A STUDY OF THE ROLES OF PACKAGING AS SEEN BY MANAGERS OF INDUSTRIAL LAUNDRY BUSINESSES

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Ned S. Neely

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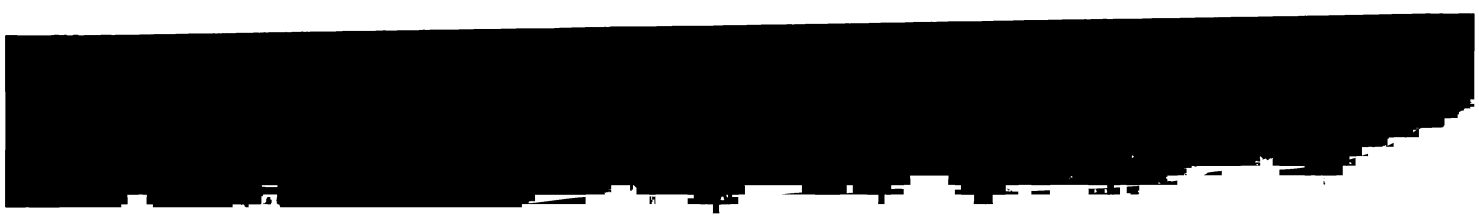

A STUDY OF THE ROLES OF PACKAGING AS SEEN BY MANAGERS OF INDUSTRIAL LAUNDRY BUSINESSES

by

Ned S. Neely

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ABSTRACT

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AS SEEN BY MANAGERS OF INDUSTRIAL
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Body of Abstract

This thesis represents the first phase of a research project being conducted for the Institute of Industrial Launderers by the School of Packaging at Michigan State University. The goal of the overall project is to define packaging so as to determine the roles of product protection, distribution convenience and psychological impact in packaging in the industrial laundry.

The first phase of the study, included in this paper, was a study of the roles of packaging as viewed by industrial laundry managers.

A questionnaire was written and mailed to the entire membership to find out how different laundries package and to get the managers' opinions of the functions performed by packaging in the industrial laundry.

The results showed that product protection was ranked as the most important package function by the majority of managers. This function was accomplished by the wrapping or bagging of a majority of garments.

The tying of these packages afforded a certain amount of distribution convenience.

Psychological impact seemed to be the least understood function, and the author questions the laundry practices in trying to accomplish it.

ACKNOWLEDGEMENTS

The author would like to thank Dr. J. W. Goff and Mr. Charles Humphrey for allowing the research results from the study for the Institute of Industrial Launderers to be used for this thesis. The author would further like to thank Dr. H. J. Raphael for his assistance throughout this research study and Dr. E. W. Smykay for his assistance with the questionnaire construction.

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INTRODUCTION

This thesis represents one phase of a research project being conducted for the Institute of Industrial Launderers by the School of Packaging at Michigan State University. The research was conducted under the multi-sponsor research program conducted by the School of Packaging. The author was employed by Dr. J. W. Goff, Professor of the School of Packaging, to conduct the research study for the Institute.

The Institute of Industrial Launderers is a national institute organized by laundry businesses engaged in the renting and cleaning of industrial work uniforms and coveralls. One committee of the Institute, the Research and Development committee, is responsible for conducting research into cleaning methods, garment materials, equipment, production techniques, and various other aspects of the industrial laundry business. Packaging is also included in the research scope.

The goal of the total investigation as established by Dr. Goff and the Institute representative, Mr. Charles Humphrey, was to determine the advantages or disadvantages of various types and levels of packaging in the industrial laundry. The first phase of the research study was to be a definition of packaging for the industrial laundry. This phase of the study consisted of: (1) trips to plants to familiarize the School of Packaging researchers with industrial laundry operations and packaging, (2) a survey of industrial laundry managers to determine reasons for packaging as they did, and (3) a survey of users of industrial laundry rental garments to get their opinions of packaging. The first two parts of this research study have been completed to date by the author and the

following thesis is an analysis of the data gathered.

In trying to define packaging in industrial laundry operations it was necessary to study the roles of product protection, distribution convenience, and psychological impact or sales appeal afforded by the actual package. Consideration of psychological aspects of packaging in the industrial laundry business is a fairly recent development as compared to the use of psychologically appealing packages in the domestic laundry business. In domestic laundries, men's dress shirts, for example, have been folded, banded, and bagged or boxed in fairly eye appealing packages for quite some time. On the other hand, industrial laundry work uniforms, until recently, were only folded and bound with twine.

A number of industrial laundry businesses do not handle rental uniforms exclusively. Some are also in the domestic laundry and dry cleaning business, and some are in the linen supply business. Nevertheless, they all rent similar industrial laundry items. Among these items are colored and white work uniforms (pants and shirts), coveralls, jackets, lab coats, slacks, and white dress shirts. They also rent some items that are not clothing, such as, entrance rugs, wiping cloths, and dust control cloths and mops.

All items handled by the laundry are rental items which the laundry periodically distributes and picks up from customers. The laundry washes these items, and in the case of clothing, they are pressed, folded, packaged, marked for distribution to the proper customer, and delivered.

Industrial laundry rental products are used by many types of businesses. Various industrial, retail, wholesale, and service businesses use their products. The rental charges for garments are either paid by business management, the employee, or shared by management and the employee.

There are three hundred and ninety-two industrial laundry businesses belonging to the Institute of Industrial Launderers in the United States and in a few foreign countries. Packaging is by no means standardized. The packaging for garments runs from folded garments with no packaging to folded garments in paper or plastic bags. Plastic films are fairly new to industrial laundry packaging, but are used extensively in some laundry operations.

The following research paper discusses the development of the questionnaire used in the study, and the results and conclusions from the analysis of the data.

CHAPTER I

EXPERIMENTAL PROCEDURE

Exploratory Research

The first phase of the research investigation included trips to various industrial laundry plants. These trips were taken to acquaint the author with the operation of an industrial laundry and to gain first-hand information on packaging to aid in the construction of a questionnaire which was sent at a later date to the membership.

Three plants were visited, two in Michigan and one in Ohio. In one laundry, bundles of folded colored uniforms were tied with twine only, while in the other laundries they were partially wrapped with paper and then tied. In all three laundries the folded white uniforms were completely wrapped in paper and then tied with twine. White dress shirts in all three laundries were packaged similar to domestic laundry packaging with collar supports and plastic bags.

The following is a summary of some of the laundry manager's comments on their packaging:

1. Product protection
   a. White garments are completely wrapped in paper to protect them from getting soiled, whereas other products (colored garments) do not need this type of protection.
   b. Protection from wrinkles due to handling is not a concern for most laundry items because of the market serviced. The customers do not care about garment condition.

2. Distribution convenience

   a. This is the more important function provided by packaging with respect to grouping and identification of products.

3. Psychological impact or sales appeal

   a. This is not necessary for the type of product being offered. Industrial laundry products, except for white dress shirts, are not of the quality to be packaged for psychological reasons.

All of the managers interviewed stated that packaging in the Michigan area was similar. The conclusion might be drawn that the other laundries in the area package for much the same reasons as those laundries interviewed.

The author knew in advance that other states package differently. For example, some plants in Oklahoma use plastics for all garments. It was important to the research study that these other states be sampled to find out their reason for packaging as they did. Since it was prohibitive to visit even a sample of the widespread membership, the School of Packaging recommended that a questionnaire be sent to all Institute members.

Questionnaire Objectives

The objectives of the questionnaire were: (1) to sample the members to get their opinions of packaging functions performed in the industrial laundry and to find out how they package, and (2) to use this information to study relationships between package function opinions and type of packaging; and to study relationships between such things as company size and location, type of packaging, and package function opinions.

Questionnaire Construction and Method

The questionnaire was constructed by the author in collaboration with Dr. H. J. Raphael and Dr. E. W. Saykay, both of Michigan State University, and Mr. Charles Humphrey of the Institute of Industrial Launderers.

The questionnaire was to be mailed to the Institute membership, so it was designed to be short and to have responses which would require a minimum amount of time in answering. Most questions were of the multiple choice type, but a few were open-end and dichotomous questions. Some of the questions were left open-end due to lack of information. Others were designed this way so that the respondents could have freedom in expression of their opinions.

The questionnaire was organized into three basic parts according to the objectives. The first part included questions for classification purposes as well as questions pertaining to methods of operation. The second part was designed to find out how the laundries packaged garments and other industrial laundry products such as wiping cloths and mops. The third part was set up to determine how laundry managers rank packaging functions in their role in industrial laundry packaging. A sample of the questionnaire is included in Table 1.

To introduce the questionnaire and to inform the membership about the purpose of the study, the chairman of the Research and Development Committee, Mr. Arnold Knapp, composed a letter on Institute letterhead that accompanied the questionnaire. A sample of this letter is included in Table 2.

Sample

The questionnaire was distributed to the total Institute membership

of 392. Most of these members are located throughout the United States. There are a few in Canada, Australia, and England

TABLE 1 - Institute of Industrial Launderers
packaging questionnaire

Please answer the following questions as they pertain to industrial laundry products and operations only.

Packaging, as used in this questionnaire, includes the banding of shirts, the tying, wrapping and tying, or bagging of industrial laundry products.

1. Approximately how many people do you employ at your home plant and branches, including routemen? _____

2. What geographical area do you service?
States _____ Principal Cities _____
_____ _____

3. Approximately how long has the laundry been handling industrial products? _____ years

4. Please list the three types of businesses that provide you with your largest dollar volume for industrial laundry products (i.e. manufacturing, retail, utilities, etc.).

5. Who actually makes payment for industrial garment service?
Please rank (1, 2, 3,) the following according to the most frequent occurence.
_____ management
_____ employee
_____ shared by management and employee

6. What are the most common complaints you receive from your customers (i.e. regarding quality, service, etc.)?

TABLE 1 - continued

7. If, as part of your normal service, you package any industrial garments, please check the appropriate box for those garments packaged with respect to their type of packaging.

Products	Collar or back inserts in shirt	Paper band around shirt	Plastic bag	Paper bag	Paper wrap & tied with twine	Tied with twine	Others (please list)
Colored industrial uniforms							
White industrial uniforms							
Coveralls, coats & jackets							
White uniform shirts							
White dress shirts							

8. Please check the following for packaging of slacks (dry cleaned).

_____ hanger
_____ plastic or paper bag over hanger and slacks
_____ slacks folded and placed in a paper or plastic bag
_____ slacks folded and wrapped with paper and tied with twine
_____ other (please list) _____

9. Do you normally tie, wrap, or bag separately the individual user's garments? _____ Yes _____ No

10. If the answer to number nine above was no, do you match uniform pants and shirts? _____ Yes _____ No

11. Are industrial laundry garments of the quality to justify special packaging considerations? _____ Yes _____ No

If Yes, which garments _____

TABLE 1 - continued

12. Please check the appropriate box for the industrial items that you handle according to the type of packaging they receive.

Item	Tied with twine	Plastic bag	Plastic wrap	No packaging	Other (please list)
Entrance rugs or mats					
Wiping cloths or towels					
Treated dust cloths					
Treated mops					

13. How are your packages identified for sorting to proper route and customer delivery?

14. Please rank (1, 2, 3) the following functions that can be performed by packaging, according to your opinion of their importance in the packaging of industrial laundry products.

