3d. Direct labor costs--all wages paid to store personnel (fringe benefits will be included under "other" expenses).

3e. Advertising and promotion costs--includes newspaper advertising, handbills, point of sale materials, and store decorations.

3f. Stamps--the cost of trading stamps.

3g. Utilities--heat, light, power for refrigeration equipment, etc.

3h. Other costs--includes supervisory expenses and an allocation of office and warehouse overhead (usually allocated on the basis of total sales).

3i. Total costs--the sum total of all above-mentioned costs.

The total linear feet of selling area (4) was determined as follows:

4a. Grocery--this figure is obtained by measuring the total linear footage of shelving on which dry groceries are stocked for sale to consumers. For example, if a gondola is 60 feet in length and has 4 levels of shelving on each side, the total measured area would equal 480 linear feet (60 feet x 4 shelves x 2 sides = 480 linear feet). The total linear footage of display sales area normally utilized for dry groceries was included. The total measurement represents the total dry grocery sales area.

4b. Non-food--includes all shelving devoted to general merchandise as well as permanent non-food display racks. For instance, if the magazine rack is 10 feet wide and has 2 selling levels, the total sales area of the rack would be 20 linear feet.

4c. Frozen food--the total linear footage of freezer space was measured. Only the front edge of the cabinets were measured as the ends of the cabinet were blocked by displays and merchandise could be purchased by the consumer only from the front of the cabinets.

4d. Meat--all meat cases and permanent meat display cases were measured. The same measurement criteria, physical ability to purchase area, was utilized in obtaining the measurement.

4e. Produce--produce displays and permanent display islands were measured in the same manner and by applying the same criteria as was used for meat and frozen food.

4f. Dairy--the dairy department measurement was obtained by first measuring the overall length. Second, the number of sales levels (shelves) was counted. Third, the total length was multiplied by the number of sales levels to determine total linear feet of sales area.

4g. Total linear feet--the sum total of the above measurements.

A total measurement, by category, of all linear sales space for the entire store was obtained. Total space was measured as it is felt that the cost of operations must be allocated to total space. If operating costs were allocated to partial rather than total space utilized, the resultant figure would be inflated.

The final data to be recorded on the operational data sheet is the total cost per linear foot of selling area per week (5). This figure is obtained by dividing the total cost (31) by the total linear feet of selling area (4g) and

then dividing the remainder by 52 (number of weeks per year).

The operational data sheet will be compiled, by the research workers, for each store prior to the beginning of the experiment. This form will be submitted to the person in charge of the experiment immediately upon compilation in order to prevent misplacement.

The in-store data sheet.--The in-store data sheet (Table 14) will be used by the research workers for the purpose of recording the space occupied and the sales of each test item on a weekly basis. The form will be submitted to the person in charge of the experiment at the end of each week.

Items (1), (2), and (3) should be self-explanatory and will be used for identification of the data submitted.

Item (4) provides for the recording of the linear feet of space occupied by each of the test items. The linear footage of selling area will be obtained by measuring the front edge of the shelving from the left extremity to the right extremity of the test item. Measurement shall be made for each test item. The measurement may be recorded in inches if it is deemed to be more representative than a measure of fractions of feet.

Item (5) allows for the recording of the weekly sales of each test item. The procedure for obtaining the necessary counts was set forth in the description of the methods of conducting the experiment.

Tabulation sheet--sales and profits.--The tabulation sheet (Table 15) is to be used only by the person in charge of the experiment. It will be used for tabulating, weekly, the data compiled on the in-store data sheet.

Items (1) through (5) are to be transcribed directly from the in-store data sheets and should be self-explanatory.

The calculation of the gross profit per unit for each of the test products is presented in items (6) and (7) of the form. The gross profit per unit is obtained by subtracting the cost per unit from the sales price per unit.

Item (8), the unit sales per week utilizes data from the in-store data form. Caution again must be exercised to transcribe the data for the correct store and phase of the experiment.

The total gross profit per week is calculated for each of the test products in item (9) of the form. Gross profit per week is obtained by multiplying the unit sales per week by the profit per unit for each item.

Item (10), the total net profit per week, is calculated by subtracting the cost per week of the linear feet of space allocated to the product from the total gross profit per week realized from the sales of the product. The cost per week of the linear feet of space allocated may be determined by multiplying the total cost per linear foot of selling area per week (Item 5 of the operational data sheet) by the linear feet of selling area per product (Item 4 of the tabulation sheet).

Coding.--The letter coding of test products will remain constant throughout all phases of the experiment. Each research worker will be supplied with a list of the codes prior to the start of the experiment. Coding is being utilized in order not to offend any packer or manufacturer during the analysis of the study.

TABLE 13

OPERATIONAL DATA SHEET

1. Store Name Kroger

2. Address Frandor Shopping Center

3. Total operating costs per year

a)	Total real estate costs	32,500
b)	Total depreciation costs	9,100
c)	Indirect labor costs (management salaries)	20,800
d)	Direct labor costs	148,200
e)	Advertising and promotion costs	19,500
f)	Stamps	58,500
g)	Utilities	17,550
h)	Other costs (supervisory expenses and allocation of office and warehouse expenses)	40,950
i)	Total costs	247,100

4. Linear feet of selling area

a)	Grocery	3,035
b)	Non-food	987
c)	Frozen food	123
d)	Meat	172
e)	Produce	235
f)	Dairy	188
g)	Total linear feet	4,740

5. Total cost per linear foot of selling area per week (4g ÷ 31) ÷ 52 = 1.0025 .

TABLE 14

IN-STORE DATA SHEET

1. Store Name Kroger

2. Address Frandor Shopping Center

3. Phase 1

4. Linear feet of selling area per product
   a. Tomato soup
      1) Brand A ..... 44 inches
      2) Brand B ..... 22 inches
      3) Private label ..... 22 inches
   b. Vegetable soup
      1) Brand A ..... 22 inches
      2) Brand B ..... 11 inches
      3) Private label ..... 11 inches
   c. Pork & beans
      1) Brand A ..... 27 inches
      2) Brand B ..... 14 inches
      3) Private label ..... 36 inches

