PROCUREMENT PRACTICES AND PROCEDURES IN STUDENT UNION FOODSERVICE DEPARTMENTS IN LAND-GRANT UNIVERSITIES

By

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Bachelor of Science

Oklahoma State University

Stillwater, Oklahoma

1972

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
May, 1981

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STUDENT UNION FOODSERVICE DEPARTMENTS
IN LAND-GRANT UNIVERSITIES

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ACKNOWLEDGMENTS

The author wishes to express his appreciation to his major adviser, Dr. Lea L. Ebro, for her guidance and assistance throughout this research. Appreciation is also extended to Dr. Esther A. Winterfeldt, Dr. G. Baker Bokorney, and Dr. William D. Warde for their participation and invaluable assistance on the thesis committee.

A note of thanks is given to all of the universities that participated in the study. Special thanks is given to Winston Shindell, Director of the Student Union, Oklahoma State University, and to my colleagues, Delores Hickenbottom and Bob Richeson, for their patience, understanding, and encouragement through the difficult times.

Finally, my love and appreciation is extended to my parents, Mr. and Mrs. Melvin Schwake, without whom none of this would have been possible.

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CHAPTER I

INTRODUCTION

Foodservice has as its goal the production and service of acceptable quality food within the financial resources available (West, Wood, Harger, and Shugart, 1977). Effective allocation of resources including food, supplies, facilities, labor, time, and money involve organizational decision making. Recent changes have increased the number of different market forms of food available and the complexity of organizational decision making for food procurement (Unklesbay and David, 1977).

Total dollars spent on food away from home was $86 billion in 1977 with the total in 1981 expected to be $118 billion, or one out of every three food dollars spent (Roseman, 1978). This increase is associated with rising disposable income and changing lifestyles. This growth in eating away from home has had an impact on the demand for commodities of which institutions spend approximately 40 percent of their total expenditures. Because of this large amount of institutional buying, suppliers are trying to anticipate what item changes such as packaging and processing are needed in order to capture their share of the market (Von Dress, 1979).

Because of increasing food costs and changing food supplies, approaches and practices concerning food procurement are becoming more important (Morrison, 1976). Approximately 20-25 percent of operating budgets are allocated for the foodservice department, with 35 percent expended for supplies and equipment (Flanagan, 1968).

The extent to which decisions are made by the entire food staff distinguishes organizational decision making from individual decision making and provides the starting point for investigating food procurement decision making (Farevaag, 1973). Because of the complex technical nature of food, the importance of specific objectives within the school administration and the recognition of consumer demands, decisions about procuring food products should involve all concerned personnel.

Food procurement decisions are made through negotiations at the interface of the internal environment of the food facility and the external environment which includes food vendors and in some cases group purchasing organizations (Unklesbay, 1976). The exchanges between individuals, the formal and informal communication systems, the formalized procedure, and many other factors interact to produce organizational decisions about food procurement.

Depending on the organizational structure, the procurement process may utilize managerial techniques such as computerized ordering procedures, determining economic order quantities, and using forecasted information. With proper delegation, the foodservice administrator (purchaser) may concentrate on the non-routine aspects of procurement, including value analysis of food products within the foodservice systems and participation in new product development and research with the vendors (Shaw, 1974).

Purpose and Objectives

The purpose of this research was to study prevailing procurement practices and procedures utilized by Student Union Foodservice Departments of Land-Grant Universities. Specific objectives identified for

the study include:

1. To assess the relationship between procurement practices and procedures, and selected institutional variables.

2. To assess the relationship between procurement practices and procedures, and selected personnel variables.

3. To assess the relationship between food buyers' attitudes relative to vendors, procurement practices and procedures and other foodservice personnel, and selected personnel variables.

Hypotheses

The hypotheses postulated in this study were:

H_1: There will be no significant differences in food procurement practices and procedures utilized by food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected institutional variables:

a. campus enrollment,

b. number of units,

c. annual food sales.

H_2: There will be no significant differences in procurement practices and procedures utilized by food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected personnel variables:

a. sex of buyer,

b. years of experience of buyer,

c. education of buyer.

H_3: There will be no significant differences between attitudes of food buyers in Student Union Foodservice Departments of Land-Grant

Universities and selected personnel variables:

a. sex of buyer

b. years of experience of buyer

c. education of buyer

d. registered dietitian (R. D.) status

Assumptions

The assumptions basic to this research were:

1. All Student Unions in Land-Grant Universities have Foodservice Departments set up along similar structures.

2. All Student Unions in Land-Grant Universities have food buyers.

3. All respondents are knowledgeable about the procurement functions covered in the survey.

Limitations

This study was limited to only food buyers in Student Union Foodservice Departments of Land-Grant Universities in the continental United States. The sample may not be representative of similar samples in other surveys; consequently, generalizations which will be made from the study will only apply to the sample used.

Definition of Terms

The following terms were important to this research:

Land-Grant University - Institution of higher learning established by the federal government by an act of Congress in 1860 to deal with agricultural and mechanical emphasis on formal education (Moore, 1951).

Student Union, Student Center, University Center, or Commons - Building or facility used by the general university community which may provide one or more of the following activities: foodservice, recreation, meeting or conference facilities, or student activity centers. Student Union will be the term used throughout this report (ACUI, 1979).

Food Procurement or Food Purchasing - The planning, acquisition, storage, movement, and control of materials so as to optimize the usage of personnel, facilities, and capital while providing service in accordance with organizational goals (Tersine, 1976).

CHAPTER II

REVIEW OF LITERATURE

Procurement or purchasing is as old as man himself. It started when man first bartered or exchanged one of his possessions for a desired possession of a fellow human being (England, 1967). The literature reviewed relevant to the study includes: procurement procedures and tools, methods of procurement, and research related to food procurement.

Procurement Procedures and Tools

Procedures

According to Bloch (1966), the five conditions necessary for successful food purchasing are: good working environment, analyzing your methods, checking food cost, evaluating vendors, and keeping foodservice personnel informed of your activities. Bloch states that you should create an atmosphere of cooperation between all personnel affected by purchasing functions. A buyer should also review regularly the buying procedures and make improvements that will increase efficiency. Comparing your food cost with prices paid by similar institutions in the local areas can also be useful. Institutions may want to review and replace those vendors that fail to live up to established standards. Bloch states that a monthly report of activities that affect the budget will be helpful to those foodservice personnel concerned with the purchasing system.

A buyer must know how to organize a department and conduct the assigned functions. If data is not used or is more expensive to compile than its value, it should be eliminated (Kotschevar, 1975). In recent years, attention has been directed by managers to a concept labeled materials management. While this concept does not introduce new functions into the organization of a department, it does imply a regrouping of existing functions concerned with any materials handling under the purchasing department (England, 1967).

Tools

The technique of precisely defining purchasing needs and securing materials that satisfy them is called value analysis (Hannak, 1972; Kotschevar, 1975). Buyers first analyze the performance of items, then tabulate their useful and non-useful characteristics. Next, the buyer seeks to purchase those products having the highest number of useful characteristics. Kotschevar states that value is based on quality and price and is frequently indicated as V=Q/P. If P increases but Q does not, V is less. Conversely, if Q increases but P does not, V increases. The first step in implementing value analysis is that of recording accurate performance records of items as they go through the production cycle.