_____ protection of items from damage caused by dirt and/or wrinkles, or protection of chemical treatment for treated mops and dust cloths

_____ provides a grouping function, and facilitates identification, handling and/or distribution

_____ provides a method for improving sales appeal through advertising on the package or providing an attractive package

TABLE 1 - continued

15. Please mark the reasons for the last change you made in your packaging. (mark more than one item, if applicable)

_____ to reduce unit costs of packaging
_____ to increase quality of products
_____ to increase sales appeal of the product
_____ to facilitate handling, distribution, identification, or grouping
_____ forced to because competition made a change
_____ other (please list) _____

16. If you think your packaging could be improved, please explain improvements you might make and reasons for them.

TABLE 2 - Letter used to introduce questionnaire

Dear Member:

Your Research and Development Committee has sponsored a project at the School of Packaging at Michigan State University, the only such school in the United States. The purpose of this project is to define the functions performed by packaging in the industrial laundry industry and how packaging practices can serve to improve the industry's marketing practices.

The School has assigned a graduate engineer exclusively to this study. The School indicates the need for a survey of present practices in the industry to develop the kind of information necessary to make sound judgments on behalf of our industry and individual members like yourself.

Two copies of a questionnaire, developed by the School, are enclosed with this letter. We urgently need your help to complete the questionnaire to get the complete value from this study. One copy of the questionnaire must be returned to the School in the self-addressed stamped envelope which is supplied for your convenience. The other copy may be kept for your files.

In addition, the School requests your help in supplying them with any packaging materials you presently use which contain any type of advertising copy. If you use printed Kraft or poly bags or sheets, shirt bands, etc., performing a double function of advertising and packaging, please forward samples to the following address:

Mr. N. S. Neely
Michigan State University
School of Packaging
East Lansing, Michigan 48823

Please return the completed questionnaire NO LATER THAN JANUARY 25, 1965. This would allow the School to meet certain time commitments. We believe that this questionnaire will help every member of the Institute to improve the industry's marketing practices. The complete results of this project will be reported to you. I would like to thank you in advance for your cooperation and help, and to emphasize to you that your answers to the questionnaire will be kept in strictest confidence by the University.

Cordially yours,

Arnold R. Knapp, Chairman
Research & Development Committee

Tabulation Plan

Due to the extensive cross tabulations desired of the questionnaire responses, the author decided to record the responses as they came in on electronic computer punch cards. Most of the questions would lend themselves to this type of tabulation. The open-end questions, on the other hand, would require a little more work during the categorizing stage, but could be adapted for punch card use also.

The use of punch cards for results tabulation was aided by the fact that the Michigan State University Electronic Data Processing group had available a program for the IBM 1401 computer that would tabulate and cross tabulate data that was coded onto punch cards.

CHAPTER II

QUESTIONNAIRE RETURN SUMMARY AND TABULATION

Return Summary

One hundred and twelve out of three hundred and ninety-two questionnaires were received for a return of 28%. The representativeness of the returned questionnaires appears very good. Returns were received from all parts of the country, and from laundries of many different sizes. The type of packaging done ranged from no packaging to packaging of all garments in plastic.

A measure of the representativeness is desirable for making inferences from the received questionnaires to the total Institute membership. The exploratory research pointed out that packaging might vary more according to the part of the country in which the laundry was located rather than according to plant size or some other variable.

A statistical analysis measuring the confidence interval for the percentage of responses received from the different sections of the country was performed.[1] As shown in Table 3 all sample 95% confidence limits constructed for each part of the country include the actual

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[1] formula taken from Harper Boyd and Ralph Westfall, Marketing Research - Text and Cases, (Illinois: Richard Irwin, 1956), p. 296.

$$S_p = \sqrt{\frac{pq}{n}}$$

S_p = standard error of a percentage
p = percentage of items possessing a given characteristic
q = 1-p
n = sample size

percentage for the entire membership, except for the west. The confidence level was increased to 99% to include the west's actual percentage. The foreign responses were so small that even a 99% confidence level was not large enough to include the actual percentage.

TABLE 3 - Confidence limits for geographical area of the sample

Part of Country	Percent of Total for Sample	Confidence Limits for 95% Confidence	Confidence Limits for 99% Confidence	Percent of Total for Entire Membership
Northeast	18%	11% - 25%	-	23%
North central	24	16 - 32	-	24
South	25	17 - 33	-	23
West	29	21 - 37	16% - 40%	19
Foreign	4	0 - 8	0 - 9	11
Total	100%			100%

What this analysis says is this - there is 95% confidence that the actual percentage of members in the northeast, for example, is within 11% and 25%. Since the actual percentages are known and most fall within the confidence limits established, the assumption can be made that different parts of the country, except for the foreign countries, are well represented by the sample. If, then, this is taken as a measure of the representativeness of the sample, the sample can be said to be representative of the total Institute membership in the United States.

Categorization of Returns

A number of the questions were of the open-end type and it was necessary to categorize these before they could be put onto computer punch cards.

The first question on number of employees was broken down as follows: from zero to seventy-five, seventy-six to one hundred and seventy-five, and over one hundred seventy-five. This particular breakdown allowed a large number of responses in each category so that any cross tabulations would have a good distribution of responses.

The responses to the second question on geographical location were separated into a section of the country as done in the Census of Business published by the United States Department of Commerce. The state breakdown is as follows:

Northeast - Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, and New Jersey

North central - Wisconsin, Michigan, Illinois, Indiana, Ohio, Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Missouri, and Kansas

South - Maryland, Washington D. C., West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas

West - Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Arizona, New Mexico, Washington, Oregon, and California

The third question for number of years handling industrial laundry products was broken down into three year categories: zero to ten years, eleven to twenty-five years, and over twenty-five years. This breakdown allowed a large number of responses in each category so the cross tabulations would have a good distribution of responses.

Question four, type of business serviced, was categorized according to the Census of Business breakdown. The industrial category includes manufacturing, mining, construction, etc.. Retail includes restaurants, grocery stores, automotive dealers, gasoline service stations, etc..

Wholesale includes petroleum bulk stations, dry goods, etc.. Service includes laundries, repair services, automotive repair and garages, etc.. Utilities was placed with services due to the similar type of work the people do who are in the utility installation and repair departments; and these are the ones who would use industrial laundry services.

The remaining open-end questions were classified according to the most frequent responses by the respondents. Question six, on most common customer complaints, was broken down into three categories; quality, service, and press quality or wrinkles due to handling. Quality includes such complaints as shrinkage, poor or no repairs, dirt on uniforms, etc.. Service includes garment replacement complaints, billing complaints, shortage of uniforms, etc.. The category of complaints on press quality and wrinkles was separated from the quality category since this might be an area where packaging could play an important role. The exploratory research study showed that some laundry managers feel that good press quality is unnecessary since their packaging doesn't protect the garment from wrinkles due to handling.

Question thirteen on package identification was categorized to point out the advantages of using "see-through" plastic to identify the garments without a ticket.

Responses to question sixteen, suggestions for changes in packaging, was broken down as follows:

1. Any mention of plastics for protection, distribution convenience, or psychological impact reasons,
2. Any mention of other materials for protection, distribution convenience, or psychological impact reasons,
3. Faster packaging methods, and

4. Other - including those that did not fit into the above categories, plus suggestions for lower cost materials.

Table 4 shows the above categories along with the corresponding questions.

TABLE 4 - Categorization of open-end questions

1. Approximately how many people do you employ at your home plant and branches, including routemen?

   0 - 75
   76 - 175
   Over 175

2. What geographical area do you service?

   Northeast -
   North central -
   South -
   West -
   Foreign -

3. Approximately how long has the laundry been handling industrial products?

   0 - 10
   11 - 25
   Over 25

4. Please list the three types of businesses that provide you with your largest dollar volume for industrial laundry products.

   Industrial -
   Retail and wholesale -
   Service and utilities -

6. What are the most common complaints you receive from your customers?

   Quality (shrinkage, repairs, dirt) -
   Service (replacement, billing, shortage) -
   Press quality or wrinkles due to handling -

13. How are your packages identified for sorting to proper route and customer delivery?

   Ticket on outside of package -
   Clothes markings (tied bundles) -
   Written on package (paper wrap) -
   Shows through package (plastic) -
   No reference to identification -

TABLE 4 - continued

16. If you think your packaging could be improved, please explain improvements you might make and reasons for them.

Any mention of plastics -
Any mention of other materials -
Faster packaging methods -
Other (other suggestions and lower cost considerations) -

Tabulation

All of the questions and responses were coded so they could be entered onto punch cards. All multiple choice and dichotomous questions were coded as they appeared on the questionnaire while the open-end questions were coded according to the categories established as explained in the previous section. One card was used for each questionnaire.

Each column of the card represented a question and the responses were coded from zero to nine within the column. Only one response could be punched per column. For example, column four represented question number one regarding number of employees, and a one punched in column four represented zero to seventy-five employees, a two represented seventy-six to one hundred seventy-five employees, while a three represented over one hundred seventy-five employees.

The computer essentially counts the responses in each column for each card according to a set of instructions. For example, if the cards were put into the computer and it was programed to count the responses in column four (number of employees), the following information would be produced for the total deck of one hundred and twelve cards:

Column 4:	Ones (0-75 employees)	- 31
	Twos (76-175 employees)	- 43
	Threes (over 175 employees)	- 32
	No answer	- 6
	Total card count	112

This same procedure can be used to cross tabulate responses by using another set of instructions.

Questionnaire Evaluation

The following evaluation of the questionnaire is included to provide a reference in questionnaire construction in order to provide an aid to the researcher who undertakes the second part of the Institute research project.

The overall responses to the questionnaire were as expected. Generally the respondents answered the questions without difficulty and in a manner that leads this researcher to believe that they understood the questions.

There are a couple of exceptions, however. A few respondents answered the question regarding packaging of garments according to all types of packaging they used, not just the most common method. In the future, questionnaires using this type of question should be more explicit.

The question regarding package identification was definitely in error. The value of the question was not lost, however, because a majority of the respondents answered it correctly. The question should have asked "by what means are your packages identified, etc.", instead of "how are your packages identified, etc.".

One final observation of the questionnaire is in connection with question fifteen about checking the reasons for the last change in packaging. This question should probably have been a ranking question like question fourteen regarding the ranking of the three package functions. This would have allowed for a better comparison between the answers for questions fifteen and fourteen. A comparison such as this could

show if the manager's thoughts on the functions performed by packaging were actually carried out in practice.

CHAPTER III

QUESTIONNAIRE RESULTS

The results of the questionnaire are summarized here according to the questionnaire objectives of: (1) finding out how different laundries package and getting their opinions of the functions of packaging performed in the industrial laundry, and (2) studying relationships of package functions and type of packaging, with such things as company size, location, etc.. These objectives are aimed at aiding in the definition of packaging for the industrial laundry.

The following analysis is broken down question by question with the cross tabulations following each summary of the responses to the question.