5. Sales of each test item (beginning inventory + units received - ending inventory)

a. Tomato soup								
1) Brand A	777	+	432	-	667	=	542
2) Brand B	180	+	96	-	225	=	51
3) Private label	176	+	96	-	188	=	84
b. Vegetable soup								
1) Brand A	173	+	288	-	264	=	197
2) Brand B	73	+	24	-	80	=	17
3) Private label	54	+	96	-	83	=	67
c. Pork & beans								
1) Brand A	622	+	0	-	436	=	186
2) Brand B	40	+	0	-	36	=	4
3) Private label	448	+	0	-	331	=	117

TABLE 15

TABULATION SHEET - SALES AND PROFITS

1. Store Kroger

2. Address Frandor Shopping Center

3. Phase No. 1

4. Linear feet of space--soup
   a. Tomato
      1) Brand A ..... 44 inches
      2) Brand B ..... 22 inches
      3) Private label ..... 22 inches
   b. Vegetable
      1) Brand A ..... 22 inches
      2) Brand B ..... 11 inches
      3) Private label ..... 11 inches

5. Linear feet of space--pork & beans (1 lb. can only)
   a. Brand A ..... 27 inches
   b. Brand B ..... 14 inches
   c. Private label ..... 36 inches

6. Profit per unit--soups (selling price - cost)
   a. Tomato soup
      1) Brand A .1167 - .1052 = .0115
      2) Brand B .1167 - .1052 = .0115
      3) Private label .1000 - .0833 = .0167
   b. Vegetable soup
      1) Brand A .1450 - .1219 = .0231
      2) Brand B .1450 - .1222 = .0228
      3) Private label .1000 - .0833 = .0167

7. Profit per unit--pork & beans (selling price - cost)
   a. Brand A .1450 - .1187 = .0263
   b. Brand B .1450 - .1125 = .0325
   c. Private label .1250 - .1000 = .0250

TABLE 15 (continued)

8. Unit sales per week
   a. Tomato soup
      1) Brand A 542
      2) Brand B 51
      3) Private label 84
   b. Vegetable soup
      1) Brand A 197
      2) Brand B 17
      3) Private label 67
   c. Pork & beans
      1) Brand A 186
      2) Brand B 4
      3) Private label 117

9. Total profit per item per week (unit sales x profit per unit)

a. Tomato soup						
1)	Brand A	542	x	.0115	=	6.2330
2)	Brand B	51	x	.0115	=	.5865
3)	Private label	84	x	.0167	=	1.3028
b. Vegetable soup						
1)	Brand A	197	x	.0231	=	4.5407
2)	Brand B	17	x	.0228	=	.3876
3)	Private label	67	x	.0167	=	1.1189
c. Pork & beans						
1)	Brand A	186	x	.0263	=	4.8918
2)	Brand B	4	x	.0325	=	.1300
3)	Private label	117	x	.0250	=	2.9250

10. Total net profit per week (total profit per item - cost of linear feet of space allocated per item)

a. Tomato soup						
1)	Brand A	6.2330	-	3.6740	=	2.5590
2)	Brand B	.5865	-	1.8370	=	(1.2505)
3)	Private label	1.3028	-	1.8370	=	(.5342)
b. Vegetable soup						
1)	Brand A	4.5407	-	1.8370	=	2.7037
2)	Brand B	.3876	-	.9185	=	(.5309)
3)	Private label	1.1189	-	.9185	=	.2004
c. Pork & beans						
1)	Brand A	4.8918	-	2.1710	=	2.7208
2)	Brand B	.1300	-	1.1690	=	(1.0390)
3)	Private label	2.9250	-	2.5050	=	.4200

TABLE 16

IN-STORE DATA SHEET

1. Store Name Kroger

2. Address Frandor Shopping Center

3. Phase 2

4. Linear feet of selling area per product

a.	Tomato soup	
	1) Brand A	27 inches
	2) Brand B	27 inches
	3) Private label	27 inches
b.	Vegetable soup	
	1) Brand A	16 inches
	2) Brand B	16 inches
	3) Private label	16 inches
c.	Pork & beans	
	1) Brand A	26 inches
	2) Brand B	26 inches
	3) Private label	26 inches

5. Sales of each test item (beginning inventory + units received - ending inventory)

a.	Tomato soup							
	1) Brand A	210	+	624	-	267	=	567
	2) Brand B	236	+	96	-	266	=	66
	3) Private label	80	+	144	-	169	=	55
b.	Vegetable soup							
	1) Brand A	176	+	192	-	168	=	200
	2) Brand B	45	+	96	-	116	=	25
	3) Private label	21	+	48	-	3	=	66
c.	Pork & beans							
	1) Brand A	139	+	96	-	135	=	100
	2) Brand B	183	+	24	-	191	=	16
	3) Private label	387	+	0	-	342	=	45

TABLE 17

TABULATION SHEET - SALES AND PROFITS

1. Store Kroger

2. Address Frandor Shopping Center

3. Phase No. 2

4. Linear feet of space--soup
   a. Tomato
      1) Brand A ..... 27 inches
      2) Brand B ..... 27 inches
      3) Private label ..... 27 inches
   b. Vegetable
      1) Brand A ..... 16 inches
      2) Brand B ..... 16 inches
      3) Private label ..... 16 inches

5. Linear feet of space--pork & beans (1 lb. can only)
   a. Brand A ..... 26 inches
   b. Brand B ..... 26 inches
   c. Private label ..... 26 inches

6. Profit per unit--soups (selling price - cost)
   a. Tomato soup
      1) Brand A .1167 - .1052 = .0115
      2) Brand B .1167 - .1052 = .0115
      3) Private label .1000 - .0833 = .0167
   b. Vegetable soup
      1) Brand A .1450 - .1219 = .0231
      2) Brand B .1450 - .1222 = .0228
      3) Private label .1000 - .0833 = .0167

7. Profit per unit--pork & beans (selling price - cost)
   a. Brand A .1450 - .1187 = .0263
   b. Brand B .1450 - .1125 = .0325
   c. Private label .1250 - .1000 = .0250