Economic ordering quantity (E.O.Q.) deals with the costs associated with inventory (Gee, 1975). Cost minimization is the basic criterion for the E.O.Q., according to Montag (1971). In the calculation of an order quantity that minimizes the total expected cost, the cost of holding one unit of an item, the cost of placing a purchase order and usage for each item are considered. Inventory control models

should reflect the characteristics of the system in which it is to be used while eliminating any increasing features. Montag (1971) concluded that:

> Any decision rule used in inventory management must serve, not control, the objectives and goals of the foodservice manager. Translation of the economic order quantity principle into operating procedures in combination with executive, managerial and staff judgment would provide information for sound decision-making (p. 356).

Methods of Procurement

Procurement procedures must be based on an institution's individual needs and factors such as administrative and financial policies of the firm, storage available and nearness of supply, costs of holding inventory, perishability, several market and economic conditions, production need, product and type of market (Kotschevar, 1975). State and municipal institutions often follow policy that purchases will be distributed to vendors in the locality, perhaps in rotation for a certain period of time or volume of business for each (West et al., 1977). The buyer is usually directed by the custom and tradition that are practiced in that part of the country. These buying practices can be classified as one of the following: 1) informal, 2) semi-formal, and 3) formal.

Informal Buying

Informal or open market buying is used by a majority of institutions and frequently is conducted through a sales person, over a telephone, or by other means of communication. Negotiations are mostly oral with the buyer requesting quotations on specific food items and for specific quantities and quality from one or more sources of supply.

The buyer makes a purchase decision after consideration of price in relation to quality, delivery, and other services offered (West et al., 1977).

Semi-Formal Buying

The semi-formal purchase method, called negotiated buying, may be used under any of the following circumstances: 1) time restricted, 2) the number of sellers must be limited, 3) the amount is small, 4) the product is highly perishable, 5) it is not practical to allow competition bidding, or 6) action must be fast (Kotschevar, 1975). Negotiation allows the buyer to scan the market among a group of vendors and make a quick selected purchase.

Formal Buying

Formal competitive bid buying is the procedure of submitting written specifications and quantity needs to vendors with an invitation to them to submit prices for the items listed (West et al., 1977). Bid invitation may be simple or elaborate, depending on how detailed a statement is needed between buyers and sellers. Important details should be included so that all parties understand the conditions and what is needed. These details are generally classified as: 1) general conditions and 2) specifications. Cooperative buying is usually thought of as formal buying because of the written policies issued for the members of the buying group (Kotschevar, 1975).

One-Stop Shopping

One-stop shopping, another procurement method, means purchasing

all food and supply needs from one source. Although there are advantages and disadvantages to this type of buying, Peddersen (1977) states that:

> One-stop food shopping will be the accepted and prevailing mode of purchasing before the end of the twentieth century. One-stop companies are likely to develop from the merger of several small purveyors. This trend can be seen in the merger of fresh produce with frozen produce houses who then pick up distribution of frozen entrees, baked goods, and meat lines, and then merge with a general groceries and canned goods purveyor.
>
> In almost any city of over 250,000 people, it is possible to purchase 75 percent or more of your needs from any of several large general variety purveyors. We are but a few short steps away from the time when these companies will realize the potential of one-stop shopping and, learning from the mistakes of the pioneers in the field, develop competitive one-stop shopping services in cities across the country (p. 24).

Research Related to Food Procurement

The literature is void of information relative to procurement practices and procedures of Student Union Foodservice Departments in Land-Grant Universities. Two research projects on procurement in health care institutions introduced variables pertinent to a study of procurement practices and procedures.

Morrison (1975) surveyed the purchasing practices and convenience food usage of small hospitals in the North Central Region. The resulting identification of factors influencing procurement decisions showed that such information can be gathered by a survey. The study by Morrison determined that the food departments in larger institutions tended to use more modern management practices, including written purchasing procedures, established food specifications, and purchasing by formal bid. Although this survey dealt with health care food

departments, many of the procurement practices and procedures were the same factors the researcher was interested in investigating in Student Union Foodservice Departments.

Farevaag (1973) identified the criteria used in food procurement in health care facilities which tended to facilitate organizational decision making. The criteria can be clarified by the following categories: 1) internal environment, 2) external environment, 3) technologies and personal skills, 4) formalized food procurement procedures, and 5) complexity of food procurement decisions. The study by Farevaag (1973) showed that organizational decision making techniques involving the use of current procurement concepts in business and industry facilitate effective food procurement decisions.

Summary

A review of literature showed that there is little information available on the subject of food procurement by large institutions. Such findings suggest a need for additional research because of the large impact that food purchasing has on the foods budget.

Hopefully, this study can be used to add to a body of knowledge which will be helpful to food buyers in developing more efficient procurement practices. Research is needed to describe the procurement practices and procedures of various institutions in the foodservice industry. Consequently, more research is needed to identify in detail those factors which produce an efficient and effective food procurement system.

CHAPTER III

METHOD

The material in this chapter is presented in four sections. Section one is a discussion of research design and section two describes the sample. Data collection which includes planning and development, instrumentation, and research procedure is described in section three, while the analyses of data are discussed in the last section.

Research Design

Descriptive status survey was the research design used in this study. A questionnaire was used to look at differences or relationships in the procurement practices and procedures of participants who responded to the survey. The descriptive characteristics used relate to the reader the characteristics of the data, i.e., range, central tendency, or average and variability (Fox, 1969).

Sample

The sample population in this study consisted of individuals employed as food buyers in Student Union Foodservice Departments of Land-Grant Universities in the continental United States. The list of Land-Grant Universities was taken from a membership list of the Association of College Unions International (ACUI, 1979).

Data Collection

Planning and Development

Planning and development was done during the fall, 1979, and the spring, 1980, semesters. Data collection procedures were determined and data analysis techniques appropriate to answer the research hypotheses were chosen.

Instrumentation

A questionnaire was selected as the research instrument. Questionnaires are generally used to obtain opinions, preferences, facts known to the individual respondent, and attitudes (Joseph and Joseph, 1979). An instrument was developed which would require respondents to choose from a pre-determined number of possible answers. In developing the questionnaire, actual procurement practices and procedures at the Oklahoma State University Student Union Foodservice Department were examined. In addition, two questionnaires from previous food procurement research (Farevaag, 1973; Morrison, 1975) were analyzed to discern if some of the questions were relevant to include in the present study. The first part of the questionnaire required the participants to describe procurement practices and procedures used in their foodservice departments. Biographical questions were included to provide a profile of the participants. The second part of the questionnaire dealt with attitudes of food buyers toward vendors, procurement functions, and other foodservice personnel in the Student Union Foodservice Department.

The research instrument was examined for content validity and clarity by a panel made up of graduate faculty of the Food, Nutrition

and Institution Administration and Statistics Departments of Oklahoma State University and dietitians on campus. The research instrument was then revised incorporating the suggestions made by the panel. The research instrument included 59 questions (Appendix A). Seventeen questions were relative to procurement practices and procedures (questions 3-5, 9-11, 13-15, 18-21, and 23-26), nine asked for biographical information about the respondents (questions 27-35), and 11 determined physical environment of the food department and the institution (questions 1, 2, 6-8, 22, 16, 12, 36-37b). The 37 questions required respondents to choose (or check) the most appropriate answer or to fill in as required. The remaining 22 questions were on the attitudes of food buyers and required a response in terms of scores: 4 - Always, 3 - Frequently, 2 - Infrequently, 1 - Never (Appendix A).

Procedure

Letters were sent by the Student Union Director at Oklahoma State University to the 47 other Student Union Directors in the Land-Grant Universities in the continental United States to introduce the researcher and to invite their food buyers to participate in the research investigation (Appendix A). The researcher and his faculty adviser also sent letters with the research instrument to the Student Union food buyers explaining briefly the research (Appendix A). Follow-up letters were later sent to non-respondents in early summer, 1980.