Question One Summary

Table 5 shows the results of the responses to the first question. The mean number of employees is 162, the standard deviation is 75, and the range is 25 to 1200.

TABLE 5 - Question 1 - Approximately how many people do you employ at your home plant and branches, including routemen?

Number of Employees	Number of Responses	Percent of Total
0 - 75	31	28%
76 - 175	43	38
Over 175	32	29
No answers	6	5
Total	112	100%

This particular unit of measure was chosen as directly relating to company size in terms of number of customers. This writer felt that the respondent would probably know the answer to this question rather than to his number of customers.

The results of this question were cross tabulated with the question on packaging functions (question 14) and type of garment packaging (question 7). Table 6 shows how respondents in each employee size category rated the packaging functions. For purposes of simplifying tabulation, only the package function marked as most important (ranked number one) was cross tabulated with each question.

TABLE 6 - Question 1 cross tabulated with packaging functions

Number of Employees	Packaging Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
0 - 75	17	55%	6	19%	8	26%	31	100	-
76 - 175	25	60	8	20	8	20	41	100	2
Over 175	18	56	11	34	3	10	32	100	-

Although the majority of responses for all employee categories favor product protection, a larger percentage of responses from smaller companies (0-75 employees) favor sales appeal than do the larger companies. On the other hand, companies of over 175 employees have a larger percentage of responses under distribution convenience than do the other employee categories.

Table 7 shows the cross tabulation with each garment and its type of packaging. For colored uniforms and coveralls, the majority are tied with twine for companies between 0 and 75, while the companies between 76 and 175 employees use more paper wrap. The companies over 175 employees use more plastic bags than the others[1].

[1] plastic bags, as used in this report, include heat sealed plastic wrap as well as preformed bags.

TABLE 7 - Question 1 cross tabulated with type of packaging

Garment and Type of Packaging	Number of Employees					
	0 - 75		76 - 175		Over 175	
	No.	%	No.	%	No.	%
Colored uniforms:						
Plastic bag	4	13%	6	14%	8	26%
Paper bag	-	-	4	10	2	5
Paper wrap	6	19	12	28	8	26
Tied	18	56	14	33	10	31
Other	3	10	7	15	4	12
Total	31	100%	43	100%	32	100%
White uniforms:						
Plastic bag	10	32	9	21	9	28
Paper bag	1	4	6	14	4	12
Paper wrap	10	32	17	40	15	48
Tied	5	16	3	7	2	6
Other	5	16	8	18	2	6
Total	31	100%	43	100%	32	100%
Coveralls and jackets:						
Plastic bag	2	6	7	16	9	28
Paper bag	-	-	-	-	1	3
Paper wrap	8	26	13	30	6	19
Tied	17	55	17	40	13	41
Other	4	13	6	14	3	9
Total	31	100%	43	100%	32	100%
White uniform shirts:						
Plastic bag	10	32	13	30	11	35
Paper bag	1	3	5	12	2	5
Paper wrap	14	45	17	40	12	39
Tied	3	10	-	-	3	9
Other	3	10	8	18	4	12
Total	31	100%	43	100%	32	100%
White dress shirts:						
Plastic bag	8	25	15	35	15	47
Paper bag	-	-	3	7	3	9
Paper wrap	6	19	4	9	4	13
Plastic bag and box	3	10	8	18	1	4
Box	4	13	5	12	3	9
Plastic bag and hanger	3	10	5	12	3	9
Other	7	23	3	7	3	9
Total	31	100%	43	100%	32	100%

For white uniforms and white uniform shirts all companies in all three categories use paper wraps and plastic bags in almost equal percentages.

White dress shirts are packaged in plastic bags by a greater percentage of companies with over 175 employees.

Overall, the greater majority of plastic bags, which are fairly new to colored uniform and coverall packaging, are being used by companies with over 175 employees. It is very possible that with the larger number of customers the larger companies have, that the volume of all garments handled is sufficiently large to bring economies through the use of plastic. In smaller companies, however, the volume might not be large enough to justify plastic for all garments due to cost considerations.

In trying to relate the type of packaging to the importance of the packaging functions for companies of different sizes it appears that the larger companies (over 175 employees) are using plastic for ease of distribution reasons as well as for protection. The smaller companies who favor sales appeal as well as product protection do not appear to be packaging significantly different than the other companies.

Question Two Summary

The results of the second question, Table 8, show that a good number of responses were received from all over the country. As the analysis showed in a previous section, these percentage returns are close to the actual distribution of members.

TABLE 8 - Question 2 - What geographical area do you service?

Part of Country	Number of Responses	Percent of Total
Northeast	20	18%
North central	27	24
South	28	25
West	33	29
Foreign	4	4
Total	112	100%

Table 9 shows the cross tabulation of part of the country with the three package functions. The majority of responses for the north central and the west favor product protection, whereas responses for the other regions of the country are more evenly distributed. The northeast favors product protection, but distribution convenience and sales appeal each have almost a third of the responses. The responses for the south favor product protection, but distribution convenience is also heavily favored. Even though the majority of responses for the west are under product protection, one-fourth of them are under sales appeal.

TABLE 9 - Question 2 cross tabulated with packaging functions

Part of Country	Packaging Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Northeast	8	40%	6	30%	6	30%	20	100%	-
North central	19	73	5	19	2	8	26	100	1
South	13	47	11	39	4	14	28	100	-
West	20	63	4	12	8	25	32	100	1

Note: foreign not included due to small number of responses

Table 10 shows the cross tabulation with type of packaging. This table shows some significant differences in type of packaging for each part of the country. In the west the majority of garments are wrapped in paper and tied with twine, while in the south the majority are placed in plastic bags. Most of the tying only is being done in the northeast and north central.

TABLE 10 - Question 2 cross tabulated with type of packaging

Garment and Type of Packaging	Part of the Country: N. E. No.	N. E. %	N. Central No.	N. Central %	South No.	South %	West No.	West %
Colored uniforms:								
Plastic bag	1	5%	4	15%	14	50%	1	3%
Paper bag	1	5	2	7	2	7	2	6
Paper wrap	2	10	8	30	-	-	16	49
Tied	13	65	10	37	11	39	7	21
Other	3	15	3	11	1	4	7	21
Total	20	100%	27	100%	28	100%	33	100%
White uniforms:								
Plastic bag	4	20	6	23	19	67	1	3
Paper bag	5	25	3	11	3	11	2	6
Paper wrap	5	25	13	48	1	4	22	67
Tied	4	20	2	7	2	7	1	3
Other	2	10	3	11	3	11	7	21
Total	20	100%	27	100%	28	100%	33	100%
Coveralls and jackets:								
Plastic bag	2	10	3	11	13	47	-	-
Paper bag	-	-	-	-	1	3	1	3
Paper wrap	-	-	7	26	1	3	18	55
Tied	13	65	14	52	10	36	6	18
Other	5	25	3	11	3	11	8	24
Total	20	100%	27	100%	28	100%	33	100%
White uniform shirts:								
Plastic bag	7	35	8	30	20	71	1	3
Paper bag	2	10	3	11	3	11	2	6
Paper wrap	5	25	13	48	1	4	23	70
Tied	1	5	-	-	2	7	2	6
Other	5	25	3	11	2	7	5	15
Total	20	100%	27	100%	28	100%	33	100%
White dress shirts:								
Plastic bag	8	40	11	41	10	36	9	28
Paper bag	-	-	3	11	2	7	1	3
Paper wrap	2	10	3	11	-	-	8	25
Plastic bag and box	3	15	4	15	2	7	4	11
Box	2	10	4	15	3	11	4	11
Plastic bag and hanger	1	5	-	-	6	21	4	11
Other	4	20	2	7	5	18	3	11
Total	20	100%	27	100%	28	100%	33	100%

Comparing these results with the previous package function results shows that the west might be using paper wrap for product protection reasons, while the south is using plastic for both protection and distribution convenience. Although the northeast is fairly evenly divided as to preference for a package function, they are packaging differently than the west and the south for the same function preference. The northeast and west both favor sales appeal but they are packaging differently. All this may suggest that launderers package according to their market demands or according to how competition packages, and these demands vary from region to region.

Question Three Summary

The distribution of responses to the length of time that the laundries have been handling industrial laundry products is in Table 11. The mean number of years is twenty-one, the standard deviation is fourteen, and the range is one to seventy three.

TABLE 11 - Question 3 - Approximately how long has the laundry been handling industrial products?

Number of Years	Number of Responses	Percent of Total
0 - 10	30	27%
11 - 25	43	38
Over 25	35	31
No answer	4	4
Total	112	100%

The cross tabulation of years and opinions of packaging functions is summarized in Table 12. As shown, the majority of companies handling industrial products zero to ten years and over twenty-five years favor product protection, while companies handling them eleven to twenty-five years are fairly evenly divided between protection and distribution convenience.

TABLE 12 - Question 3 cross tabulated with packaging functions

Number of Years	Packaging Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
0 - 10	22	73%	3	10%	5	17%	30	100	-
11 - 25	17	40	16	37	10	23	43	100	-
Over 25	22	67	7	21	4	12	33	100	2

Table 13, years cross tabulated with type of packaging, shows that companies handling industrial products zero to ten years use plastic more than the others, especially for uniforms and white uniform shirts. Although these companies, (zero to ten years) favor product protection over other package functions they could be using the plastic as a competitive tool to get some of the established companies' business.

Companies handling industrial products eleven to twenty-five years and over twenty-five years package much the same, although they rank the package functions differently.

TABLE 13 - Question 3 cross tabulated with type of packaging

Garment and Type of Packaging	Years Handling Industrial Laundry Products: 0 - 10 No.	0 - 10 %	11 - 25 No.	11 - 25 %	Over 25 No.	Over 25 %
Colored uniforms:						
Plastic bag	8	27%	6	14%	5	14%
Paper bag	4	13	1	2	2	6
Paper wrap	6	20	13	30	7	20
Tied	6	20	21	49	15	43
Other	6	20	2	5	6	17
Total	30	100%	43	100%	35	100%
White uniforms:						
Plastic bag	11	37	10	23	8	23
Paper bag	5	17	3	7	5	14
Paper wrap	7	23	21	49	13	36
Tied	2	6	4	9	4	11
Other	5	17	5	12	5	14
Total	30	100%	43	100%	35	100%
Coveralls and jackets:						
Plastic bag	7	23	7	16	5	14
Paper bag	1	3	-	-	1	3
Paper wrap	9	30	12	28	6	17
Tied	8	27	17	40	17	49
Other	5	17	7	16	6	17
Total	30	100%	43	100%	35	100%
White uniform shirts:						
Plastic bag	11	37	12	28	12	34
Paper bag	4	13	3	7	3	8
Paper wrap	11	37	20	47	11	31
Tied	-	-	4	9	2	7
Other	4	13	4	9	7	20
Total	30	100%	43	100%	35	100%
White dress shirts:						
Plastic bag	9	30	14	33	15	43
Paper bag	4	13	2	3	1	3
Paper wrap	5	17	5	12	4	11
Plastic bag and box	-	-	6	14	6	17
Box	1	3	6	14	5	14
Plastic bag and hanger	5	17	5	12	1	3
Other	6	20	5	12	3	9
Total	30	100%	43	100%	35	100%

Question Four Summary

The types of businesses providing the respondents with their largest dollar volume are well distributed over all types of businesses as shown in Table 14. Some of the specific types of businesses within each category are as follows: industrial - manufacturing and construction; retail and wholesale - dairies, bakeries, automotive agencies, gasoline service stations, and petroleum bulk stations; service and utilities - hotels, automotive repair services, and telephone, electric and gas utilities.

