

PRODUCT INFORMATION AS A RESOURCE: A STUDY OF FACTORS
AFFECTING ITS USEFULNESS TO CONSUMERS

A Summary of a Dissertation
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Introduction

Product information if it has limited useful qualities, can constrain consumption, as well as the potential utility to be gained by consumers from product use. The qualities of useful information are manifested in the form of (1) validity and reliability; (2) specific, relevant content; (3) understandable presentation; and (4) suitable and known accessibility.

These information qualities seem particularly important in an economically advanced society in which a number of opportunities are available for time allocation. Diesing (1962), Lazer and Smallwood (1972), Linder (1970), and Schary (1971) reasoned that consumers choose those activities promising the greatest returns. Consumers may be unwilling to allocate a substantial amount of resources toward search activities for poor information which subsequently offers little return for the resources allocated. Indeed, in a number of studies negative attitudes are reported among consumers concerning product quality and information (American Association of Advertising Agencies, 1965, pp.21-27; Barksdale and Darden, 1972, pp. 28-35; Bauer and Greyser, 1968; Cohen, 1971, p. 1; Gaedeke, 1970; Harris, 1972).

Many sources, including Buskirk and Rothe (1970), Bymers (1971), and the United States Congress (1970) deplored existing conditions which prohibit rational decisions in the marketplace. At the same time, Cravens and Hills (1970, pp. 21-28) intimated that many consumers do not want to make rational decisions. According to them, economic and psychological costs are so high that rational decision making is discouraged.

Although consumers cannot afford to be rational in every action, Bymers (1971) stressed the importance of enabling consumers to be

rational when the demand merits rationality. In addition, both Presidents Nixon and Kennedy were consistent in supporting the consumer's right to be informed (Executive Office of the President, 1963; U.S. Congress, 1970, pp. 117-118).

The Model

A proposed information use system was adapted from the framework for home management developed by Maloch and Deacon (1966). Procurement of resources by consumers is viewed as a consequence of a perceived demand or need. Thus, demand for product information could be affected by family goals and events regarding use and care of products (Figure 1).

A second input into the proposed information use system includes resources for meeting demands. The qualities of the resource (information) serving as an input into the system and impinging upon the homemaker and her decision-making capacity and potential for product utility are accessibility, validity and reliability, specificity and relevance, and understandable content. Other resources affecting information search include temporal allocations, money, skills, knowledge, and attitudes toward information. Opportunity costs concerning resource use for information search may limit compilation and testing of action alternatives within the information use framework. Feedback from the information use system may result in a shift of the homemaker's attitudes positively or negatively toward the product information and the product itself.

Lack of information quality appears as a dysfunction not only of the information use system of the consumer but also of marketing and the entire economy. Katzman (1970) agreed with other writers in that the output from 1 social system is often the input into another. Products and product information seem to be both an output from industry and an input into the consumer's information use system.

Katzman suggested also that output from 1 system to a second is frequently far greater than output from the second system to the first. Perhaps study of consumer use of product information can be used to strengthen the weak link from the information use system to the information generating systems. Indeed, a number of researchers have pointed out the deplorable status of this linkage and the need for responsible actions concerning good quality product information to reduce decision-making risks of consumers (Bernstein, 1971; Buskirk and Rothe, 1970; Bymers, 1971; Cellarius and Platt, 1972; Chapin, 1970, p. 28; Drucker, 1964 and 1969; Herrmann, 1970; Lowe, 1970, p. 51; Sandbach, 1971; Stidson and Schutte, 1972, p. 25; Thorelli, 1971; U.S. Congress, 1970).

Several writers, some of whom are marketers, have iterated the need for research to determine what information is meaningful and useful to consumers (Bernstein, 1971, p. 4; Gaedeke, 1970; Magrabi, Elgindaily, and Braden, 1972; U.S. Congress, 1970, pp. 9-19). Many writers