Forty-three food buyers returned completed questionnaires. One Student Union Director wrote that their facility did not have a food-service department, while three universities did not respond to the original request to participate in the research, or to the follow-up letters.

Data Analyses

Data collected were transcribed and processed onto computer cards for standard statistical analysis using the Statistical Analysis System (SAS) (Barr and Goodnight, 1972). Frequencies and percentages were generated to transform demographic and other variables into meaningful and usable information (Joseph and Joseph, 1979). Chi square values were determined to test the associations of selected variables.

CHAPTER IV

RESULTS AND DISCUSSION

The major research question that guided the investigator in this study was: What are the food purchasing practices and procedures of Student Union Foodservice Departments of Land-Grant Universities? Fifty-seven questions were developed and incorporated in a research questionnaire to organize a manageable response to this prime concern.

Presented here are descriptions of 1) characteristics of Land-Grant Universities with Student Union Foodservice Departments, 2) profile of Student Union food buyers,. 3) food procurement practices and procedures utilized in Student Union Foodservice Departments, and 4) attitudes of food buyers towards vendors, procurement functions, and other foodservice personnel in the department. Analyses of data in accordance with the hypotheses of the study will also be discussed.

Characteristics of Land-Grant Universities with Student Union Foodservice Departments

The campus enrollment of the 43 Land-Grant Universities which participated in the study varied from 10,000 to over 40,000 students. Nineteen of the universities have enrollments of 20,000 students or less, about the same number have from 20,000 to 39,999, and four universities have enrollments of over 40,000 students.

Almost all Student Unions in the Land-Grant Universities manage their own foodservice. Only three of the 43 participating universities have contract foodservice with management companies. About 60 percent (N=26) of the Student Unions have multi-unit operations, and 50 percent (N=22) provide meals to other agencies such as university residence halls, elderly feeding programs, meals-on-wheels, and preschool programs.

In 29 of the Student Unions, over 50 percent of the total meals served during the regular school days (Monday to Friday) were to students. Thirty-three of the universities indicated that less than 50 percent of the meals were served to faculty, while 27 universities claimed that 25 percent or less of the meals were served to individuals other than students or faculty.

Forty-one (98 percent) of the respondents indicated that they are required to meet budgeted food cost ranging from 30 to over 45 percent. Twenty-three of the universities have a food cost of 36 to 40 percent (Table I).

Sixty-five percent (N=27) of the participating institutions reported volume of food sales in excess of $1,000,000, while the remaining institutions have food sales ranging from $100,000 to $1,000,000. Although there may have been a trend in the last two decades to establish test kitchens and ingredient rooms as specialized units in foodservice institutions, these concepts are not prevalent in Student Union Foodservice Departments in Land-Grant Universities. Only eleven (27 percent) of the participating institutions have test kitchen facilities, while only four (9 percent) have ingredient rooms.

TABLE I

BUDGETED FOOD COST

Percent Food Cost	No. of Universities	Percent
30-35	1	2
36-40	23	56
41-45	13	32
45 or more	4	10
Total	41*	100

*Two universities did not indicate a budgeted food cost.

A major concern to many of the older institutions is the need for more refrigerated and frozen storage. Storage spaces are often reallocated and rearranged to accommodate items that need refrigeration, such as convenience food items. Twenty-seven (65 percent) of the participating institutions indicated that their refrigerated and frozen storage spaces were inadequate. In contrast, only 14 (34 percent) of the institutions reported that they have adequate refrigerated and frozen storage. Thirty-five of the 43 institutions indicated that they have adequate dry storage space.

Profile of Student Union Food Buyers

Seventy percent (N=28) of the food buyers in Student Union Food Departments in Land-Grant Universities are males and only 12 (30 percent) are females. The food buyers' ages range from 20 to over 60, with 50 percent in the 20 to 40 age group and 50 percent in the 41 to

over 60 age group. The total experience of the participants ranged from one year to over 20 years, with about one-half of the buyers in the 10 years or less category and the other half in the 11 to over 20 years category.

Twenty-five (62 percent) of the buyers have attained a bachelor's degree; five have either a master of science or master of business administration degree, while the rest have high school diplomas. Food buyers with baccalaureate or master's degrees indicated that their majors were in Hotel and Restaurant Administration (N=13), Institution Management or Business Administration (N=11), Food and Nutrition or Dietetics (N=4), and other areas (N=3).

The Student Union Food buyers belong to several professional groups. A majority of them belong to the National Association of College and University Food Service (NACUFS), and the National Restaurant Association (NRA) (Table II).

TABLE II

FOOD BUYERS' MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

Professional Association	No. of Food Buyers
National Association of College and University Food Service	30
National Restaurant Association	22
Association of College Unions--International	18
American Dietetic Association	7*
Other	2

*Five of the seven indicated that they are registered dietitians (R. D.).

A number of student union food buyers reported having attended several food shows during the past 12 months. Twenty-five of them have attended a distributors' food show, 20 have gone to a state restaurant food show, while 14 indicated having attended the National Restaurant Show. Nine buyers also indicated having attended other types of food fairs.

Approximately three-fifths of the Student Union food buyers indicated that they are under the direct supervision of the foodservice manager (N=24). Eleven of the respondents did not indicate who their supervisors are; however, six reported being supervised by either the Student Union Director or a dietitian.

Food Procurement Practices and Procedures in Student Union Foodservice Departments

A majority of the Student Union Foodservice Departments (N=36) have written policies governing the foodservice purchasing function. Twenty-four of the 43 participants have specifications for all food items, while 18 have specifications for some of the food items. Computers were utilized in food procurement by 10 of the 43 participating institutions.

About one-third of the institutions (N=13) participated in group purchasing with the state and/or the university residence halls foodservice. Food items purchased through group purchasing include canned items, frozen items, meat, bread, dairy products, and fresh produce. Many food items are procured through the central food stores or commissary of the universities. About 62 percent (N=26) of the institutions order canned items, frozen foods, meats, and fresh produce, while

one-third (N=15) order bread and dairy products from the university facilities.

Almost all (N=38) the institutions participating in the study use a bid system to procure food and other supplies. Bread, canned items, frozen foods, meats, and dairy products are generally purchased on bid in 30 to 35 of the institutions, while fresh produce is purchased on bid in 26 institutions. Purchasing by generic name instead of brand name is only allowed in six (15 percent) of the Student Union Food-service Departments.

A majority of the food items in 34 of the 43 institutions are procured from wholesalers. A few institutions purchase from food brokers, while some purchase food directly from food manufacturing companies (Table III).

TABLE III

NUMBER OF STUDENT UNIONS PURCHASING FOOD FROM WHOLESALERS, BROKERS, AND FOOD COMPANIES

	Sources of Food Items		
	Wholesalers	Brokers	Food Companies
Food Items	N	N	N
Canned goods	34	8	9
Frozen food	33	10	10
Meats	23	9	17
Bread	12	2	23
Dairy products	13	0	21
Fresh produce	33	4	1

Besides bread and dairy products, about one-half (N=20) of the respondents indicated that they receive deliveries two to three times per week. Eight of the institutions have deliveries only once a week, while 11 have deliveries four or more times per week. Eighty-five percent (N=33) of the institutions purchase food items from more than three vendors.

One-half (N=22) of the institutions purchase very few of their food products from local wholesalers, while about one-fourth (N=10) indicated that they purchase a majority of their supplies from local vendors. In comparison to three years ago, 23 institutions reported that they now purchase more frozen fruits and vegetables, while four institutions buy more oven-ready meats. Seventeen institutions claim that they are buying the same amount of frozen fruits and vegetables as they did three years ago, while nine indicated that they are buying the same amount of oven-ready meats.