TABLE 14 - Question 4 - Please list the three types of businesses that provide you with your largest dollar volume for industrial laundry products.

Type of Business	Number of Responses	Percent of Total
Industrial	92	82%
Retail and wholesale	99	88
Service and utilities	67	60
No answer	4	4
Total	262[a]	234%[b]

[a] multiple answers [b] based on 112 responses

The cross tabulations for businesses serviced with packaging functions and type of packaging, Tables 15 and 16, show similar preferences for all businesses serviced.

TABLE 15 - Question 4 cross tabulated with package functions

	Package Functions								
	Product Protection		Distribution Convenience		Sales Appeal		Total	Total	No
Business Serviced	No.	%	No.	%	No.	%	No.	%	Answer
Industrial	52	58%	22	25%	16	17%	90	100	2
Retail	55	56	24	25	18	19	97	100	2
Service	40	62	15	22	11	16	66	100	1

TABLE 16 - Question 4 cross tabulated with type of packaging

Garment and Type of Packaging	Type of Business Serviced: Industrial No.	Industrial %	Retail No.	Retail %	Service No.	Service %
Colored Uniforms:						
Plastic bag	14	15%	15	15%	12	19%
Paper bag	7	8	7	7	5	7
Paper wrap	22	24	24	24	3	4
Tied	37	40	39	40	27	40
Other	12	13	14	[illegible]	20	30
Total	92	100%	99	100%	67	100%
White uniforms:						
Plastic bag	21	23	24	24	17	25
Paper bag	12	13	13	13	11	16
Paper wrap	39	42	41	42	22	33
Tied	9	10	8	8	7	10
Other	11	12	13	13	10	16
Total	92	100%	99	100%	67	100%
Coveralls and jackets:						
Plastic bag	15	16	15	15	12	19
Paper bag	2	2	2	2	2	3
Paper wrap	21	23	23	23	13	19
Tied	37	40	40	41	26	39
Other	17	19	19	19	14	20
Total	92	100%	99	100%	67	100%
White uniform shirts:						
Plastic bag	26	27	30	30	20	30
Paper bag	10	11	10	10	8	12
Paper wrap	37	40	41	42	22	33
Tied	6	7	5	5	4	6
Other	13	15	13	13	13	19
Total	92	100%	99	100%	67	100%
White dress shirts:						
Plastic bag	32	35	32	33	23	34
Paper bag	7	8	7	7	3	4
Paper wrap	13	14	13	13	9	13
Plastic bag and box	8	9	13	13	9	13
Box	13	14	12	12	8	12
Plastic bag and hanger	8	9	11	11	8	13
Other	11	11	11	11	7	11
Total	92	100%	99	100%	67	100%

Question Five Summary

Table 17 shows the results of the ranking of who makes payment for the garment service. The averages of the rankings show that payments shared by management and employees are ranked highest in occurence, and payments by management are ranked second in occurence. This particular item was included in the questionnaire because of the possibility that the type of packaging could vary according to who made the rental payments. This item will become more important in the cross tabulations discussed below.

TABLE 17 - Question 5 - Who actually makes payment for industrial garment services? Rank (1, 2, 3) the following according to the most frequent occurence.

Who Pays	Average of Rankings
Payments made by management	1.94
Payments made by employee	2.20
Payments shared by management and employee	1.84

For purposes of cross tabulation only the most important (ranked number one) responses to this question were tabulated. Table 18 shows the cross tabulation with packaging functions. Product protection is ranked as most important for those respondents being paid by management and the employee. When the cost is shared the responses are distributed over all functions.

TABLE 18 - Question 5 cross tabulated with package functions

	Package functions								
	Product Protection		Distribution Convenience		Sales Appeal		Total	Total	
Who pays	No.	%	No.	%	No.	%	No.	%	Answer
Management	31	67%	6	13%	9	20%	46	100%	1
Employee	17	63	8	30	2	7	27	100	-
Shared	15	41	12	32	10	27	37	100	-

A look at the other percentages shows an interesting result. Sales appeal is more important where management is paying, while distribution convenience is more important where the employee is paying. When the cost is shared, both sales appeal and distribution convenience are important. This might point out that a sales appealing package is important to get management to rent uniforms, but distribution convenience or package convenience features are important for the employee because he is handling the package.

Table 19 for type of packaging cross tabulated with who pays, shows that when the employee pays or when the costs are shared, plastic bags are used the majority of times. This might point out that the use of plastic is somewhat related to protection as well as to distribution convenience. On the other hand, when management pays, the majority of garments are either tied or wrapped in paper. A package wrapped in paper provides more protection than tying, but is it more sales appealing than a plastic bag? It could be to the laundry. A look ahead to Table 26 shows that for those respondents favoring sales appeal, the responses from those using paper wraps are greater than from those using plastic bags.

TABLE 19 - Question 5 cross tabulated with type of packaging

Garment and Type of Packaging	Who Pays for Service					
	Management		Employee		Shared	
	No.	%	No.	%	No.	%
Colored uniforms:						
Plastic bag	4	8%	8	30%	9	24%
Paper bag	5	11	2	7	-	-
Paper wrap	15	32	5	18	6	16
Tied	18	38	8	30	17	46
Other	5	11	4	15	5	14
Total	47	100%	27	100%	37	100%
White uniforms:						
Plastic bag	5	11	10	38	16	43
Paper bag	6	13	5	18	2	5
Paper wrap	23	48	7	26	12	33
Tied	6	13	2	7	2	5
Other	7	15	3	11	5	14
Total	47	100%	27	100%	37	100%
Coveralls and jackets:						
Plastic bag	4	8	6	22	10	27
Paper bag	1	2	1	4	-	-
Paper wrap	16	34	5	18	5	14
Tied	20	43	8	30	16	43
Other	6	13	7	26	6	16
Total	47	100%	27	100%	37	100%
White uniform shirts:						
Plastic bag	10	21	10	37	17	46
Paper bag	5	11	4	15	1	3
Paper wrap	22	47	7	26	14	37
Tied	3	6	3	11	-	-
Other	7	15	3	11	5	14
Total	47	100%	27	100%	37	100%
White dress shirts:						
Plastic bag	18	39	12	46	9	23
Paper bag	4	8	2	7	1	3
Paper wrap	11	24	-	-	4	11
Plastic bag and box	4	8	2	7	7	19
Box	2	5	5	18	5	14
Plastic bag and hanger	4	8	1	4	6	16
Other	4	8	5	18	5	14
Total	47	100%	27	100%	37	100%

Question Six Summary

The listing of customer complaints is fairly evenly distributed between all three complaint categories as shown in Table 20. As would be expected, the complaints cover all aspects of the garment rental service. The category most important to packaging is the third category on press quality and wrinkles. These two items were included in the same category since a customer might have some difficulty distinguishing between the two. As will be seen later, the type of packaging being used does not protect the product from wrinkles if the package is roughly handled. Most of the packaging materials used are of the flexible variety (eg. plastic film and wrapping paper), except for some boxes used for white dress shirts. A package handling test should probably be conducted in the future to better evaluate this particular problem.

TABLE 20 - Question 6 - What are the most common complaints you receive from your customers?

Complaints	Number of Responses	Percent of Total
Poor garment quality (shrinkage, dirt, etc.)	72	64%
Poor service (shortages, price, etc.)	62	55
Poor press quality and wrinkles due to handling	49	44
No answer	9	8
Total	192[a]	171%[b]

[a] multiple responses [b] based on 112 responses

The cross tabulation of complaints with package functions in Table 21 shows that the percentage of complaints is similar no matter what the preference for package functions. Also, the type of packaging in Table 22 shows no effect on the type of complaints. For all types of packaging the complaints for wrinkles is still listed. This is one aspect of product protection not being achieved by laundry packaging.

TABLE 21 - Question 6 cross tabulated with package functions

	Package Functions								
	Product Protection		Distribution Convenience		Sales Appeal		Total	Total	No
Complaints	No.	%	No.	%	No.	%	No.	%	Answer
Poor garment quality	43	60%	16	23%	12	17%	71	100	1
Poor service	36	60	17	28	7	12	60	100	2
Poor press or wrinkles	30	61	8	16	11	23	49	100	-

TABLE 22 - Question 6 cross tabulated with type of packaging

Garment and Type of Packaging	Complaints					
	Quality		Service		Press or Wrinkles	
	No.	%	No.	%	No.	%
Colored uniforms:						
Plastic bag	13	18%	9	15%	8	16%
Paper bag	4	6	6	10	2	4
Paper wrap	17	23	17	26	12	25
Tied	27	38	22	36	20	41
Other	11	15	8	13	7	14
Total	72	100%	62	100%	49	100%
White uniforms:						
Plastic bag	20	28	15	24	15	31
Paper bag	8	11	10	16	5	10
Paper wrap	27	38	25	41	19	39
Tied	11	15	10	16	10	20
Other	6	8	2	3	-	-
Total	72	100%	62	100%	49	100%
Coveralls and jackets:						
Plastic bag	14	19	10	16	8	16
Paper bag	1	2	2	3	1	2
Paper wrap	17	23	18	29	15	31
Tied	27	36	21	34	19	39
Other	13	18	11	18	6	12
Total	72	100%	62	100%	49	100%
White uniform shirts:						
Plastic bag	26	36	18	29	15	31
Paper bag	5	7	8	13	4	8
Paper wrap	27	38	25	41	20	41
Tied	4	6	3	4	4	8
Other	10	13	8	13	6	12
Total	72	100%	62	100%	49	100%
White dress shirts:						
Plastic bag	21	28	25	41	15	32
Paper bag	10	13	2	3	6	12
Paper wrap	11	15	6	10	5	10
Plastic bag and box	9	13	4	6	6	12
Box	9	13	7	11	7	14
Plastic bag and hanger	9	13	6	10	7	14
Other	3	5	12	19	3	6
Total	72	100%	62	100%	49	100%

Question Seven Summary

Question seven on type of packaging for garments is divided into two parts. The first part covers the use of shirt collar supports and paper shirt bands, while the second part covers the actual packaging before shipment.

Table 23 shows that paper bands are used alone for colored and white uniform shirts in the majority of cases, while for white dress shirts both collar supports and paper bands are used. The reason for this could be that white dress shirts are packaged similar to domestic white shirts for competitive reasons, or that the industrial laundry also handles domestic white shirts and packages both on the same production line.

Both of these packaging items are used for product protection reasons. The paper bands keep the shirts folded in place, and the collar supports protect the collar.

TABLE 23 - Question 7, Part 1 - If as part of your normal service, you package any industrial garments, please check the appropriate box for those garments packaged with respect to their type of packaging.