TABLE 17 (continued)

8. Unit sales per week
   a. Tomato soup
      1) Brand A 567
      2) Brand B 66
      3) Private label 55
   b. Vegetable soup
      1) Brand A 200
      2) Brand B 25
      3) Private label 66
   c. Pork & beans
      1) Brand A 100
      2) Brand B 16
      3) Private label 45

9. Total profit per item per week (unit sales x profit per unit)

a. Tomato soup						
1) Brand A	567	x	.0115	=	6.5205
2) Brand B	66	x	.0115	=	.7590
3) Private label	55	x	.0167	=	.9185
b. Vegetable soup						
1) Brand A	200	x	.0231	=	4.6200
2) Brand B	25	x	.0228	=	.5700
3) Private label	66	x	.0167	=	1.1022
c. Pork & beans						
1) Brand A	100	x	.0263	=	2.6300
2) Brand B	16	x	.0325	=	.6800
3) Private label	45	x	.0250	=	1.1250

10. Total net profit per week (total profit per item - cost of linear feet of space allocated per item)

a. Tomato soup					
1) Brand A	6.5205	-	2.2545	=	4.2660
2) Brand B	.7590	-	2.2545	=	(1.4955)
3) Private label	.9185	-	2.2545	=	(1.3360)
b. Vegetable soup					
1) Brand A	4.6200	-	1.3360	=	3.2840
2) Brand B	.5700	-	1.3360	=	(.7660)
3) Private label	1.1022	-	1.3360	=	(.2338)
c. Pork & beans					
1) Brand A	2.6300	-	2.1710	=	.4590
2) Brand B	.6800	-	2.1710	=	(1.4910)
3) Private label	1.1250	-	2.1710	=	(1.0460)

TABLE 18

IN-STORE DATA SHEET

1. Store Name Kroger

2. Address Frandor Shopping Center

3. Phase 3

4. Linear feet of selling area per product

a.	Tomato soup	
	1) Brand A	66 inches
	2) Brand B	11 inches
	3) Private label	11 inches
b.	Vegetable soup	
	1) Brand A	27 inches
	2) Brand B	8 inches
	3) Private label	11 inches
c.	Pork & beans	
	1) Brand A	43 inches
	2) Brand B	11 inches
	3) Private label	24 inches

5. Sales of each test item (beginning inventory + units received - ending inventory)

a.	Tomato soup							
	1) Brand A	654	+	480	-	395	=	739
	2) Brand B	152	+	0	-	95	=	57
	3) Private label	68	+	144	-	103	=	109
b.	Vegetable soup							
	1) Brand A	248	+	96	-	96	=	248
	2) Brand B	108	+	0	-	92	=	16
	3) Private label	0	+	192	-	113	=	79
c.	Pork & beans							
	1) Brand A	148	+	96	-	81	=	163
	2) Brand B	124	+	0	-	108	=	16
	3) Private label	188	+	48	-	158	=	78

TABLE 19

TABULATION SHEET - SALES AND PROFITS

1. Store Kroger

2. Address Frandor Shopping Center

3. Phase No. 3

4. Linear feet of space--soup
   a. Tomato
      1) Brand A ..... 66 inches
      2) Brand B ..... 11 inches
      3) Private label ..... 11 inches
   b. Vegetable
      1) Brand A ..... 27 inches
      2) Brand B ..... 8 inches
      3) Private label ..... 11 inches

5. Linear feet of space--pork & beans (1 lb. can only)
   a. Brand A ..... 42 inches
   b. Brand B ..... 11 inches
   c. Private label ..... 24 inches

6. Profit per unit--soups (selling price - cost)
   a. Tomato soup
      1) Brand A .1167 - .1052 = .0115
      2) Brand B .1167 - .1052 = .0115
      3) Private label .1000 - .0833 = .0167
   b. Vegetable soup
      1) Brand A .1450 - .1219 = .0231
      2) Brand B .1450 - .1222 = .0228
      3) Private label .1000 - .0833 = .0167

7. Profit per unit--pork & beans (selling price - cost)
   a. Brand A .1450 - .1187 = .0263
   b. Brand B .1450 - .1125 = .0325
   c. Private label .1250 - .1000 = .0250

TABLE 19 (continued)

8. Unit sales per week
   a. Tomato soup
      1) Brand A 739
      2) Brand B 57
      3) Private label 109
   b. Vegetable soup
      1) Brand A 248
      2) Brand B 16
      3) Private label 79
   c. Pork & beans
      1) Brand A 163
      2) Brand B 16
      3) Private label 78

9. Total profit per item per week (unit sales x profit per unit)

a. Tomato soup						
1) Brand A	739	x	.0115	=	8.4985
2) Brand B	57	x	.0115	=	.6555
3) Private label	109	x	.0167	=	1.8203
b. Vegetable soup						
1) Brand A	248	x	.0231	=	5.7288
2) Brand B	16	x	.0228	=	.3648
3) Private label	79	x	.0167	=	1.3193
c. Pork & beans						
1) Brand A	163	x	.0263	=	4.2869
2) Brand B	16	x	.0325	=	.5200
3) Private label	78	x	.0250	=	1.9500

10. Total net profit per week (total profit per item - cost of linear feet of space allocated per item)

a. Tomato soup					
1) Brand A	8.4985	-	5.5100	=	2.9885
2) Brand B	.6555	-	.9185	=	(.2630)
3) Private label	1.8203	-	.9185	=	.9018
b. Vegetable soup					
1) Brand A	5.7288	-	1.2545	=	4.4743
2) Brand B	.3648	-	.6680	=	(.3032)
3) Private label	1.3193	-	.9185	=	.4008
c. Pork & beans					
1) Brand A	4.2869	-	3.5070	=	.7799
2) Brand B	.5200	-	.9185	=	(.3985)
3) Private label	1.9500	-	2.0040	=	(.0540)

APPENDIX B

THE CONSUMER SURVEY

APPENDIX B

The Consumer Survey

Selection of Population

The housewives who live in Spartan Village, a housing development for married students attending Michigan State University, were selected as the population from which to draw the sample.