A majority (N=37) of the institutions reported that samples of food items are received when requested for testing; however, three institutions mentioned that they request samples but few are available for testing. Almost all of the institutions (N=40) indicated that new food products are brought to their attention by either salespersons, food magazines, or food shows. Three-fourths of the institutions (N=30) learn about new products from food brokers, while 24 institutions indicated that new information gets to them by mail.

Attitudes of Food Buyers Toward Vendors, Procurement Practices and Procedures, and Other Foodservice Personnel

Questions 38 to 58 in the research questionnaire required that

respondents describe the extent to which each of a set of attitudinal statements apply to themselves using a 4-point scale: 4 - Always, 3 - Frequently, 2 - Infrequently, and 1 - Never.

Attitudes Toward Vendors

Of the 43 food buyers participating in the study, only 12 (29 percent) indicated that they frequently visit the vendor's food storage facilities, while 22 (54 percent) claimed to have visited infrequently the vendors' facilities (Table IV). Almost all of the respondents supply product specifications to vendors and have information about vendors such as processing, packaging, storage, and delivery methods. A majority of the food buyers also indicate having good working relationships with vendors, and inform vendors of product performance. Twenty-seven (63 percent) of the 43 food buyers tend to give preference to local vendors (Table IV).

Attitudes Toward Procurement Practices and Procedures

A majority (N=36 to N=39) of the 43 respondents indicated that they have clearly defined objectives for quality of menu items served and that they evaluate food improvement policies when menu pattern changes. They also often determine EOQ of frequently used items and use forecasted information to determine quantities of products to be ordered (Table V). Thirty-five of the food buyers also indicated that their previous work experience influenced their procurement decisions frequently or always. Eighty percent (N=34) of the respondents stated that they personally respect the objectives of the foodservice

TABLE IV

RESPONSES OF FOOD BUYERS TO STATEMENTS
RELATIVE TO VENDORS

Statements Relative to Vendors	Responses			
	Always (4)	Frequently (3)	Infrequently (2)	Never (1)
Food Buyers:	No. of Food Buyers			
1. Visit vendors' facilities	0	12	22	7
2. Supply product specifications to vendors	14	21	5	2
3. Have information about vendors' operatons	7	26	8	1
4. Give preference to local vendors	1	15	12	12
5. Have good working relationships with vendors	16	15	3	2
6. Inform vendors of product performance	10	23	9	-

TABLE V

RESPONSES OF FOOD BUYERS TO STATEMENTS RELATIVE TO PROCUREMENT PRACTICES AND PROCEDURES

Statements Relative to Procurement Practices and Procedures	Responses			
	Always (4)	Frequently (3)	Infrequently (2)	Never (1)
Food Buyers:	No. of Food Buyers			
1. Have clearly defined objectives for quality of menu items served	22	17	2	1
2. Conduct surveys of students' acceptance of new food products	1	15	18	8
3. Determine EOQ of frequently used items	22	14	4	2
4. Forecast quantities to be ordered	21	17	3	1
5. Use food procurement procedures similar to those used by university purchasing department	24	8	8	2
6. Previous work experience influences procurement decisions	15	20	1	-
7. Technical knowledge influences procurement decisions	14	20	1	1
8. Readily adjust to changes in market forms	9	21	3	2

TABLE V (Continued)

Statements Relative to Procurement Practices and Procedures	Responses			
	Always (4)	Frequently (3)	Infrequently (2)	Never (1)
9. Readily adjust to menu pattern	16	16	3	2
10. Evaluate food procurement policies when menu pattern changes	19	20	2	1
11. Personally respect the objectives of the foodservice department	13	21	6	1

department and that their technical knowledge influenced their procurement decisions. Thirty-two of the food buyers tended to use the same purchasing procedure as those used by the university purchasing department, and claimed to be able to readily adjust to changes in menu pattern of the foodservice department (Table V). About two-thirds of the respondents (N=30) claim that they readily adjust to changes in the market forms of foods needed by the foodservice department. Surveys to determine students' acceptance of new food products are infrequently conducted by 18 of the 43 respondents; however, 16 food buyers indicated that they conduct surveys frequently or always in their food departments (Table V).

Attitudes Toward Other Foodservice Personnel

A majority of the Student Union food buyers (N=36 to N=39) indicated that they often inform foodservice personnel about new food products from vendors, discuss procurement decisions with administrative staff, and that their input is solicited by the foodservice personnel in the development of product specifications (Table VI). Thirty-one of the 43 food buyers often set up test panels for new food products, while 28 claim that they consult the foodservice department before substituting menu items in their procurement orders (Table VI).

Testing of Hypotheses

H_1: There will be no significant differences in food procurement practices and procedures of food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected institutional

TABLE VI

RESPONSES OF FOOD BUYERS TO STATEMENTS RELATIVE TO OTHER FOODSERVICE PERSONNEL

Statements Relative to Other Foodservice Personnel	Responses			
	Always (4)	Frequently (3)	Infrequently (2)	Never (1)
Food Buyers:	No. of Food Buyers			
1. Set up taste panel for new food products	15	16	7	4
2. Input solicited by food service manager in developing product specifications	18	21	3	-
3. Consult foodservice department before substituting menu items	20	8	8	3
4. Discuss improvement decisions with foodservice administrative staff	26	11	3	1
5. Inform foodservice personnel about food products from vendors	23	13	5	-

variables:

a. campus enrollment

b. number of units

c. annual food sales

Chi square values were determined for the association between the variables procurement practices and procedures, and selected institutional variables. Results are presented in Table VII. Significant associations were found between the variables group purchasing and multiplicity of units ($p=0.03$), ordering by computer and campus enrollment ($p=0.10$), frequency of orders and multiplicity of units ($p=0.06$), food specifications and campus enrollment ($p=0.06$) and annual food sales ($p=0.09$), and testing of samples and annual food sales ($p=0.0001$) (Tables XI to XVI, Appendix C). Based on these six relationships of variables, the researcher failed to accept H_1. Multi-unit institutions tend to belong to group purchasing plans more often than non-multi-unit institutions. Computers are used in the ordering process more often at universities with large enrollments (20,000-40,000). Multi-unit institutions also receive fewer deliveries per week than single unit facilities. Institutions with enrollments of 40,000+ do not utilize written specifications, while those with less enrollment do. Institutions with annual food sales of $501,000-$1,000,000+ do have written specifications more often than those with less sales. Institutions with sales in excess of $751,000 will request samples more often than those with less than $751,000.