Type Garment	Collar or Back Inserts in Shirt		Paper Bands Around Shirt		Neither	
	No.	%	No.	%	No.	%
Colored industrial uniforms	18	16%	73	65%	37	33%
White industrial uniforms	19	17	69	62	39	35
Coveralls, coats, and jackets	-	-	9	8	102	91
White uniform shirts	27	24	74	66	30	27
White dress shirts	57	51	62	55	27	24

Note: The percentage figures run horizontally. Also multiple answers were allowed so the percentages are based on 112 responses.

Table 24 is a cross tabulation of paper bands and collar supports with the package functions. As shown in the table, there appears to be little relationship for the use of paper bands and collar supports with opinions of package functions. The non-users have the same opinions of the functions as the users.

TABLE 24 - Question 7, part 1, cross tabulated with package functions

Garment and Type of Packaging	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Colored uniforms:									
Collar supports	11	61%	2	11%	5	28%	18	100	-
Paper band	42	57	18	25	13	18	73	100	-
Neither	19	56	8	24	7	20	34	100	3
White uniforms:									
Collar supports	11	58	3	16	5	26	19	100	-
Paper band	38	55	19	28	12	17	69	100	-
Neither	23	62	7	19	7	19	37	100	2
Coveralls:									
Paper band	5	56	4	44	-	-	9	100	-
Neither	57	57	22	22	21	21	100	100	2
White uniform shirts:									
Collar supports	17	63	4	15	6	22	27	100	-
Paper band	43	58	19	26	12	16	74	100	-
Neither	15	54	6	21	7	25	28	100	2
White dress shirts:									
Collar supports	29	53	15	27	11	20	55	100	2
Paper band	36	60	14	23	10	17	60	100	2
Neither	14	52	8	30	5	18	27	100	-

Table 25 shows a breakdown of type of packaging for each category of garments. The majority of colored uniforms are tied only or wrapped in paper. Almost the same percentages of coveralls are tied only or wrapped in paper. On the other hand, the majority of white uniforms are packaged with paper wraps or plastic bags. The same is true of white uniform shirts. This result shows that white garments are packaged more for protection than colored garments. This result is expected, since the white garments would show dirt more easily than colored garments. It is interesting to note, however, that 49% of the respondents package colored uniforms with a protective cover (plastic bags - 19%, paper bags - 6%, tied paper wrap - 24%), whereas 46% use no protective cover (tied only - 38%, partial wrap - 6%, no packaging - 2%). So, even though colored uniforms are not packaged for protection as much as white uniforms, the results show that responses are split about fifty-fifty for covering colored uniforms and not covering colored uniforms. This same comparison could be made for coveralls and the result would be similar.

White dress shirts are packaged for protection by all respondents handling this garment. The largest percentage use plastic bags alone or in combination with boxes and hangers. Here again, as with collar supports, the reason for the extensive use of plastics could be to remain competitive with domestic laundries who use a lot of plastic, or that the laundry also handles domestic white shirts and packages both on the same production line.

Table 26 shows the cross tabulation of the types of packaging with the opinions of the package functions. For all types of packaging, product protection is rated as most important. Those respondents using plastic bags generally rated distribution convenience second to protection, while those using paper wraps generally rated sales appeal second to protection.

TABLE 25 - Question 7, Part 2 - If as part of your normal service, you package any industrial garments, please check the appropriate box for those garments packaged with respect to their type of packaging

Type of Garment	Type of Packaging: Plastic Bag No.	%	Paper Bag No.	%	Paper Wrap and tied with Twine No.	%	Tied with Twine Only No.	%	Partial Paper Wrap and Tied No.	%	No Packaging No.	%	Other No.	%	No Answer No.	%	Total No.	Total %
Colored uniforms	21	19%	7	6%	27	24%	43	38%	7	6%	2	2%	4	4%	1	1%	112	100%
White uniforms	31	28	13	12	43	38	10	9	6	5	2	2	5	4	2	2	112	100
Coveralls and jackets and coats	20	18	2	2	27	24	44	39	-	-	5	4	13	12	1	1	112	100
White uniform shirts	37	33	10	9	44	39	6	5	4	4	2	2	6	5	3	3	112	100

Type of Garment	Type of Packaging: Plastic Bag No.	%	Paper Bag No.	%	Paper Wrap and tied with Twine No.	%	Plastic Bag and Box No.	%	Box only No.	%	Plastic Bag and Hanger No.	%	Other No.	%	No Answer No.	%	Total No.	Total %
White dress shirts	39	35%	7	6%	15	13%	13	12%	13	12%	11	10%	4	4%	10	8%	112	100%

TABLE 26 - Question 7, part 2, cross tabulated with package functions

Garment and Type of Packaging	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Colored uniforms:									
Plastic bag	12	57%	7	33%	2	10%	21	100	-
Paper bag	5	72	2	28	-	-	7	100	-
Paper wrap	17	65	3	12	6	23	26	100	1
Partial paper wrap	4	57	2	29	1	14	7	100	-
Tied	22	52	10	24	10	24	42	100	1
White uniforms:									
Plastic bag	17	55	10	32	4	13	31	100	-
Paper bag	8	62	4	31	1	7	13	100	-
Paper wrap	24	59	7	17	10	24	41	100	2
Partial paper wrap	3	50	2	33	1	17	6	100	-
Tied	6	60	2	20	2	20	10	100	-
Coveralls and jackets:									
Plastic bag	14	70	5	25	1	5	20	100	-
Paper bag	2	100	-	-	-	-	2	100	-
Paper wrap	17	65	4	15	5	20	26	100	1
Partial paper wrap	3	60	1	20	1	20	5	100	-
Tied	21	49	12	28	10	23	43	100	1
White uniform shirts:									
Plastic bag	19	51	12	33	6	16	37	100	-
Paper bag	7	70	2	20	1	10	10	100	-
Paper wrap	24	57	7	17	11	26	42	100	2
Tied	4	67	1	17	1	16	6	100	-
Partial paper wrap	2	50	2	50	-	-	4	100	-
White dress shirts:									
Plastic bag	21	54	12	31	6	15	39	100	-
Paper bag	6	86	1	14	-	-	7	100	-
Paper wrap	8	57	2	14	4	29	14	100	1
Plastic bag and box	6	46	3	23	4	31	13	100	-
Box	7	58	3	25	2	17	12	100	1
Plastic bag and hanger	5	46	3	27	3	27	11	100	-

Table 27 shows the percentages running vertically which sheds more light on packaging as it relates to the functions. For colored uniforms and coveralls the largest percentage of respondents tie for all functions,

and for white dress shirts, plastic bags are used by the largest percentage. A difference appears, however, for white uniforms and white uniform shirts. Here a large percentage of respondents favoring protection and sales appeal use paper wraps, while a large percent favoring distribution convenience use plastic bags.

TABLE 27 - Question 7, part 2A, cross tabulated with package functions

Garment and Type of Packaging	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%
Colored uniforms:						
Plastic bag	12	19%	7	27%	2	10%
Paper bag	5	8	2	8	-	-
Paper wrap	17	27	3	12	6	29
Partial paper wrap	4	6	2	8	1	5
Tied	22	35	10	38	10	48
Other	3	5	2	7	2	8
Total	63	100%	26	100%	21	100%
White uniforms:						
Plastic bag	17	27	10	38	4	19
Paper bag	8	13	4	15	1	5
Paper wrap	25	38	7	27	10	48
Partial paper wrap	3	5	2	8	1	5
Tied	6	10	2	8	2	10
Other	4	7	1	4	3	13
Total	63	100%	26	100%	21	100%
Coveralls and jackets:						
Plastic bag	14	22	5	19	1	5
Paper bag	2	3	-	-	-	-
Paper wrap	17	27	4	15	5	24
Partial paper wrap	3	5	1	4	1	5
Tied	21	33	12	46	10	48
Other	6	10	4	16	4	18
Total	63	100%	26	100%	21	100%
White uniform shirts:						
Plastic bag	19	30	12	46	6	27
Paper bag	7	11	2	8	1	5
Paper wrap	24	38	7	27	11	52
Tied	4	6	1	4	1	5
Partial paper wrap	2	3	2	8	-	-
Other	7	12	2	7	2	11
Total	63	100%	26	100%	21	100%
White dress shirts:						
Plastic bag	21	33	12	46	6	29
Paper bag	6	10	1	4	-	-
Paper wrap	8	13	2	8	4	19
Plastic bag and box	6	10	3	12	4	19
Box	7	11	3	12	2	10
Plastic bag and hanger	5	8	3	12	3	14
Other	10	15	2	6	2	9
Total	63	100%	26	100%	21	100%

Table 28 shows package functions tabulated against the general type of packaging summarized from Table 27. The covered category includes plastic and paper bags, and paper wrap. Not covered includes tying only and no packaging. As can be seen, those respondents ranking product protection as most important cover the majority of all garments, as might be expected. For distribution convenience and sales appeal, only the majority of white garments are covered - the majority of colored garments are not covered. It appears that covering garments with some type of material is not a prerequisite for sales appeal for colored garments, while it is for white garments.

TABLE 28 - Question 7, Part 2B, cross tabulated with package functions

General Type of Packaging	Product Protection	Distribution Convenience	Sales Appeal
Colored uniforms:			
Covered	54%	47%	39%
Not covered	43	50	53
Coveralls, etc:			
Covered	52	34	29
Not covered	41	54	63
White uniforms:			
Covered	78	60	72
Not covered	18	16	15
White uniform shirts:			
Covered	79	81	84
Not covered	9	12	5

Question Eight Summary

Slacks are packaged as shown in Table 29. The majority of slacks are packaged on either a hanger alone, or on a hanger covered by a plastic or paper bag. These garments are usually dress slacks and are placed on hangers to hold the press. The no answers represent those respondents not handling slacks.

TABLE 29 - Question 6 - Please check the following for the packaging of slacks.

Type of Slacks Packaging	Number of Responses	Percent of Total
Hanger	40	36%
Plastic or paper bag over hanger	55	49
Slacks folded and placed in a bag	2	2
Slacks folded and wrapped	3	3
Other	1	1
No answer	11	9
Total	112	100%

Table 30 shows that protection is rated highest for all slacks packaging. However, sales appeal is a little higher for those respondents using paper or plastic bags and hangers.

TABLE 30 - Question 6 cross tabulated with package functions

Slacks Packaging	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Hanger only	24	63%	8	21%	6	16%	38	100	2
Hanger and plastic bag	27	49	16	29	12	22	55	100	-
Folded and bagged	1	50	1	50	-	-	2	100	-
Folded and wrapped	2	67	-	-	1	33	3	100	-

Questions Nine and Ten Summary

The responses to separate packaging for an individual customer's garment are 62% yes as shown in Table 31. This result is somewhat greater than was expected, because during the preliminary research interviews in Michigan and Ohio, the laundry managers expressed a desire not to do separate packaging.

TABLE 31 - Question 9 - Do you normally tie, wrap, or bag, separately the individual user's garments?

Response	Number of Responses	Percent of Total
Yes	70	62%
No	40	36
No answer	2	2
Total	112	100%

Related to the above question, is the question on matching the pants and shirts of a uniform before packaging. Those respondents answering question nine negatively, were asked to answer question ten. Table 32 shows that of the forty respondents who do not package separately, only 30% match uniform pants and shirts.