The primary reason for selecting this finite population was the relative ease with which it could be listed. There are 1308 apartments in the development, of which 1275 are occupied. Apartments are grouped into building units. Each unit is numbered and contains either 8 or 12 apartments. Apartments within each unit are further identified by letter.

A brain-storming session conducted with members (most of whom reside in Spartan Village) of the graduate seminar in food distribution at Michigan State University brought forth the following probable population hypotheses:

1. Age of housewives much younger than national average for United States. Most housewives probably under 30 years of age.
2. Family income is limited because husband, wife, or both are attending college.
3. Geographic origin of residents is highly diverse.

4. Predominantly higher level of education than national average for the United States.
5. Large proportion of young children in families.
6. Very susceptible to promotional gimmicks, such as trading stamps.
7. Limited refrigerated storage space.
8. Generally quite insecure.
9. Buy more convenience foods than average.
10. Housewives are relatively inexperienced as cooks.
11. Very materialistically motivated.

Many more characteristics were mentioned; however, the above list reflects those which were most dominant and unique.

The results of the sample will be representative of only this population and its unique characteristics. The representativeness of the results of the sample should be viewed as a limitation which has been recognized.

Sample Size

Prior to determining the size of the sample to be drawn, it was necessary to review the objectives of the sample. The objective of this sample was to determine what proportion of Spartan Village housewives would, on the basis of appearance and taste, select the product that they claim they normally purchase.

For example, if ten housewives state that they usually purchase brand x, what percentage of these housewives will state a preference for brand x over brand y and brand z, on the basis of taste and appearance. In essence, the results should indicate whether a correlation exists between

consumer preference for a particular brand and the brand that is purchased.

The statistical precision of the sample shall fall within the following parameters.

1. The maximum allowable error will be 10 per cent.
2. A certainty of 95 per cent that the sampling error will not exceed the 10 per cent limit.

In simple terms, this means that the proportion of the housewives sampled who indicate a preference for the product which they say they purchase will be within 10 per cent of the proportion that would be determined if a census were taken of the population. The error would not exceed 10 per cent in 95 out of every 100 samples drawn. Therefore, it can be said that the randomly selected sample will be of such size that the proportion derived can be viewed with 95 per cent certainty of being within 10 per cent of the proportion which would be representative of the entire population.

Because the proportion is now unknown, it will be necessary to select a maximum sized sample.[1] Determination of sample size is shown below.

maximum error = 10 per cent

confidence coefficient = 2 (rounded)
size of sample = n

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[1]When the desired proportion is unknown, the proportion is assumed to be 50 per cent. This proportion will always achieve a maximum size sample.

proportion who can select (p) = .5
proportion who cannot select (q) = .5

$$\frac{.10}{2} = \sqrt{\frac{p \times q}{n}}$$

$$.05 = \sqrt{\frac{.5 \times .5}{n}}$$

$$.0025n = .25$$

$$n = 100$$

Therefore, a randomly selected sample of 100 Spartan Village housewives will satisfy the established parameters.

Sampling Technique

Random selection.--The selection process entails two basic steps. First, an itemized list of all apartments in Spartan Village was prepared. This list is included at the end of the appendix. Each apartment was assigned a code number. The numbers run from 1 to 1308. The sample units will be selected through the utilization of a table of random numbers. A total sample of 175 will be selected in order to allow for vacant apartments and no answer occurrences. The first 100 respondents selected will comprise the sample.

Once the units have been randomly selected, the names and telephone numbers of the residents will be obtained from the Housing Office of Michigan State University.

Initial contact.--The initial contact with the housewives selected will be by telephone. The nature and purpose

of the survey will be explained and a commitment to participate will be solicited.

The initial contact should be made by a woman in order to allay any suspicion or hesitancy that might arise if the initial contact was made by a man. Inducement to participate will be in the form of a door prize and gifts for each participant. The inducement will be utilized to gain the acceptance of the housewives contacted.

Sampling procedure.--The sampling sessions will be held in Spartan Village Recreation Hall, a centrally located facility. Two sessions will be held on a Sunday afternoon at 2:30 p.m. and 3:30 p.m. Fifty participants will attend each session. Sunday afternoon was selected as it is felt that most husbands would be available to care for the children. Thus, the need for a baby-sitter would not be a deterrent to participation. The time scheduled is expected to fall mid-way between meals so that taste buds would not be influenced by a just-completed meal.

The sampling sessions will be conducted by five female home economics students from Michigan State University. Because of the company affiliation which might bias the responses of the participants, the author will not conduct the sampling sessions. The products sampled will be the same products which were utilized for the in-store experiments.

Once the participants have been assembled, the following procedure will be followed.

1. A few brief introductory remarks by the leader of the sampling session.
   a. Thank participants for attending.
   b. Explain that all products are coded and that the codes may be, but will not necessarily be switched during the session.
   c. Explain the questionnaire and how it should be filled in. Fill in basic data.
   d. Explain that door prizes and gifts will be distributed at the end of the session.
   e. Caution each participant to judge the products as an individual and to please refrain from making comments aloud which might sway the judgment of another participant.
2. The physical sampling for all product categories (tomato soup, vegetable soup, and pork & beans) will be carried out as follows:
   a. Two containers of each of the three products in each category will be prepared. Care should be taken to assure that each product is diluted and heated equally in order to avoid differences due to preparation. All containers should be identical in order to avoid any possible psychological effect due to size, color, etc.
   b. Participants will view one container of each of the three products in one category (e.g.,

tomato soup) and complete that portion of the questionnaire which seeks preference by color and overall appearance.

c. Next, each participant will be given a two-ounce sample of each brand of the product, e.*g.*, tomato soup. After sampling the three brands, the participant will rank them according to preference. The two-ounce samples will be taken from the second set of containers. The code letters on the second set of containers will not represent the same product as on the first set of containers. The participants, being aware that this might be done, should not be biased by their answers to the first question.

The participants will now be supplied with a small glass of water to wash away the flavor of the previously sampled product. The participants will then be asked to answer the questions regarding their purchases. The sheet of the questionnaire will now be collected.