H_2: There will be no significant differences in procurement practices and procedures utilized by food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected

TABLE VII

CHI SQUARE DETERMINATIONS BETWEEN PROCUREMENT PRACTICES AND PROCEDURES AND SELECTED INSTITUTIONAL VARIABLES

Institutional Variables		Procurement Practices and Procedures: Group Purchasing	Ordering by Computer	Frequency of Orders	Written Purchasing Policies	Food Specifications	Testing of Samples	Bid System
	χ^2	5.22	6.36	12.71	4.26	7.54	4.69	1.52
Campus Enrollment	DF	3	3	12	3	3	2	3
	Prob	0.15	0.10	0.39	0.23	0.05	0.58	0.68
	χ^2	4.74	0.79	9.04	0.42	0.54	2.06	0.44
No. of Units	DF	1	1	4	1	1	2	1
	Prob	0.03	0.37	0.06	0.52	0.46	0.35	0.83
	χ^2	1.83	1.58	13.66	0.56	8.00	31.56	2.72
Annual Food Sales	DF	4	4	16	4	4	8	4
	Prob	0.76	0.81	0.62	0.97	0.09	0.0001	0.60

TABLE VIII

CHI SQUARE DETERMINATIONS BETWEEN PROCUREMENT PRACTICES AND PROCEDURES AND SELECTED PERSONNEL VARIABLES

Personnel Variables		Procurement Practices and Procedures						
		Group Purchasing	Ordering by Computer	Frequency of Orders	Written Purchasing Policies	Food Specifications	Testing of Samples	Bid System
Sex	χ^2	0.45	2.54	5.36	0.05	0.07	1.91	1.44
	DF	1	1	4	1	1	2	1
	Prob	0.50	0.11	0.25	0.82	0.78	0.39	0.23
Years of Experience	χ^2	1.11	4.50	12.77	1.35	0.08	1.91	3.42
	DF	4	4	16	1	1	2	1
	Prob	0.89	0.34	0.69	0.25	0.77	0.39	0.06
Degree	χ^2	0.23	0.104	3.73	0.42	0.46	4.52	8.55
	DF	2	2	8	2	2	4	2
	Prob	0.89	0.95	0.88	0.81	0.80	0.34	0.01

personnel variables:

a. sex of buyer

b. years of experience of buyer

c. education of buyer

Chi square values were determined for the association between the variables procurement practices and procedures, and selected personnel variables. Results are presented in Table VIII. Significant associations were found between the variables bid system and number of years experience of the food buyers ($p=0.06$), and between bid system and degree attained by the food buyers ($p=0.01$) (Table XVII and XVIII, Appendix C). Based on these two relationships of variables, the researcher failed to accept H_2. Buyers with 1 to 10 years experience utilize a bid system in purchasing a greater percentage of time than those with 11 to 20 years experience. Buyers with baccalaureate and master's degrees utilize a bid system more often than those with only high school diplomas.

H_3: There will be no significant differences between attitudes of food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected personnel variables:

a. sex of buyer

b. years of experience of buyer

c. education of buyer

d. registered dietitian (R. D.) status

Chi square values were determined for the association between the variables attitudes of food buyers toward selected statements, and selected personnel variables. Results are presented in Table IX. Significant associations were found between the variables surveys of

TABLE IX

CHI SQUARE DETERMINATIONS BETWEEN FOOD BUYERS' ATTITUDES AND SELECTED PERSONNEL VARIABLES

Personnel Variables		Attitudes of Food Buyers: Surveys of Student Acceptance of New Food Products	Food Buyers Have Input in Prod. Specs.	Local Vendors are Preferred	Technical Knowledge Influenced Procurement Decisions	Food Buyers Adjust to New Market Forms
	χ^2	0.13	1.39	3.48	0.87	0.10
Sex	DF	1	1	1	1	1
	Prob	0.72	0.24	0.06	0.35	0.75
	χ^2	7.28	2.93	0.45	0.13	0.17
Years of Experience	DF	1	1	1	1	1
	Prob	0.007	0.08	0.50	0.72	0.67
	χ^2	0.90	1.64	7.18	6.31	0.98
Degree	DF	2	2	2	2	2
	Prob	0.64	0.44	0.03	0.04	0.61
	2	0.01	0.43	0.95	0.19	3.31
R. D. Status	DF	1	1	1	1	1
	Prob	0.92	0.50	0.33	0.66	0.06

student acceptance of new food products and number of years of experience of the food buyers (p=0.007), food buyers' input in the development of product specifications and number of years of work experience (p=0.08), preference for local vendors and sex (p=0.06), preference for local vendors and attainment of degree (p=0.03), technical knowledge influence on procurement decisions and attainment of degree (p=0.04), and food buyers' ease of adjustment to new market forms and registered dietitian's status (p=0.06) (Tables XIX-XXIII, Appendix C). Again, as in H_1 and H_2, when only these six relationships of variables are examined, the researcher failed to accept H_3. Buyers with 11 to 20 years experience conduct student acceptance surveys more often than those with less experience. Food buyers do have input in the development of product specifications, regardless of amount of experience. Male buyers give preference to local vendors more often than female buyers. Buyers with baccalaureate or master's degrees show a preference for giving local vendors business more often than buyers with high school diplomas or advanced degrees. Buyers who are not registered dietitians are more likely to not adjust to new market forms of food products than buyers who are registered dietitians (Tables XVIII-XXIII, Appendix C).

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The purpose of this research was to study the prevailing procurement practices and procedures utilized by Student Union Foodservice Departments in Land-Grant Universities in the continental United States. Three hypotheses were postulated for the research, as follows:

H_1: There will be no significant differences in food procurement practices and procedures utilized by food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected institutional variables.

H_2: There will be no significant differences in food procurement practices and procedures utilized by food buyers in Student Union Foodservice Departments in Land-Grant Universities based on selected personnel variables.

H_3: There will be no significant differences between attitudes of food buyers and selected personnel variables.

A review of literature showed that there was limited information on food procurement practices and procedures utilized in fooservice institutions. Because of the impact of food procurement on the foodservice departments' budget, it is imperative that research be conducted to identify prevailing procurement practices and procedures which will be helpful to food buyers in the foodservice industry.

The research design used was the descriptive status survey. A 58-item questionnaire was developed to obtain the data. Seventeen questions

were relative to procurement practices and procedures, 11 were on the physical environment of the foodservice department and the university, nine were on biographical information of the respondents, and 21 items were on the food buyers' attitudes. The sample consisted of 43 food buyers in Student Union Foodservice Departments in Land-Grant Universities in the continental United States.

Characteristics of Land-Grant Universities with Student Union Foodservice Departments

About one-half of the universities studied have enrollments of 20,000 or less students and the other half have enrollments from 20,000 to 39,999. Only four institutions out of 43 indicated an enrollment of over 40,000 students. Almost all Student Unions (N=40) in the Land-Grant Universities manage their own foodservice, with three institutions having contract foodservice. Twenty-six of the 43 Student Unions have multi-unit operations and 22 (50 percent) provide meals to university residence halls, elderly feeding programs, meals-on-wheels, and pre-school programs. Over 50 percent of the meals in 29 universities were served to students. In 33 universities, less than 50 percent of the meals were served to faculty, while 27 institutions indicated that 25 percent or less of the total meals were served to individuals other than students or faculty.

Ninety-eight percent (N=41) of the respondents have budgeted food cost and over half of them have a budget of 36 to 40 percent. Volume of sales varied with 27 universities reporting sales in excess of $1,000,000. Eleven of the institutions have test kitchen facilities, while only four have ingredient rooms.

Thirty-five of the 43 institutions indicated that they have adequate storage space. In contrast, only 14 reported they have adequate refrigerated and frozen storage.

Profiles of Student Union Food Buyers in Student Union Foodservice Departments in Land-Grant Universities are predominantly male (70 percent). About one-half the respondents were in the age range of 20 to 40, while the remaining half were in the 41 to over 60 range. One-half of the food buyers have work experience of 10 years or less, and the other half have work experience from 11 to over 20 years.

Almost two-thirds of the food buyers have baccalaureate degrees (N=25) or a master of science/master in business administration diplomas (N=5). The remaining food buyers reported having attained high school diplomas. Food buyers with degrees indicated that their majors were either in hotel and restaurant administration, institution management, or business administration. About two-thirds of the food buyers belong to NACUFS, while about one-half belong to NRA and ACUI. Seven belong to the American Dietetic Association, and five of them have R. D. status. A number of the respondents reported having attended several food shows in the last 12 months. About three-fifths (N=24) of the food buyers indicated that they were supervised by the Student Union Foodservice Manager.