TABLE 32 - Question 10 - If the answer to number nine above was no, do you match uniform pants and shirts?

Response	Number of Responses	Percent of Total
Yes	12	30%
No	28	70
Total	40	100%

The cross tabulation for separate packaging, Table 33, reveals that the opinions of the packaging functions are much the same whether or not the respondents package garments separately, although there is a slight preference for separate packaging by those favoring distribution convenience. Those respondents who match, favor distribution convenience and sales appeal more than those who don't match.

TABLE 33 - Question 9 and 10 cross tabulated with package functions

Responses	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Separate packaging:									
Yes	42	60%	18	26%	10	14%	70	100	-
No	20	53	7	18	11	29	38	100	2
Matched:									
Yes	4	36	3	28	4	36	11	100	-
No	16	57	5	18	7	25	28	100	-

Type of packaging cross tabulated with separate packaging and matching, Table 34, reveals that plastic bags are used by a large number of respondents who package separately, although other types of packaging are used. This result is to be expected, since most plastic bags are made for only one uniform or shirt.

TABLE 34 - Question 9 and 10 cross tabulated with type of packaging

Garment and Type of Packaging	Separate Packaging				Matched			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
Colored uniforms:								
Plastic bags	20	29%	1	2%	-	-	1	3%
Paper bags	6	9	1	2	-	-	1	3
Paper wrap	17	24	10	25	-	-	10	35
Tied	18	26	24	61	10	83	14	49
Other	9	12	4	10	2	17	3	10
Total	70	100%	40	100%	12	100%	29	100%
White uniforms:								
Plastic bags	27	39	4	10	1	3	3	10
Paper bags	7	10	6	15	3	27	3	10
Paper wrap	24	34	19	48	3	27	16	55
Tied	3	4	6	15	2	18	4	15
Other	9	13	5	12	3	27	3	10
Total	70	100%	40	100%	12	100%	29	100%
Coveralls and jackets:								
Plastic bags	18	26	2	5	-	-	2	5
Paper bags	2	3	-	-	-	-	-	-
Paper wrap	18	26	9	20	1	8	8	28
Tied	21	30	22	57	7	59	15	52
Other	11	15	7	18	4	33	4	15
Total	70	100%	40	100%	12	100%	29	100%
White uniform shirts:								
Plastic bags	29	42	7	18	2	17	5	18
Paper bags	6	9	4	10	3	25	1	3
Paper wrap	25	36	19	48	2	17	17	59
Tied	2	3	4	10	2	17	2	5
Other	8	10	6	14	3	24	4	15
Total	70	100%	40	100%	12	100%	29	100%
White dress shirts:								
Plastic bags	24	35	14	36	6	50	9	30
Paper bags	5	7	2	5	-	-	2	5
Paper wrap	8	11	7	18	3	25	4	15
Plastic bag and box	9	14	4	10	-	-	4	15
Box	8	11	5	12	1	8	4	15
Plastic bag and hanger	8	11	3	7	-	-	3	10
Other	8	11	5	12	2	17	3	10
Total	70	100%	40	100%	12	100%	29	100%

Question Eleven Summary

The highly positive responses to the question on garment quality, Table 35, are surprising since laundry managers who were interviewed had expressed their opinion that most industrial garments were not of the quality to be packaged.

TABLE 35 - Question 11 - Are industrial laundry garments of the quality to justify special packaging considerations?

Responses	Number of Respondents	Percent of Total
Yes	72	64%
No	32	29
No answer	8	7
Total	112	100%

The second part of the above question asked the respondents to list those industrial garments which they thought were of the quality to receive special packaging considerations. See Table 36. Another surprising result is that one-third of the respondents listed all garments as being of the quality for packaging.

TABLE 36 - Question 11 continued - If yes, which garments?

Garments	Number of Respondents	Percent of Total
All garments	24	33%
Pants and shirts	17	24
White or dress shirts	15	21
Slacks	6	8
All whites	6	8
All synthetics	7	10
Total	75[a]	104[b]

[a] multiple answers

[b] percent based on 72 responses

A comparison of the yes and no answers on garment quality in Table 37 shows that there is not too much difference in the importance of the packaging functions, except that those respondents answering yes favor sales appeal more than those answering no. The preference for sales appeal also shows up under the garments listed as being of the quality to package, although the strongest preference is for protection.

TABLE 37 - Question 11 cross tabulated with package functions

	Package Functions								
	Product Protection		Distribution Convenience		Sales Appeal		Total	Total	No
Responses	No.	%	No.	%	No.	%	No.	%	Answer
Quality:									
Yes	42	58%	13	18%	17	24%	72	100	-
No	15	50	12	40	3	10	30	100	2
Which items:									
All	14	58	4	17	6	25	24	100	-
Pants and shirts	11	64	3	18	3	18	17	100	-
White or dress shirts	9	60	1	7	5	33	15	100	-

Table 38 shows that the respondents answering yes to garment quality, package with all types of materials. Those that answered no, generally package by tying and wrapping.

Of the respondents answering yes and listing all garments of the quality for packaging, the majority use plastic bags for all uniforms. Those listing pants and shirts are about even on tying and wrapping colored uniforms, while the majority wrap white uniform pants and shirts. Those listing white shirts are consistent and wrap or use plastic bags for white uniform shirts and dress shirts.

It would appear here that in the case of those respondents listing all garments of the quality to be packaged, that plastic is used for protection as well as for sales appeal. Those listing pants and shirts still haven't decided whether or not colored uniforms qualify for special packaging considerations.

TABLE 38 - Question 11 cross tabulated with type of packaging

Garment and Type of Packaging	Quality?				Which Items					
	Yes		No		All		Pants and Shirts		White Shirts	
	No.	%	No.	%	No.	%	No.	%	No.	%
Colored uniforms:										
Plastic bag	14	19%	3	9%	12	50%	1	6%	-	-
Paper bag	5	7	2	6	1	4	1	6	1	7%
Paper wrap	18	25	7	22	3	12	7	41	6	40
Tied	27	38	16	50	7	30	6	35	6	40
Other	8	11	4	13	1	4	2	12	2	13
Total	72	100%	32	100%	24	100%	17	100%	15	100%
White uniforms:										
Plastic bag	21	29	6	19	14	58	2	12	2	13
Paper bag	9	13	4	13	1	4	4	23	2	13
Paper wrap	28	39	14	44	6	25	9	53	8	54
Tied	6	8	3	9	-	-	1	6	2	13
Other	8	11	5	15	3	13	1	6	1	7
Total	72	100%	32	100%	24	100%	17	100%	15	100%
Coveralls and jackets:										
Plastic bag	14	19	3	9	11	46	1	6	1	7
Paper bag	2	3	-	-	1	4	-	-	-	-
Paper wrap	18	25	7	22	3	13	7	41	5	33
Tied	29	40	15	47	8	33	7	41	6	40
Other	9	13	7	22	1	4	2	12	3	20
Total	72	100%	32	100%	24	100%	17	100%	15	100%
White uniform shirts:										
Plastic bag	25	35	8	25	15	62	2	12	3	19
Paper bag	6	8	4	13	1	4	2	12	1	7
Paper wrap	28	39	13	41	5	21	8	47	9	60
Tied	2	3	4	13	-	-	1	6	1	7
Other	11	15	3	8	3	13	4	23	1	7
Total	72	100%	32	100%	24	100%	17	100%	15	100%
White dress shirts:										
Plastic bag	25	35	11	35	9	38	4	23	7	46
Paper bag	5	7	2	6	2	8	1	6	1	7
Paper wrap	7	10	6	19	-	-	3	18	2	13
Plastic bag and box	9	13	3	9	3	13	2	12	1	7
Box	7	10	5	16	2	8	1	6	2	13
Plastic bag and hanger	8	11	3	9	5	20	1	6	1	7
Other	11	14	2	6	3	13	5	29	1	7
Total	72	100%	32	100%	24	100%	17	100%	15	100%

Question Twelve Summary

Table 39 is a summary of question twelve, pertaining to the packaging of industrial laundry items such as, wiping cloths and rugs. About one-quarter of the entrance rugs are tied and one-quarter are not packaged. The rest are spread over packaging with plastic bags or wraps, and bands. Wiping cloths, on the other hand, are predominantly tied in bundles, and treated dust cloths and mops are predominantly placed in plastic bags. Treated products are packaged in plastic to protect the chemical treatment. The plastic not only maintains the chemical, but keeps it away from the person handling the packages.

Table 40 for the cross tabulation with package functions, shows that those respondents not packaging rugs and wiping cloths rate the packaging functions as high as those packaging these items. The same is true of the treated cloths and mops.

TABLE 39 - Question 12 - Please check the appropriate box for the industrial items that you handle according to the type of packaging they receive

Item	Type of Packaging: Tied with Twine No.	%	Plastic Bag No.	%	Wrapped in Plastic No.	%	No Packaging No.	%	Paper or Rubber Bands No.	%	Other No.	%	No Answer[a] No.	%	Total No.	Total %
Entrance rugs or mats	22	20%	19	17%	17	15%	25	22%	12	11%	4	4%	13	11%	112	100
Wiping cloths or towels	84	75	7	6	-	-	3	3	12	11	2	2	4	3	112	100
Treated dust cloths	11	10	70	62	15	13	2	2	-	-	1	1	13	12	112	100
Treated mops	6	5	71	64	15	13	4	4	-	-	1	1	15	13	112	100

[a] The no answers represent those respondents not handling the particular product.

TABLE 40 - Question 12 cross tabulated with package functions

Item	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
Entrance rugs:									
Tied	13	62%	5	24%	3	14%	21	100	1
Plastic bag	13	69	-	-	6	31	19	100	-
Plastic wrap	6	35	8	47	3	18	17	100	-
Bands	7	58	4	30	1	12	12	100	-
No packaging	14	56	6	24	5	20	25	100	-
Wiping cloths:									
Tied	46	55	19	23	18	22	83	100	1
Plastic bag	6	86	-	-	1	14	7	100	-
Plastic wrap	-	-	-	-	-	-	-	-	-
Bands	5	42	5	42	2	16	12	100	-
No packaging	2	67	1	33	-	-	3	100	-
Treated cloths:									
Tied	6	55	2	18	3	27	11	100	-
Plastic bag	38	54	18	27	13	19	69	100	1
Plastic wrap	11	74	2	13	2	13	15	100	-
Treated mops:									
Tied	2	33	-	-	4	67	6	100	-
Plastic bag	40	56	19	27	12	17	71	100	-
Plastic wrap	11	74	2	13	2	13	15	100	-

Question Thirteen Summary

The responses to the questions on package identification are shown in Table 41. A majority of packages are identified by a ticket attached to the package regardless of the type of packaging. Some respondents, either tying only or using plastic, identify the package by means of the heat sealed tape, identifying the customer, that is attached to the inside of the garment's collar. When the garment is folded and packaged, the inside of the collar faces up, and in the case of uniforms, the shirt is usually placed on top of the pants. However, the pants also have a heat sealed tape attached to them.

TABLE 41 - Question 13 - How are your packages identified for sorting to proper route and customer delivery?