A concentrated effort to control collaboration between participants during the sampling session and the immediate collection of each page of the questionnaire should force each participant to arrive at an individual evaluation.

The above procedure will be repeated for each of the product categories: tomato soup, vegetable soup, and pork & beans. At the completion of the sessions and after all

questionnaires have been collected, the gifts which were promised as inducement will be distributed to the participants.

Questionnaire

The questionnaire is designed so as to be as brief as possible. The brevity is designed to avoid the irritation factor which might affect a participant's answers. Questions are arranged so that each page may be collected upon completion of that portion of the sampling session. Each questionnaire will bear a different code number. The number of a given questionnaire will appear on each page of the questionnaire in order that they may be reassembled for tabulation. A copy of the questionnaire is included at the end of the appendix.

The questions on the first page of the questionnaire are designed primarily to put the respondent at ease by providing questions which are easy to answer. It is not expected that there will be any reluctance to answer question 5 (approximate income) because of the anonymity of the questionnaire. In addition, the questions on the first page of the questionnaire will provide information about the size, age, geographic origin, and income of the families represented. A cross tabulation will be made to see if any factors are significantly correlated with the balance of the data.

The questionnaire on the remaining pages which relate to product preference are to be answered by ranking the

products in order of preference. The questions are divided as follows:

1. Color--a ranking on the basis of color was requested as it is felt that the color of a product imparts a first impression to the observer.
2. Ingredients and consistency--the participants will be given the opportunity stir the products and to examine the product ingredients. The apparent quality of ingredients is another prime factor in judging a product.
3. Over-all appearance--after making a judgment on the basis of color and of consistency and ingredients, the participant is given the opportunity to judge the product on the basis of its total appearance. The selection in this category may be completely different than either of the prior categories. For example, a product may have what is considered to be the best color and ingredients, but, because of the visible fat content, may rank last in over-all appearance.
4. Taste or flavor--the samples of the products to be tested will be taken from different containers in order to negate the possibility of the flavor ranking being influenced by the visual evaluations. This question is designed to determine the taste preference of the individual participant.

It should be noted that in each of the above questions, an alternative is offered for those persons who are unable to make a judgment. The negative wording of this alternative is purposely designed to encourage a ranking type answer. It is felt that most participants will be reticent to admit that they are unable to distinguish between the products.

Question (5a) is structured in order to determine if the participant purchases any brand of the product in question. Question (5b) is also structured to learn which brand, if any, is usually purchased. Question (5c) is an open-ended question and is not intended to guide the participant. If price is a factor in purchasing the test products, it is hoped that it will be brought out by this question.

In total, the questionnaire is limited by the experience and conceptual skills of the author. The questionnaire should provide the necessary data to determine whether a correlation exists between the preference rankings and the brands that participants indicate are purchased.

TABLE 20

POPULATION LIST--SPARTAN VILLAGE: A HOUSING DEVELOPMENT FOR MARRIED STUDENTS ATTENDING MICHIGAN STATE UNIVERSITY, EAST LANSING, MICHIGAN

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1401	A	1		L	44		K	87
	B	2	1405	A	45		L	88
	C	3		B	46	1409	A	89
	D	4		C	47		B	90
	E	5		D	48		C	91
	F	6		E	49		D	92
	G	7		F	50		G	93
	H	8		G	51		H	94
	I	9		H	52		I	95
	J	10		I	53		J	96
	K	11		J	54	1410	A	97
	L	12		K	55		B	98
1402	A	13		L	56		C	99
	B	14	1406	A	57		D	100
	C	15		B	58		E	101
	D	16		C	59		F	102
	E	17		D	60		G	103
	F	18		G	61		H	104
	G	19		H	62		I	105
	H	20		I	63		J	106
	I	21		J	64		K	107
	J	22	1407	A	65		L	108
	K	23		B	66	1411	A	109
	L	24		C	67		B	110
1403	A	25		D	68		C	111
	B	26		E	69		D	112
	C	27		F	70		G	113
	D	28		G	71		H	114
	G	29		H	72		I	115
	H	30		I	73		J	116
	I	31		J	74	1412	A	117
	J	32		K	75		B	118
1404	A	33		L	76		C	119
	B	34	1408	A	77		D	120
	C	35		B	78		E	121
	D	36		C	79		F	122
	E	37		D	80		G	123
	F	38		E	81		H	124
	G	39		F	82		I	125
	H	40		G	83		J	126
	I	41		H	84		K	127
	J	42		I	85		L	128
	K	43		J	86	1413	A	129

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1413	B	130		G	179		L	228
	C	131		H	180	1422	A	229
	D	132		I	181		B	230
	E	133		J	182		C	231
	F	134		K	183		D	232
	G	135		L	184		E	233
	H	136	1418	A	185		F	234
	I	137		B	186		G	235
	J	138		C	187		H	236
	K	139		D	188		I	237
	L	140		E	189		J	238
1414	A	141		F	190		K	239
	B	142		G	191		L	240
	C	143		H	192	1423	A	241
	D	144		I	193		B	242
	E	145		J	194		C	243
	F	146		K	195		D	244
	G	147		L	196		E	245
	H	148	1419	A	197		F	246
	I	149		B	198		G	247
	J	150		C	199		H	248
	K	151		D	200		I	249
	L	152		E	201		J	250
1415	A	153		F	202		K	251
	B	154		G	203		L	252
	C	155		H	204	1424	A	253
	D	156		I	205		B	254
	E	157		J	206		C	255
	F	158		K	207		D	256
	G	159		L	208		E	257
	H	160	1420	A	209		F	258
	I	161		B	210		G	259
	J	162		C	211		H	260
	K	163		D	212		I	261
	L	164		G	213		J	262
1416	A	165		H	214		K	263
	B	166		I	215		L	264
	C	167		J	216	1425	A	265
	D	168	1421	A	217		B	266
	E	169		B	218		C	267
	H	170		C	219		D	268
	I	171		D	220		E	269
	J	172		E	221		F	270
1417	A	173		F	222		G	271
	B	174		G	223		H	272
	C	175		H	224		I	273
	D	176		I	225		J	274
	E	177		J	226		K	275
	F	178		K	227		L	276