Food Procurement Practices and Procedures in Student Union Foodservice Departments

Written policies governing the food procurement existed in 36 of the 43 universities; however, only 24 institutions have specifications

for all food items, and 18 have specifications for some food items. Only about one-fourth of the respondents utilize computers as tools in food procurement. Thirteen of the universities participated in group purchasing with the state and/or the university residence halls foodservice. A bid system was utilized by almost all (N=38) of the institutions to procure food and other supplies. Out of 43, only six institutions were allowed to purchase food by generic instead of brand names.

In 34 of the 43 universities, a majority of the food items were purchased from wholesalers, and deliveries were received two to three times per day in half of the universities. Over two-thirds of the institutions purchase food items from more than three vendors, and 22 institutions indicated they purchase very few items from local wholesalers. About half the respondents claim that they are now purchasing more frozen fruits and vegetables compared to three years ago.

A majority of the institutions reported that samples of food items are received when requested in testing, and that new products are brought to their attention by either the sales person or food brokers, or they see them in food magazines and at food shows.

Attitudes of Food Buyers Towards Vendors, Procurement Practices and Procedures, and Other Foodservice Personnel

In general, a majority of the food buyers have good working relationships with vendors. About half of the respondents visit the vendors' facilities infrequently; however, almost all of them supply product specifications to vendors, and have information about the

vendors' operation. Only 27 food buyers reported that they tend to give preference to local vendors.

Almost all of the respondents have clearly defined objectives for quality of menu items served, and they indicated that they evaluate food procurement policies when menu pattern changes. Procurement tools often used were EOQ and forecasted information to determine quantities of food needed. Thirty-four of the food buyers stated that they personally respect the objectives of the foodservice department and that their technical knowledge influences their procurement decisions. The respondents generally follow the procurement procedures used by the university purchasing department, and claim that they can easily adjust to changes either in menu patterns or market forms of food. Surveys to determine students' acceptance of new food products were conducted in about two-thirds of the universities (N=34).

Almost all of the Student Union food buyers inform foodservice personnel in their departments about new food products, discuss procurement decisions with them, and have input in developing product specifications for the department. Food buyers also involve foodservice personnel in taste panel sessions for new products, and before substitutions are done on menu items.

Testing the Hypotheses

Chi square values were determined for the association between the variables: 1) procurement practices and procedures, and selected institutional variables, 2) procurement practices and procedures, and selected personnel variables, and 3) food buyers' attitudes and selected personnel variables.

Results that were significant are presented in Table X. Procurement practices and procedures that were significantly different based on campus enrollment were ordering by computer and the development of food specifications, while group purchasing and frequency of orders were affected by multiplicity of units. Food specifications and testing of samples were significantly different based on volume of food sales. Bid system usage was based on the food buyers' educational attainment and number of years of experience.

The food buyers' attitudes toward surveys of student's acceptance of new products and their input into the development of product specifications were influenced by their work experience. Their attitudes towards giving the local vendors preference, and beliefs that technical knowledge influences procurement decisions were different based on the degree attained. Sex affected preference for local vendors, while R. D. status affected the food buyers' attitudes to adjust easily to new market forms of food.

Recommendations

The results of this study indicate a need for identifying prevailing procurement practices and procedures, not only in Student Union Foodservice Departments of other colleges and universities, but also in health care institutions as well as other types of foodservice systems. Based on these results, the following are recommended:

1. Independent variables (institutional and personnel variables), as well as dependent variables (procurement practices and procedures,

TABLE X

CHI SQUARE VALUES THAT WERE STATISTICALLY SIGNIFICANT

Institutional and Personnel Variables	Procurement Practices and Procedures					
	Group Purchasing	Ordering by Computer	Frequency of Orders	Food Specifications	Testing of Samples	Bid System
Campus Enrollment		p<0.10		p<0.05		
No. of Units	p<0.03		p<0.06			
Annual Food Sales				p<0.09	p<0.0001	
Sex						
Years of Experience						p<0.06
Degree						p<0.01
R. D. Status						

	Attitudes of Food Buyers				
	Surveys of Student Acceptance of New Food Products	Food Buyers Have Input in Prod. Spec.	Local Vendors are Preferred	Technical Knowledge Influenced Procurement Decisions	Food Buyers Adjust to New Market Forms
Campus Enrollment					
No. of Units					
Annual Food Sales					
Sex			p<0.06		
Years of Experience	p<0.07	p<0.08			
Degree			p<0.03	p<0.04	
R. D. Status					p<0.06

attitudes) need to be clearly stated, expanded, and ordered to facilitate answering the research questions.

2. Further studies might be conducted to determine procurement practices and procedures that are effective in various foodservice systems, and what technical skills and attitudes of food buyers are required before effective procurement decisions can be made.

3. There is a need for the foodservice industry to enlarge and enrich the food buyers' job responsibilities. Food buyers should be allowed to use more discretion or judgment regarding the food procurement functions. Food buyers' technical knowledge and experience should be utilized by food managers in developing procurement policies, procurement practices and procedures, food specifications and utilization of minicomputers, automation, and other management tools.

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APPENDIXES

APPENDIX A

RESEARCH INSTRUMENT

DEPARTMENT OF FOOD, NUTRITION, AND INSTITUTION
ADMINISTRATION
OKLAHOMA STATE UNIVERSITY
FOOD PROCUREMENT STUDY

I. Please check the responses that best apply to your situation:

1. Is your food service department contracted to a food service management company?

___Yes ___No

2. Do you produce fully prepared meals for any other locations?

Check as many as apply and approximate number of meals per day.

___Meals-on-Wheels___ Residence Halls___
___Head Start___ Elderly Feeding Project___
___Preschool Programs___ Other (Specify)___
_____
_____

3. Does your food service department participate in a group-purchasing organization?

___Yes ___No

4. If answer to no. 3 is yes, please list members of the group.

_____
_____

5. Which products do you purchase through this group-purchasing organization?

___Canned Goods ___Dairy Products
___Frozen Foods ___Fresh Produce
___Meat ___Other (Specify)
___Bread _____
_____
___All of the above

6. Is your food service department required to meet a budgeted food cost?

___Yes ___No

7. What is the budgeted food cost percentage in your food department?

___30-35 ___41-45
___36-40 ___Other (Specify)
_____

8. What are your annual food sales?

___$100,000 - $250,000
___$251,000 - $500,000
___$501,000 - $750,000
___$751,000 - $1,000,000
___$1,000,000 +

9. Are any food products for your department procured by computerizing ordering procedures?

___Yes ___No

10. Please check any of these food products ordered through the purchasing department in your university (central food stores, commissary, etc.).