Identification	Number of Responses	Percent of Total
Ticket on outside of package	56	50%
Cloths' markings (tied only bundles)	8	7
Written on package (paper bundles)	6	5
Cloths' markings show through package (plastic bundles)	13	12
No reference as to identification method	28	25
No answer	5	4
Total	116[a]	103%[b]

[a] multiple responses [b] percent based on 112 responses

A number of respondents misinterpreted the question and responded with an explanation of their customer coding system and did not mention the means of identifying the package. It is the author's opinion that this misinterpretation did not invalidate this question's results.

Question Fourteen Summary

One of the more important questions was the one that asked the respondents to rank the functions that can be performed by packaging according to their importance in industrial packaging. Table 42 shows the averages of the rankings. Product protection is ranked as most important, and distribution convenience and sales appeal tied for second. This result is somewhat unexpected. The author assumed that sales appeal would be ranked as least important.

TABLE 42 - Question 14 - Please rank (1, 2, 3) the following functions that can be performed by packaging, according to your opinion of their importance in the packaging of industrial laundry products.

Function	Average of Rankings
Product protection	1.41
Distribution convenience	2.24
Psychological impact or sales appeal	2.24

There is a significant difference at the one percent level between the means for product protection and the means for distribution convenience and sales appeal.

Table 43 shows a breakdown of how those respondents who ranked a particular function as most important, ranked the function second in importance.

TABLE 43 - Breakdown of package function rankings

	Ranked as Number One					
	Product Protection		Distribution Convenience		Sales Appeal	
Ranked as Number Two	No.	%	No.	%	No.	%
Product protection	-	-	24	92%	13	62%
Distribution convenience	23	37%	-	-	8	38
Sales appeal	40	63	2	8	-	-
Total	63	100%	26	100%	21	100%

The table shows that the majority of respondents who ranked product protection as number one, ranked sales appeal number two. Also, the majority of those who ranked sales appeal as number one, ranked product protection number two. It would appear that product protection is somewhat related to sales appeal.

The majority of respondents who ranked distribution convenience as number one, ranked product protection number two.

The relationship between sales appeal and product protection might exist because a protected garment could possibly have sales appeal also. In fact, if there was no covering around the garment there would be no place to put advertising copy. But a garment wrapped in plastic, for example, might not need any copy to appear sales appealing.

Question Fifteen Summary

Table 44 shows the responses to the question on the reason for the last change made. As shown in Table 44, the largest response was to the change to increase product quality. A good percentage of responses were made to the reasons for changing packaging to increase sales appeal, and to increase distribution convenience.

TABLE 44 - Question 15 - Please mark the reasons for the last change you made in your packaging.

Reason for Change	Number of Responses	Percent of Total
To reduce unit costs of packaging	37	33%
To increase quality of products	68	61
To increase sales appeal of products	50	45
To gain distribution convenience	47	42
Forced to because competition changed	7	6
Total	209[a]	187%[b]

[a] multiple answers [b] percents based on 112 responses

The percentages for the reasons for the last change in packaging are close in ranking to the ranking of the package functions in question fourteen.

Table 45 shows the results of the cross tabulation with package functions. The percentages have been run vertically because they are more meaningful. The majority of respondents marking product protection as most important also made changes to protect product quality. This same relationship holds for the other package functions. These relationships show some degree of consistency between the answers for the two questions (questions 14 and 15) if the respondents were not queued on how to answer question fifteen from question fourteen.

The second highest percentage under protection is for changes

made for sales appeal reasons, and the second highest percentage under sales appeal is changes made to increase product quality. The relationship between protection and sales appeal shows up again.

TABLE 45 - Question 15 cross tabulated with package functions

Reason for Last Change	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%
To reduce costs	17	27%	13	50%	6	28%
To increase quality	43	68	11	42	13	62
To increase sales appeal	30	48	5	19	15	71
To increase distribution convenience	24	38	14	54	8	38
Competition	4	6	1	-	1	-
Total	118[a]	187%[b]	44[a]	165%[b]	43[a]	199%[b]

[a] multiple answers

[b] percents based on total number of responses for each package function: 63, 26, and 21 respectively

Under distribution convenience, changes made for cost reasons is second to changes made for distribution convenience reasons. It might appear that people who prefer the distribution convenience function of packaging sacrifice the other packaging functions to get reduced packaging costs. This is not entirely true, however, since a good percentage made changes to increase product quality, which shows that product quality is not sacrificed in all cases, if at all.

Question Sixteen Summary

Table 46 shows the responses to the question on packaging improvements. The category for plastics includes mention of tighter packages (shrink wrap), non-slip plastics, and mention of the use of plastics for various garments for better protection, sales appeal and easy product identification.

TABLE 46 - Question 16 - If you think your packaging could be improved, please explain improvements you might make and reasons for them.

Suggested Improvements	Number of Responses	Percent of Total
Any mention of plastics	26	23%
Any mention of other materials	21	19
Faster packaging methods	6	5
Other	8	7
No answer	54	48
Total	115[a]	102%[b]

[a] multiple answers [b] percents based on 112 responses

The category for other materials includes most suggestions for protection or sales appeal reasons. Some suggestions in this category are use of shirt boxes, collar supports, hangers, and individual packaging.

A number of suggestions included in the other category were not specific, but just made reference to cost considerations as being important with respect to any change.

Most of the faster packaging suggestions were for automatic plastic bagging and/or wrapping.

Almost half of the respondents think that their packaging does not need any change at present, or else they could not think of any improvements they could make.

Table 47 lists the reasons the respondents gave for their suggested changes. As shown, product protection received the largest number of responses for the package functions, although the other reasons category received the most responses overall. These other reasons include cost considerations, faster production methods, and mention of competition.

TABLE 47 - Question 16 continued

Reason for Change	Number of Responses	Percent of Total
Increased product protection	24	39%
Increased distribution convenience	14	23
Increased sales appeal	15	25
Other	31	49
Total	84[a]	136%[b]

[a] multiple responses

[b] percents based on 61 responses to question 16

Table 48 shows proposed changes cross tabulated with package functions. The majority of responses for any change is made by respondents rating protection as most important. Those respondents making no response to this question rated the functions about the same as those making comments.

TABLE 48 - Question 16 cross tabulated with package functions

Proposed Changes	Package Functions: Product Protection No.	%	Distribution Convenience No.	%	Sales Appeal No.	%	Total No.	Total %	No Answer
To plastic	16	64%	6	24%	3	12%	25	100	1
Other materials	13	62	5	24	3	14	21	100	-
Faster packaging	3	50	3	50	-	-	6	100	-
Other	4	50	1	12	3	36	8	100	-
No response	27	54	11	22	12	24	50	100	4

A more meaningful breakdown is in Table 49 for the cross tabulation with type of packaging. A good percentage of respondents packaging colored uniforms and coveralls, and mentioning the use of plastics or other materials, are presently tying. For white uniforms and uniform shirts a good percentage of those mentioning plastics or other materials are presently using paper wraps.

TABLE 49 - Question 16 cross tabulated with type of packaging

Garment and Type of Packaging	Suggested Changes: Plastic No.	%	Other Materials No.	%	Master Packaging No.	%	Other No.	%	No Answer No.	%
Colored uniforms:										
Plastic bag	3	12%	5	24%	4	66%	-	-	10	19%
Paper bag	3	12	2	10	-	-	-	-	2	3
Paper wrap	4	15	4	19	1	17	4	50	15	28
Tied	12	46	8	37	1	17	3	38	20	37
Other	4	15	2	10	-	-	1	12	7	13
Total	26	100%	21	100%	6	100%	8	100%	54	100%
White uniforms:										
Plastic bag	7	27	6	29	4	66	1	12	14	26
Paper bag	5	19	4	19	-	-	-	-	4	6
Paper wrap	9	35	7	32	2	34	5	64	22	42
Tied	-	-	2	10	-	-	1	12	7	13
Other	5	19	2	10	-	-	1	12	7	13
Total	26	100%	21	100%	6	100%	8	100%	54	100%
Coveralls and jackets:										
Plastic bag	4	15	2	10	5	83	-	-	9	17
Paper bag	1	4	-	-	-	-	-	-	1	1
Paper wrap	4	15	5	24	-	-	3	38	15	28
Tied	12	47	10	46	1	17	3	38	19	35
Other	5	19	4	18	-	-	2	24	10	19
Total	26	100%	21	100%	6	100%	8	100%	54	100%
White uniform shirts:										
Plastic bag	8	31	6	29	4	66	1	13	19	35
Paper bag	4	15	3	14	-	-	-	-	3	6
Paper wrap	10	39	7	34	2	34	6	74	21	39
Tied	-	-	1	5	-	-	-	-	5	9
Other	4	15	4	18	-	-	1	13	6	11
Total	26	100%	21	100%	6	100%	8	100%	54	100%
White dress shirts:										
Plastic bag	7	26	6	30	2	33	-	-	25	46
Paper bag	3	12	1	5	1	17	-	-	2	5
Paper wrap	5	19	1	5	-	-	3	36	6	11
Plastic bag and box	3	12	4	18	-	-	-	-	6	11
Box	1	4	4	18	-	-	1	12	8	15
Plastic bag and hanger	3	12	3	14	1	17	1	12	3	6
Other	4	15	2	10	2	33	3	38	4	6
Total	26	100%	21	100%	6	100%	8	100%	54	100%

For all uniforms and coveralls, the respondents suggesting faster packaging are presently using plastic bags.

Most of the respondents making suggestions in the other category are presently using paper wrap for all garments. These are the people who would change to plastic if the cost was within reason.

It is interesting to note that those respondents not answering this question are packaging the majority of their garments in paper or are just tying them. The percentages are about the same as for those respondents who mentioned going to plastic or some other material.

Since the responses to the importance of the package functions and type of packaging were similar for those respondents making suggestions and for those not making suggestions, it would be helpful to know just what is motivating those respondents making suggestions. Table 50 below is a cross tabulation of the reasons respondents gave for the changes with the suggested changes. Increased protection is rated highest as a reason for changing with about even percentages for increases in distribution convenience and sales appeal. So, even though those respondents making suggestions for changes rank the package functions similar to those not suggesting changes, they feel that packaging can gain them further improvements in the performance of the package functions.

TABLE 50 - Cross tabulation of suggestions for changes in packaging with reasons for changes

Suggested Changes	Reasons for Changes: To Increase Product Protection No.	%	To Increase Distribution Convenience No.	%	To Increase Sales Appeal No.	%	Other No.	%	Tot. No.[a]	Tot. %[b]
Plastics	12	46%	9	35%	8	31%	8	31%	37	143%
Other materials	12	57	6	29	6	29	2	10	26	125
Faster packaging	1	17	1	17	1	17	5	83	8	134

[a] multiple answers [b] percents based on total responses to question 16

Summary of Results

Overall, product protection is rated as most important. Even for the cross tabulations of the three package functions with number of employees, part of the country, years handling industrial laundry products, businesses serviced, etc., and all types of packaging, product protection was rated as most important.