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1426	A	277		F	326		K	375
	B	278		G	327		L	376
	C	279		H	328	1435	A	377
	D	280		I	329		B	378
	E	281		J	330		C	379
	F	282		K	331		D	380
	G	283		L	332		E	381
	H	284	1431	A	333		F	382
	I	285		B	334		G	383
	J	286		C	335		H	384
	K	287		D	336		I	385
	L	288		G	337		J	386
1427	A	289		H	338		K	387
	B	290		I	339		L	388
	C	291		J	340	1436	A	389
	D	292	1432	A	341		B	390
	E	293		B	342		C	391
	F	294		C	343		D	392
	G	295		D	344		E	393
	H	296		E	345		F	394
	I	297		F	346		G	395
	J	298		G	347		H	396
	K	299		H	348		I	397
	L	300		I	349		J	398
1428	A	301		J	350		K	399
	B	302		K	351		L	400
	C	303		L	351	1440	A	401
	D	304	1433	A	353		B	402
	E	305		B	354		C	403
	H	306		C	355		D	404
	I	307		D	356		E	405
	J	308		E	357		F	406
1429	A	309		F	358		G	407
	B	310		G	359		H	408
	C	311		H	360		I	409
	D	312		I	361		J	410
	E	313		J	362		K	411
	F	314		K	363		L	412
	G	315		L	364	1441	A	413
	H	316	1434	A	365		B	414
	I	317		B	366		C	415
	J	318		C	367		D	416
	K	319		D	368		E	417
	L	320		E	369		H	418
1430	A	321		F	370		I	419
	B	322		G	371		J	420
	C	323		H	372	1442	A	421
	D	324		I	373		B	422
	E	325		J	374		C	423

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1442	D	424		G	473		B	522
	E	425		H	474		C	523
	F	426		I	475		D	524
	G	427		J	476		E	525
	H	428	1447	A	477		F	526
	I	429		B	478		G	527
	J	430		C	479		H	528
	K	431		D	480		I	529
	L	432		E	481		J	530
1443	A	433		F	482		K	531
	B	434		G	483		L	532
	C	435		H	484	1452	A	533
	D	436		I	485		B	534
	E	437		J	486		C	535
	F	438		K	487		D	536
	G	439		L	488		G	537
	H	440	1448	A	489		H	538
	I	441		B	490		I	539
	J	442		C	491		J	540
	K	443		D	492	1512	A	541
	L	444		E	493		B	542
1444	A	445		F	494		C	543
	B	446		G	495		D	544
	C	447		H	496		E	545
	D	448		I	497		F	546
	E	449		J	498		G	547
	F	450		K	499		H	548
	G	451		L	500		I	549
	H	452	1449	A	501		J	550
	I	453		B	502		K	551
	J	454		C	503		L	552
	K	455		D	504	1513	A	553
	L	456		G	505		B	554
1445	A	457		H	506		C	555
	B	458		I	507		D	556
	C	459		J	508		E	557
	D	460	1450	A	509		F	558
	E	461		B	510		G	559
	F	462		C	511		H	560
	G	463		D	512		I	561
	H	464		E	513		J	562
	I	465		F	514		K	563
	J	466		G	515		L	564
	K	467		H	516	1514	A	565
	L	468		I	517		B	566
1446	A	469		J	518		C	567
	B	470		K	519		D	568
	C	471		L	520		E	569
	D	472	1451	A	521		F	570

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1514	G	571		D	620		G	669
	H	572		E	621		H	670
	I	573		F	622		I	671
	J	574		G	623		J	672
	K	575		H	624	1526	A	673
	L	576		I	625		B	674
1515	A	577		J	626		C	675
	B	578		K	627		D	676
	C	579		L	628		E	677
	D	580	1520	A	629		F	678
	G	581		B	630		G	679
	H	582		C	631		H	680
	I	583		D	632		I	681
	J	584		E	633		J	682
1516	A	585		F	634		K	683
	B	586		G	635		L	684
	C	587		H	636	1527	A	685
	D	588		I	637		B	686
	E	589		J	638		C	687
	F	590		K	639		D	688
	G	591		L	640		E	689
	H	592	1523	A	641		F	690
	I	593		B	642		G	691
	J	594		C	643		H	692
	K	595		D	644		I	693
	L	596		E	645		J	694
1517	A	597		F	646		K	695
	B	598		G	647		L	696
	C	599		H	648	1528	A	697
	D	600		I	649		B	698
	E	601		J	650		C	699
	F	602		K	651		D	700
	G	603		L	652		G	701
	H	604	1524	A	653		H	702
	I	605		B	654		I	703
	J	606		C	655		J	704
	K	607		D	656	1529	A	705
	L	608		E	657		B	706
1518	A	609		F	658		C	707
	B	610		G	659		D	708
	C	611		H	660		E	709
	D	612		I	661		F	710
	G	613		J	662		G	711
	H	614		K	663		H	712
	I	615		L	664		I	713
	J	616	1525	A	665		J	714
1519	A	617		B	666		K	715
	B	618		C	667		L	716
	C	619		D	668	1530	A	717

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1530	B	718		F	766		J	814
	C	719		G	767		K	815
	D	720		H	768		L	816
	E	721		I	769	1539	A	817
	F	722		J	770		B	818
	G	723		K	771		C	819
	H	724		L	772		D	820
	I	725	1535	A	773		E	821
	J	726		B	774		F	822
	K	727		C	775		G	823
	L	728		D	776		H	824
1531	A	729		E	777		I	825
	B	730		F	778		J	826
	C	731		G	779		K	827
	D	732		H	780		L	828
	G	733		I	781	1540	A	829
	H	734		J	782		B	830
	I	735		K	783		C	831
	J	736		L	784		D	832
1532	A	737	1536	A	785		E	833
	B	738		B	786		F	834
	C	739		C	787		G	835
	D	740		D	788		H	836
	E	741		E	789		I	837
	F	742		F	790		J	838
	G	743		G	791		K	839
	H	744		H	792		L	840
	I	745		I	793	1541	A	841
	J	746		J	794		B	842
	K	747		K	795		C	843
	L	748		L	796		D	844
1533	A	749	1537	A	797		E	845
	B	750		B	798		F	846
	C	751		C	799		G	847
	D	752		D	800		H	848
	E	753		G	801		I	849
	F	754		H	802		J	850
	G	755		I	803		K	851
	H	756		J	804		L	852
	I	757	1538	A	805	1542	A	853
	J	758		B	806		B	854
	K	759		C	807		C	855
	L	760		D	808		D	856
1534	A	761		E	809		G	857
	B	762		F	810		H	858
	C	763		G	811		I	859
	D	764		H	812		J	860
	E	765		I	813	1543	A	861