___None are Ordered
___Canned Goods
___Frozen Foods
___Meat
___Bread
___Dairy Products
___Fresh Produce
___Fully Prepared Meals
___Other (Specify)
_____
_____

11. Where do you buy the following food products?

	From Wholesalers	From Brokers	Direct from Mfg.
Canned Goods	_____	_____	_____
Frozen Foods	_____	_____	_____
Meat	_____	_____	_____
Bread	_____	_____	_____
Dairy Products	_____	_____	_____
Fresh Produce	_____	_____	_____
Other (Specify) _____	_____	_____	_____

12. Do you have an ingredient room?

___Yes ___No

13. About how many times a week do you buy food products other than bread and milk from wholesalers?

___Once a week
___2 or 3 times
___4 or 5 times
___Over 5 times
___Other (Specify)
_____

14. From how many sources do you buy food products other than bread and milk?

___None
___One
___Two
___Three
___More than three

15. What proportion of your food products are purchased from a local wholesaler?

___Majority
___One-half
___Very few

16. How many square feet are allocated for:

___Dry Storage
___Frozen Storage
___Refrigerator Storage

17. Do you consider your storeroom space:

a. Dry	b. Frozen	d. Refrigerated
___ Inadequate	___	___
___ Adequate	___	___

18. Does the university have written policies governing the food service purchasing function?

___Yes ___No

19. Specifications are established for food supplies.

___All
___Some
___None

20. Samples of food supplies are requested for testing.

___Yes, samples are received when requested
___Yes, but few are available
___No

21. How are new food products brought to your attention?

___Salesmen
___Food Shows
___Magazines
___Food Brokers
___Mail
___Other (Specify)
_____

22. Do you have a test kitchen available?

___Yes ___No

23. A bid system is used for purchase of food supplies.

___Yes ___No

24. If answer to no. 23 is yes, which products are put on bid?

___Canned Goods
___Frozen Foods
___Meat
___Bread
___Dairy Products
___Fresh Produce
___Other (Specify)
_____

25. Are you allowed to purchase by:

a. Brand Name		b. Generic Name
_____	Yes	_____
_____	Sometimes	_____
_____	No	_____

26. Do you buy more of these than you did three years ago?

More	Same	Less	
_____	_____	_____	Frozen Fruits & Veg.
_____	_____	_____	Oven-Ready Meats
_____	_____	_____	Prepared Entrees
_____	_____	_____	Single-Service Tableware

27. Have you attended any food shows or demonstrations in the past 12 months?

___National Restaurant Show
___State Restaurant Show
___Distributor Food Show
___Other (Specify)
_____

28. The food buyer is under the direct supervision of which of the following?

___Student Union Director
___Foodservice Manager
___Dietitian
___Other (Specify)
_____

29. The age of the food buyer is:

___20-30
___31-40
___41-50
___51-60
___Over 60

30. The sex of the food buyer is:

___Male
___Female

31. Number of years of experience as food buyer is:

___1-5
___6-10
___11-15
___16-20
___Over 20

32. Are you a registered dietitian?

___Yes ___No

33. If the answer to no. 32 is No, which category below best describes you?

___College Graduate
___Foodservice Supervisor/Manager
___Cook/Manager
___Home Economist
___Other (Specify) _____

34. Check your highest educational degree and major:

Degree

___High School Diploma
___B.A./B.S.
___M.S./M.B.A.
___Other (Specify) _____

Major

___Dietetics
___Institutional Mgmt.
___Business Administration
___Hotel and Restaurant
___Food and Nutrition
___Other special training (Specify) _____

35. Which of the following professional memberships apply to you? (Check as many as applicable.)

___ACUI (Association of College Unions-International)
___NACUFS (National Association of College & University Food Service)
___American Dietetic Association
___NRA (National Restaurant Association)
___Other (Specify)_____

36. What percent of total meals prepared are served to the following groups on a Monday through Friday basis?

Students	Faculty	Others	
____	____	____	25% or less
____	____	____	50% or less
____	____	____	Over 50%

37. What is your on-campus enrollment?

___10,000 - 19,999
___20,000 - 29,999
___30,000 - 39,999
___Over 40,000

38. Is the Student Union a multi-unit operation with more than one building location?

___Yes ___No

II. Using a 4-point scale, please describe the extent that each of the following statements apply to your Student Union:

Score	Description
4	Always
3	Frequently
2	Infrequently
1	Never

___39. Does the food buyer visit the vendors' food storage facilities?

___40. Does the food buyer give food product specifications early enough to allow effective procurement decisions to be made about the specified products?

___41. Does the food buyer conduct surveys of students' acceptance of new food products when additional information is needed for food procurement decisions?

___42. Does the food buyer have information about vendors' operations such as: processing, packaging, storage, and delivery methods?

___43. Does the food buyer for menu items, which are frequently used, determine the most economical quantities to purchase?

___44. Does the food buyer use procedures for food procurement which are similar to those used by the university purchasing department?

___45. Does the food buyer use forecasted information to determine quantities or products to be ordered?

___46. Before they are accepted for use, are new food products tasted and scored by representatives from student union departments?

___47. Are local suppliers given preference in product selection?

___48. Does the food buyer have clearly defined objectives for the quality of the menu items served?

___49. Does the food buyer have good working relations with the vendors?

___50. Does the food buyer have input into food product specifications which are developed by foodservice personnel?

51. Does the food buyer influence food procurement decisions because of:

    ___Previous work experience
    ___Technical knowledge

___52. Does the food buyer, when market conditions change, substitute menu items without consulting the foodservice department?

53. Does the food buyer readily adjust to changes in:

    ___The market forms of food requisitioned by the foodservice department?
    ___The menu pattern of the foodservice department?

___54. Do you feel that food salesmen take enough time to demonstrate new food products to you?

___55. Does the food buyer comment about product performance to food vendors?

___56. Does the food buyer evaluate food procurement policies when menu patterns change?

___57. Does the food buyer personally respect the objectives of the foodservice department?

___58. Does the food buyer discuss decisions with the foodservice administrative staff who are concerned with food procurement?

___59. Does the food buyer give foodservice personnel information about the food products available from the vendors?

APPENDIX B

CORRESPONDENCE

May 14, 1980

Dear Colleague:

This is to introduce to you David Schwake, Foodservice Manager of the Student Union at Oklahoma State University, who is currently pursuing a master's degree in Food, Nutrition and Institutional Administration. The research project David has chosen to undertake is entitled, "Procurement Practices and Procedures in Student Union Foodservice Departments in Land-Grant Universities."

Kindly ask the food buyer or the person responsible for food procurement in your student union to complete the enclosed questionnaire. Your assistance and cooperation is very much appreciated.

Sincerely,

Winston Shindell
Director

WGS:brm

OKLAHOMA STATE UNIVERSITY • STILLWATER, OKLAHOMA 74078
(405) 372-4141

Oklahoma State University

Department of Food, Nutrition and Institution Administration

STILLWATER, OKLAHOMA 74074
(405) 624-5039

May 14, 1980

Dear Food Buyer:

I am currently employed by the Student Union at Oklahoma State University as Foodservice Manager. I am also pursuing a master's degree in Food, Nutrition and Institutional Administration, in which I have chosen to undertake a research project in the area of food procurement. The purpose of this research is to determine the prevailing food procurement practices and procedures of student union food departments in the land-grant universities in the United States. Hopefully, data from this study can provide useful information which can be utilized by food buyers not only in student union food departments but in other foodservice institutions as well.

Names of respondents and their universities will not be identified in the study. The code number is used only to assist the researcher in following up late responses. Results of this study will be shared with survey participants.

Thank you for you kind assistance and cooperation.

Sincerely,

J. David Schwake
Food Service Manager
Student Union and
Graduate Student, FNIA

Approved by: Lea L. Ebro, Ph.D.
Associate Professor

June 23, 1980

Dear Sir:

About three weeks ago you should have received a questionnaire for a study we are conducting at Oklahoma State University in the F.N.I.A. department. If you completed the questionnaire and have sent it back, thank you! However, we thought possibly you did not receive your copy and are enclosing another with this mailing. Please direct it to the person in charge of food purchasing for your Student Union.

Sincerely,

David Schwake
Food Service Manager
Student Union and
Graduate Student, FNIA

Encl.