There are some variations, however, for the functions rated as second in importance. Sales appeal or psychological impact is rated second in importance as follows: by companies with a smaller number of employees, by companies in the west and northeast, when management pays the rental charges, by managers who think industrial laundry products are of the quality to receive special packaging considerations, by managers who rank product protection as most important, by managers who made their last change to increase the quality of their products, and by laundries who package the majority of their garments in paper wrap.

Distribution convenience, on the other hand, is rated second in importance as follows: by companies in the south, by companies over 175 employees, when the employees pay all or part of the rental charges, by managers who think industrial laundry products are not of the quality to receive special packaging considerations, by managers who made their last change to reduce packaging costs , and by laundries using plastic bags for a majority of their products.

An overview of packaging in the industrial laundry shows that almost half of the laundries do cover colored garments, while a large majority cover all white garments. It also shows the following: that present packages do not protect garments from wrinkles due to rough handling, that the majority of laundries package an individual users

garments separately, that a majority of managers do feel that industrial laundry products are of the quality to receive special packaging considerations, that plastics appear in use for product protection or distribution convenience, that paper wraps are used for protection or sales appeal, and that plastic is mentioned as the material that could most improve packaging in a number of laundries.

As for the garments, white dress shirts in all laundries receive the most extensive packaging of all industrial laundry garments. The reason appears to be that this garment is considered of higher quality. Colored garments appear to be considered lower quality by most laundries and are packaged accordingly with about half of the laundries covering them, except for the laundries in the south and west who cover all their garments. White garments other than white dress shirts, are generally considered higher quality than colored garments and therefore receive more extensive packaging.

CHAPTER IV

CONCLUSIONS

General

The results show that laundry managers can distinguish between the three functions provided by packaging. The cross tabulations have very good consistency between answers to various questions.

The author questions, however, if laundry managers are really packaging to accomplish the functions that they think the package should perform. Sales appeal, for example, does not seem to be a vague notion to them since a number of them made changes in their packaging to accomplish this and a few have put advertising copy on their packages. But, the packaging methods used to accomplish sales appeal leave a question as to just how, and to what garments, this function applies. The questionnaire results show that for those respondents favoring sales appeal, white garments are packaged more extensively than colored garments. Also, while a large percentage of these respondents said that industrial garments are of the quality to be packaged, they are split as to whether or not to include colored garments. The conclusion from this is that sales appeal seems important for white garments but not for colored garments. This could be a result of the type of market serviced for white and colored garments. Colored garments usually are used in an industrial business whereas white garments are usually used more in retail businesses. The market study planned for the future could help to clear this up.

The author chose the sales appeal function of packaging for the above example because in his estimation the laundries are servicing consumers who are influenced by sales appealing packages in the drug and grocery stores. They should therefore be packaging to accomplish this function in industrial laundry packaging. More will be said later on this subject in the discussion of marketing in the industrial laundry. But, before that, the following paragraphs discuss some packaging materials used and their relationship to sales appeal as questioned in the above discussion.

Throughout the cross tabulation analysis, paper wrap was used more when a reference to sales appeal was made than plastic bags. Plastic was mentioned more for distribution convenience. Could it be that paper wrap is more sales appealing in the industrial laundry than plastic bags? If this is true, then the consumer study to be conducted in the future will bring this out. However, in the soft goods industry and in domestic laundries, plastic is used for sales appeal reasons. The "see-through" quality of plastic is used here to aid in customer identification of the item packaged, while at the same time the plastic carries an advertising message, or brand or company identification. Although a paper wrap could carry advertising copy, the twine used to hold the wrap in place would no doubt distract from the copy. One advantage of plastic is that it is heat sealable, thus tying can be eliminated.

There is one disadvantage, however, to the use of plastic in the industrial laundry and it was mentioned by most laundries using plastic. Most plastics are slippery unless specially treated. This property causes problems in distribution. The packaged garments are stacked in a laundry truck for delivery to customers and the plastic bags do not stay stacked during transit without supports. However, this is one problem that could

easily be solved if laundries decided that plastic was the answer to gain sales appeal in packaging.

Market Orientation

The industrial laundry appears not to be marketing oriented. This could be due partly to their somewhat captive market. The package and product does not have to compete in the open market like consumer goods on grocery store shelves, for example. The laundry salesman who gets to the business establishment first and does a good selling job will probably get the business for his company regardless of garment quality or sales appeal of his package. Of course, the garment has to reach a certain minimum quality level to be accepted.

The majority of laundry managers answering the questionnaire state that industrial laundry garments are of the quality to receive special packaging considerations. But although the majority of these people state that all garments, or pants and shirts are the ones to receive the special packaging consideration, they are split as to the including of colored garments.

In the consumer market, a company with a quality product usually packages that product in a protective, easy to use, and sales appealing package. In the industrial laundry, on the other hand, a large percentage of white garments are packaged for protection with some consideration to distribution convenience and sales appeal, while a large percentage of colored garments are packaged for distribution convenience only.

Industrial laundry packaging is not consistent. While those laundries in the west and south cover all garments with a packaging material, those in the rest of the country do not. However, there is one variable that could set this difference straight. Overall, the largest

percentage of businesses serviced are industrial and retail, but the packaging and rating of the package functions do not vary according to type of business serviced. One might expect that sales appeal in the packaging and in the garment condition would be more important at the retail level than at the industrial level. At the retail level, people wearing garments meet the public so garment condition is important, and one might expect the package to be more eye appealing to help sell this higher quality item. On the other hand, at the industrial level, these garments are usually worn to protect the wearer from dirt of some kind. In this situation the garment condition and therefore the package might not need to be of as high a quality.

A breakdown of the part of the country against businesses serviced might show that the west and south service more retail establishments, and therefore use more plastic and paper wrap. Since most industry is located in the middle west and east rather than in the west and south, they probably do service more retail establishments than other parts of the country.

Even if the above is true, sales appeal is not connected with the more extensive packaging for the west and south. Product protection is still rated as number one in importance.

Thus, it appears that with the captive market that industrial laundries have, sales appeal is not considered as important by laundry managers as product protection. But, it might be enlightening to consider some other businesses or companies who also have captive markets to see how they package.

Fuller Brush Company, the door-to-door brush and cosmetics people, have a somewhat captive market but they package extensively to gain repeat sales.

On the industrial side, Hobart Brothers, manufacturers of arc welding equipment, package their welding rods in packages that provide easy rod use, and are somewhat attractive for an industrial product.

Laundry managers might argue, though, that since the majority of business managements' pay for part or all of the garment service, that their market is more captive than those mentioned above, and that sales appeal is not important for the employees using the garments. But, consider for one moment that it is the purchasing agent in an industrial situation who purchases and authorizes payment for the welding rods, and that these items are then used by the plant employees.

One problem of course, at this point in the total research project for the Institute, is that the consumer end of the project has not been done as yet. This survey should point out if sales appeal is important in the rental of industrial garments. Then the question of the importance of sales appeal in industrial laundry packaging could be better answered.

Another item to consider that points out that industrial laundry managers are not marketing oriented is the item of packaging costs. A number of respondents made changes to reduce packaging costs, and a number mentioned that they would change their packaging, but that changes considered (eg. going to plastics) would increase their packaging costs. This writer realizes that low cost is important to the running of a profitable business, but a number of changes are made every year in consumer packaging that increase package costs. These changes are usually made to increase the convenience features or sales appeal of the package. With the increase in sales appeal, the company hopes to, and usually does, increase its sales and therefore more than covers its increased packaging costs. The industrial laundry could do the same thing.

One final observation of marketing orientation for the industrial laundry is in order. Of those respondents who suggested changes in their packaging, the largest percentage suggested changes to gain increased product protection. A small percentage suggested changes for sales appeal reasons. This shows the continued orientation to the physical aspects of packaging and not to the psychological, although a few launderers are now or are becoming psychologically oriented.

The Roles of Packaging

In conclusion the writer would like to summarize the roles of packaging as viewed by industrial laundry managers and make recommendations for future research.

Product protection provided by packaging is the major concern of the managers. They rank this as most important in the majority of all market regions and in the majority of all companies. Many made their last change to preserve or increase product protection and many want to improve their present packaging to obtain product protection. Product protection is achieved through the use of plastic bags or paper wraps for a large percentage of laundries handling colored garments and for most laundries handling white garments. The protection provided is protection from dirt. The flexible packaging materials used, however, do not protect the garments from wrinkles due to handling. For treated dust control items, protection is achieved through the use of plastics to keep the chemical away from the man handling the item in transit.

Although product protection is ranked most important by the majority of laundries throughout the United States, the full extent of its achievement is not realized by all laundries. The most noticeable differences are in the different market regions of the United States. The west and

south practice product protection almost to its fullest extent by packaging all garments with a protective wrap. Other parts of the country only practice product protection for white garments, not colored garments. The reason for this difference as explained previously is probably due to differences in market demands.

Distribution convenience is tied with sales appeal for second in importance, although distribution convenience seems to be the better understood of the two. Distribution convenience as practiced in its simplest state provides a grouping and handling function by the tying together of groups of uniforms with twine. A more sophistocated state is the bagging of an individual's garments for ease of sorting and possibly tying of a group of these garments to facilitate handling. Identification is achieved by attaching a ticket to the package or simply identifying the garment with its clothes' markings in the collar.

As practiced, all types of packaging are used to achieve this function and tickets are the main means of identification. Also, the majority of laundries do separate packaging and matching of garments.

In this writer's opinion distribution convenience along with product protection are practiced to the greatest extent by the laundries in the south where plastic is used for garment packaging. Protection is achieved, but distribution convenience is best achieved because of the individual bagging and the "see-through" properties of plastic bags for identification. Although most laundries in the south still identify with tickets, they are not necessary.

Sales appeal or psychological impact seems to be the least understood and practiced function. For the majority of respondents, this function applies to white garments only. It is practiced for white

garments by the use of some plastic, but mostly paper wrap. Some material samples received with the questionnaires show that little advertising copy is used by most laundries in garment packaging.

Closely related to a sales appealing package is garment quality, and while the majority of launderers feel that laundry garments are of the quality to package, only a few consider colored uniforms in this category.

As an earlier analysis showed, sales appeal and product protection are somewhat related. It could very well be that a garment which is wrapped or bagged in some way has sales appeal also. This conclusion seems to follow packaging logic, except that a majority of the laundries still view the function of the wrap or bag as a means of providing product protection and not sales appeal. Garment quality or condition is a prerequisite to sales appeal, and a package that preserves this quality is important. But, assuming this prerequisite of the package is necessary, then sales appeal should be the foremost packaging consideration.

Sales appeal is difficult to evaluate without some knowledge of consumer opinions, and although laundry managers think they know what their market needs are, it was expressed to this writer by the Institute representative that this type of information had never been collected. This is the reason that sales appeal is the least understood and practiced function of packaging.

The difficulty in trying to evaluate the role of sales appeal points out the need for further research in industrial laundry packaging before the roles of packaging can be completely defined.

This laundry managers' survey is only a first step in the attempt to define the roles of packaging in the industrial laundry. This writer is confident that the information found in this survey will be a valuable

aid in conducting the consumer survey. The consumer survey should also throw some light on the motivations of the laundry managers to package as they do.

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