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1543	B	862		F	910		J	958
	C	863		G	911		K	959
	D	864		H	912		L	960
	E	865		I	913	1565	A	961
	F	866		J	914		B	962
	G	867		K	915		C	963
	H	868		L	916		D	964
	I	869	1548	A	917		E	965
	J	870		B	918		F	966
	K	871		C	919		G	967
	L	872		D	920		H	968
1544	A	873		E	921		I	969
	B	874		F	922		J	970
	C	875		G	923		K	971
	D	876		H	924		L	972
	E	877		I	925	1566	A	973
	F	878		J	926		B	974
	G	879		K	927		C	975
	H	880		L	928		D	976
	I	881	1549	A	929		E	977
	J	882		B	930		F	978
	K	883		C	931		G	979
	L	884		D	932		H	980
1545	A	885		E	933		I	981
	B	886		F	934		J	982
	C	887		G	935		K	983
	D	888		H	936		L	984
	G	889		I	937	1567	A	985
	H	890		J	938		B	986
	I	891		K	939		C	987
	J	892		L	940		D	988
1546	A	893	1550	A	941		G	989
	B	894		B	942		H	990
	C	895		C	943		I	991
	D	896		D	944		J	992
	E	897		G	945	1568	A	993
	F	898		H	946		B	994
	G	899		I	947		C	995
	H	900		J	948		D	996
	I	901	1551	A	949		E	997
	J	902		B	950		F	998
	K	903		C	951		G	999
	L	904		D	952		H	1000
1547	A	905		E	953		I	1001
	B	906		F	954		J	1002
	C	907		G	955		K	1003
	D	908		H	956		L	1004
	E	909		I	957	1569	A	1005

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1569	B	1006		F	1054		J	1102
	C	1007		G	1055		K	1103
	D	1008		H	1056		L	1104
	E	1009		I	1057	1615	A	1105
	F	1010		J	1058		B	1106
	G	1011		K	1059		C	1107
	H	1012		L	1060		D	1108
	I	1013	1574	A	1061		G	1109
	J	1014		B	1062		H	1110
	K	1015		C	1063		I	1111
	L	1016		D	1064		J	1112
1570	A	1017		E	1065	1616	A	1113
	B	1018		F	1066		B	1114
	C	1019		G	1067		C	1115
	D	1020		H	1068		D	1116
	G	1021		I	1069		E	1117
	H	1022		J	1070		F	1118
	I	1023		K	1071		G	1119
	J	1024		L	1072		H	1120
1571	A	1025	1612	A	1073		I	1121
	B	1026		B	1074		J	1122
	C	1027		C	1075		K	1123
	D	1028		D	1076		L	1124
	E	1029		G	1077	1617	A	1125
	F	1030		H	1078		B	1126
	G	1031		I	1079		C	1127
	H	1032		J	1080		D	1128
	I	1033	1613	A	1081		E	1129
	J	1034		B	1082		F	1130
	K	1035		C	1083		G	1131
	L	1036		D	1084		H	1132
1572	A	1037		E	1085		I	1133
	B	1038		F	1086		J	1134
	C	1039		G	1087		K	1135
	D	1040		H	1088		L	1136
	E	1041		I	1089	1618	A	1137
	F	1042		J	1090		B	1138
	G	1043		K	1091		C	1139
	H	1044		L	1092		D	1140
	I	1045	1614	A	1093		E	1141
	J	1046		B	1094		F	1142
	K	1047		C	1095		G	1143
	L	1048		D	1096		H	1144
1573	A	1049		E	1097		I	1145
	B	1050		F	1098		J	1146
	C	1051		G	1099		K	1147
	D	1052		H	1100		L	1148
	E	1053		I	1101	1619	A	1149

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1619	B	1150		F	1198		F	1246
	C	1151		G	1199		G	1247
	D	1152		H	1200		H	1248
	E	1153		I	1201		I	1249
	F	1154		J	1202		J	1250
	G	1155		K	1203		K	1251
	H	1156		L	1204		L	1252
	I	1157	1624	A	1205	1628	A	1253
	J	1158		B	1206		B	1254
	K	1159		C	1207		C	1255
	L	1160		D	1208		D	1256
1620	A	1161		E	1209		E	1257
	B	1162		F	1210		F	1258
	C	1163		G	1211		G	1259
	D	1164		H	1212		H	1260
	G	1165		I	1213		I	1261
	H	1166		J	1214		J	1262
	I	1167		K	1215		K	1263
	J	1168		L	1216		L	1264
1621	A	1169	1625	A	1217	1629	A	1265
	B	1170		B	1218		B	1266
	C	1171		C	1219		C	1267
	D	1172		D	1220		D	1268
	E	1173		E	1221		E	1269
	F	1174		F	1222		F	1270
	G	1175		G	1223		G	1271
	H	1176		H	1224		H	1272
	I	1177		I	1225		I	1273
	J	1178		J	1226		J	1274
	K	1179		K	1227		K	1275
	L	1180		L	1228		L	1276
1622	A	1181	1626	A	1229	1630	A	1277
	B	1182		B	1230		B	1278
	C	1183		C	1231		C	1279
	D	1184		D	1232		D	1280
	E	1185		E	1233		E	1281
	F	1186		F	1234		F	1282
	G	1187		G	1235		G	1283
	H	1188		H	1236		H	1284
	I	1189		I	1237		I	1285
	J	1190		J	1238		J	1286
	K	1191		K	1239		K	1287
	L	1192		L	1240		L	1288
1623	A	1193	1627	A	1241	1631	A	1289
	B	1194		B	1242		B	1290
	C	1195		C	1243		C	1291
	D	1196		D	1244		D	1292
	E	1197		E	1245		G	1293