OKLAHOMA STATE UNIVERSITY • STILLWATER, OKLAHOMA 74078
(405) 372-4141

APPENDIX C

CHI SQUARE TABLES

TABLE XI

CHI SQUARE TABLE SHOWING GROUP PURCHASING
BY MULTI-UNIT OPERATIONS

Group Purchasing Member	Frequency / Percent	Multi-Unit: Yes	Multi-Unit: No	Total
Yes		8	5	13
		20.00	12.50	32.50
No		7	20	27
		17.50	50.00	67.50
	Total	15	25	40
		37.50	62.50	100.00

Chi Square 4.748 DF = 1 Prob. = 0.0293

TABLE XII

CHI SQUARE TABLE SHOWING COMPUTER ORDERING
BY ON-CAMPUS ENROLLMENT

Ordering by Computer	Frequency / Percent	On-Campus Enrollment in Thousands: 10-20	20-30	30-40	40+	Total
Yes		1	3	2	2	8
		2.56	7.69	5.13	5.13	20.51
No		18	5	6	2	31
		46.15	12.82	15.38	5.13	79.49
	Total	19	8	8	4	39
		48.72	20.51	20.51	10.26	100.00

Chi Square 6.358 DF = 3 Prob. = 0.0955

TABLE XIII

CHI SQUARE TABLE SHOWING FREQUENCY OF ORDERS BY MULTI-UNIT OPERATIONS

Frequency of Orders per Week	Frequency / Percent	Multi-Unit: Yes	Multi-Unit: No	Total
1		6	2	8
		15.38	5.13	20.51
2-3		5	15	20
		12.82	38.46	51.28
4-5		4	2	6
		10.26	5.13	15.38
5-10		0	2	2
		0.00	5.13	5.13
10+		1	2	3
		2.56	5.13	7.69
Total		16	23	39
		14.03	58.97	100.00

Chi Square 9.035 DF = 4 Prob. = 0.0602

TABLE XIV

CHI SQUARE TABLE SHOWING WRITTEN FOOD SPECIFICATIONS BY ON-CAMPUS ENROLLMENT

Written Food Specifications	Frequency / Percent	On-Campus Enrollment in Thousands: 10-20	20-30	30-40	40+	Total
Yes		10	6	6	0	22
		25.64	15.38	15.38	0.00	56.41
No		9	2	2	4	17
		23.08	5.13	5.13	10.26	43.59
Total		19	8	8	4	39
		48.72	20.51	20.51	10.26	100.00

Chi Square 7.535 DF = 3 Prob. = 0.0567

TABLE XV

CHI SQUARE TABLE SHOWING FOOD SPECIFICATIONS BY ANNUAL FOOD SALES

Samples are Requested	Frequency / Percent	Annual Food Sales in Thousands of Dollars 100-250	251-500	501-750	751-1,000	1,000+	Total
Yes		0	3	2	1	18	24
		0.00	7.14	4.76	2.38	42.86	57.14
No		1	3	0	5	9	18
		2.38	7.14	0.00	11.90	21.43	42.86
Total		1	6	2	6	27	42
		2.38	14.29	4.76	14.29	64.29	100.00

Chi Square 7.972 DF = 4 Prob. 0.0926

TABLE XVI

CHI SQUARE TABLE SHOWING REQUEST OF SAMPLES BY ANNUAL FOOD SALES

Food Specifications	Frequency / Percent	Annual Food Sales in Thousands of Dollars 100-250	251-500	501-750	751-1,000	1,000+	Total
Yes		0	5	2	6	26	40
		0.00	11.90	4.76	14.29	61.90	95.24
No		1	1	0	0	0	2
		2.38	2.38	0.00	0.00	0.00	4.76
Total		1	6	2	6	27	42
		2.38	14.29	4.76	14.29	64.29	100.00

Chi Square 31.556 DF = 8 Prob. 0.0001

TABLE XVII

CHI SQUARE TABLE SHOWING BID SYSTEM USED
BY YEARS OF EXPERIENCE

Bid System Used	Frequency / Percent	Years of Experience 1-10	11-20	Total
Yes		20	16	36
		51.28	41.03	92.31
No		0	3	3
		0.00	7.69	7.69
Total		20	19	39
		51.28	48.72	100.00

Chi Square 3.421 DF = 1 Prob. = 0.0644

TABLE XVIII

CHI SQUARE TABLE SHOWING BID SYSTEM USED
BY EDUCATION DEGREE

Bid System Used	Frequency / Percent	Education Degree H.S.	B.S.	M.S.	Total
Yes		8	24	5	37
		20.00	60.00	12.50	92.50
No		3	0	0	3
		7.50	0.00	0.00	7.50
Total		11	24	5	40
		27.50	60.00	12.50	100.00

Chi Square 8.550 DF = 2 Prob. = 0.0139

TABLE XIX

CHI SQUARE TABLE SHOWING STUDENT ACCEPTANCE OF FOOD PRODUCTS BY YEARS OF EXPERIENCE

Surveys Student Acceptance of Food Products	Frequency / Percent	Years of Experience 1-10	11-20	Total
Yes		9	16	25
		22.50	40.00	62.50
No		12	3	15
		30.00	7.50	37.50
Total		21	19	40
		52.50	47.50	100.00

Chi Square 7.278 DF = 1 Prob. = 0.0070

TABLE XX

CHI SQUARE TABLE SHOWING FOOD BUYERS' INPUT INTO PRODUCT SPECIFICATION BY YEARS OF EXPERIENCE

Food Buyers Have Input into Product Specifications	Frequency / Percent	Years of Experience 1-10	11-20	Total
Yes		3	0	3
		7.50	0.00	7.50
No		18	19	37
		45.00	47.50	92.50
Total		21	19	40
		52.50	47.50	100.00

Chi Square 2.934 DF = 1 Prob. = 0.0867

TABLE XXI

CHI SQUARE TABLE SHOWING PREFERENCE FOR LOCAL VENDORS BY SEX

Local Vendors are Preferred	Frequency / Percent	Sex: Male	Female	Total
Yes		19	5	24
		50.00	13.16	63.16
No		7	7	14
		18.42	18.42	36.84
Total		26	12	38
		68.42	31.58	100.00

Chi Square 3.481 DF = 1 Prob. = 0.0621

TABLE XXII

CHI SQUARE TABLE SHOWING PREFERENCE FOR LOCAL VENDORS BY EDUCATION DEGREE

Local Vendors are Preferred	Frequency / Percent	Education Degree: H.S.	B.S.	M.S.	Total
Yes		4	18	1	23
		10.26	46.15	2.56	58.97
No		6	6	4	16
		15.38	15.38	10.26	41.03
Total		10	24	5	39
		25.64	61.54	12.82	100.00

Chi Square 7.175 DF = 2 Prob. = 0.0277

TABLE XXIII

CHI SQUARE TABLE SHOWING TECHNICAL KNOWLEDGE INFLUENCE OF PROCUREMENT DECISIONS BY EDUCATION DEGREE

Food Buyers Adjust to New Market Forms	Frequency / Percent	Education Degree H.S.	B.S.	M.S.	Total
Yes		6	19	2	27
		15.79	50.00	5.26	71.05
No		5	3	3	11
		13.16	7.89	7.89	28.95
Total		11			
		28.95	57.89	13.16	100.00

Chi Square 6.309 DF = 2 Prob. = 0.0427

TABLE XXIV

CHI SQUARE TABLE SHOWING FOOD BUYERS' ADJUSTMENT TO NEW MARKET FORMS BY REGISTERED DIETITIAN

Technical Knowledge Influenced Procurement Decisions	Frequency / Percent	Registered Dietitian Yes	No	Total
Yes		2	3	5
		5.56	8.33	13.89
No		3	28	31
		8.33	77.78	86.11
Total		5	31	36
		13.89	86.11	100.00

Chi Square 3.310 DF = 1 Prob. = 0.0689

VITA

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Candidate for the Degree of

Master of Science

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