TABLE 20 (continued)

Bldg.	Unit	Code No.	Bldg.	Unit	Code No.	Bldg.	Unit	Code No.
1631	H	1294						
	I	1295						
	J	1296						
1632	A	1297						
	B	1298						
	C	1299						
	D	1300						
	E	1301						
	F	1302						
	G	1303						
	H	1304						
	I	1305						
	J	1306						
	K	1307						
	L	1308						

TABLE 21

QUESTIONNAIRE

(Please answer each question as completely and carefully as possible)

1. Who is the main purchaser of groceries in your household?

_____ wife
_____ husband
_____ son or daughter
_____ husband and wife together

2. How many persons reside in your household?

_____ adults
_____ children (if you have children, please answer Question 3)

3. Number of children in each age group

_____ 0 - 2 years
_____ 3 - 5 years
_____ 5 - 9 years
_____ 10 - 14 years
_____ 15 years or older

4. Last residence: city, town, and state (prior to East Lansing if different than East Lansing)

wife _____

husband _____

5. Income (approximate)

_____ $3,999 or less
_____ $4,000-$5,999
_____ $6,000-$7,499
_____ $7,500 or more

TABLE 21 (continued)

Please rate each product by number, using

1. Best
2. Second best
3. Least

If possible, please rate each product in each of the questions.

TOMATO SOUP

1. Color: which soup has the most appetizing color?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

2. Ingredients and consistency: which soup appears to have the better ingredients and consistency?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

3. Over-all appearance:

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

4. Taste or flavor: Which flavor do you prefer: most, second best, least?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Say: _____

5. Do you purchase tomato soup? _____
   If yes, what brand do you <u>usually</u> purchase? _____
   Why do you purchase that particular brand?

TABLE 21 (continued)

VEGETABLE SOUP

1. Color: which soup has the most appetizing color?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

2. Ingredients and consistency: which soup appears to have the better ingredients and consistency?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

3. Over-all appearance:

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

4. Taste or flavor: which flavor do you prefer: most, second best, least?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

5. Do you purchase vegetable soup? _____
   If yes, what brand do you usually purchase? _____
   Why do you purchase that particular brand?

TABLE 21 (continued)

PORK & BEANS: Only Pork & Beans in tomato sauce are being sampled. Please make your comparison among the products sampled only.

1. Color: which product appears to have the most appetizing color?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

2. Ingredients: which product has the better appearing ingredients?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

3. Over-all appearance:

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Tell: _____

4. Taste or flavor: which taste or flavor do you prefer: most, second best, least?

   Product X: _____
   Product Y: _____
   Product Z: _____
   Unable to Say: _____

5. Do you purchase pork & beans? _____
   If yes, what brand do you usually purchase? _____
   Why do you purchase that particular brand?

BIBLIOGRAPHY

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Books

Adams, J. Stacy. Interviewing Procedures, A Manual for Interviewers. Chapel Hill: The University of North Carolina Press, 1958.

Blankenship, Albert B. Consumer and Opinion Research, The Questionnaire Technique. New York: Harper and Brothers, 1943.

Cox, D. R. Planning of Experiments. New York: John Wiley & Sons, Inc., 1958.

Finney, D. J. An Introduction to the Theory of Experimental Design. Chicago: The University of Chicago Press, 1960.

Hobart, Donald M. (ed.). Marketing Research Practice. New York: The Ronald Press Company, 1950.

Spurr, William A., Kellogg, Lester S., and Smith, John H. Business and Economic Statistics. Homewood, Illinois: Richard D. Irwin, Inc., 1954.

Wallis, W. Allen. Statistics, A New Approach. Glencoe, Illinois: The Free Press, 1956.

Periodicals

Applebaum, William, and Spears, Richard F. "Controlled Experimentation in Marketing Research," The Journal of Marketing, XIV, No. 4 (January, 1950), pp. 505-517.

Blankenship, Albert B., et al. "Questionnaire Preparation and Interviewer Technique," A Sub-committee Report of American Marketing Association Committee on Marketing Research Techniques, The Journal of Marketing, XIV, No. 3 (October, 1949), pp. 399-433.

Boyajy, Joseph S., et al. "Tabulation Planning and Tabulation Techniques," A Sub-committee Report of American Marketing Association Committee on Marketing Research Techniques, The Journal of Marketing, XIII, No. 3 (January, 1949), pp. 330-355.

Cunningham, Ross M. "Customer Loyalty to Store and Brand," Harvard Business Review, XXXIX, No. 6 (November-December, 1961), pp. 127-137.

Gannon, Donald A. "Private Labels, Cooperative Advertising, Profits," Super Market Merchandising, XXIV, No. 5 (May, 1959), p. 113.

McNamara, Harley V. "The New Face of Distribution," Super Market Merchandising, XXV, No. 8 (August, 1960), p. 106.

"Brand Philosophy, The Von's Way," Super Market Merchandising, XXV, No. 7 (July, 1960), p. 45.

"Memo for Merchandisers," Super Market Merchandising, XXVI, No. 11 (November, 1961), p. 79.

"Results of Tests in Five Dillon Super Markets in Kansas," Progressive Grocer, XXXIX, No. 1 (January, 1960), pp. 48-62.

"Should Shelf Items Be Grouped by Brand or Commodity?," Super Market Merchandising, XXIV, No. 4 (April, 1959), p. 113.

"Where We Stand Today in Private Brand Merchandising," Progressive Grocer, XXXVIII, No. 8 (August, 1959), p. 48.

Unpublished Material

List of Grocery Stores and Percentage of Total Weekly Sales, (March, 1961). Obtained from the files of the Lansing State Journal.

Letter

Personal letter from Mr. W. B. Nixon, General Sales Manager, Campbell Sales Company, January 19, 1962.