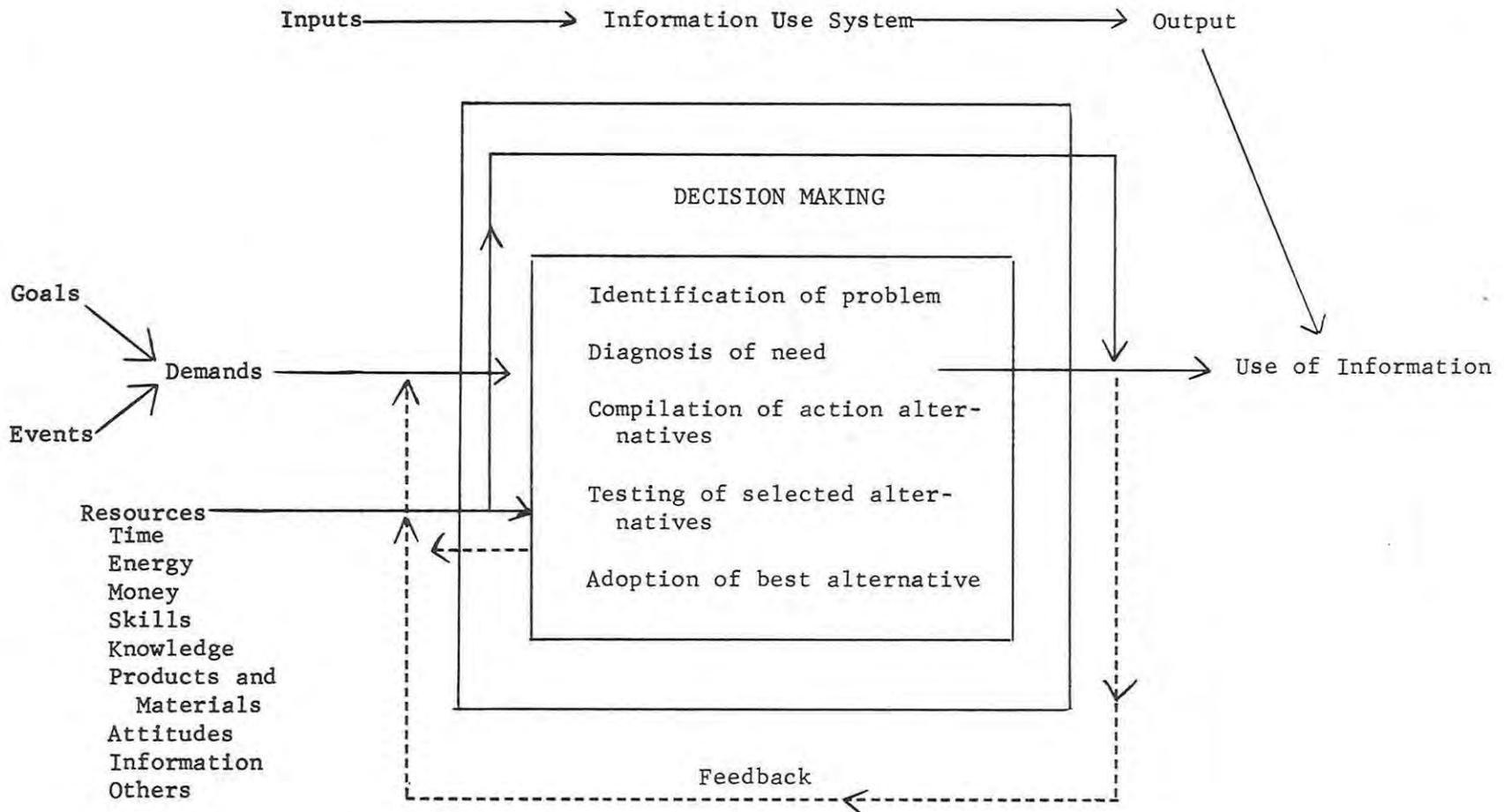


Fig. 1--Feedback at any point in the information use system can affect the inputs into the decision-making components of the system.

have stated that in the long run, the well-being of the consumer and society is vital to the well-being of industry (Bell and Emory, 1971, p. 41; Gray, 1972, p. 22; Katzman, 1970; Kotler, 1972, p. 54; Schooler, 1967; U.S. Congress, 1970, pp. 109, 128; Warne, 1971). Insights into these issues may enable professionals and consumers to enhance utility from family resources.

Hypotheses and Procedures

Operational hypotheses formulated for the project including 3 categories of independent variables were as follows: information needs of the respondents vary according to selected product condition factor(s), product usage factor(s), and demographic factor(s). The automatic washer was selected as the product for investigation. Reasons for this were that women spend a substantial amount of time in care of the family's clothes (Walker, 1969), and this complex product has a high saturation level (Saturation Index for Key Products, 1973) as well as failure rate (Federal Trade Commission, et.al., 1969).

Questionnaire and Data Collection

A precoded questionnaire including 2 instruments, an Information Discrimination Scale (IDS) and an Information Needs Scale (INS), was developed and pretested among a convenience sample of consumers. The adviser, dissertation committee members, a panel of graduate students, and statistician provided assistance in refining definitions (Appendix A) and the improvement of the validity and reliability of the psychographic measures at several stages.

A systematic sample of 500 homemakers was drawn using a random start in the City Directory of Bowling Green, Kentucky. A mailed questionnaire accompanied by a cover letter and business reply envelope was mailed on October 12, 1972 with a follow-up mailing of all 3 on November 2, 1972. Preservation of the sample was further attempted by telephone contacts to nonrespondents. The response rate was 49.4 percent, but only 206 of the questionnaires (automatic washer users) were included in the analysis.

Analysis of Data

Descriptive data were obtained and the INS and the IDS (Tables 4 and 5, Appendix B) were refined using a series of computer runs of item-total correlations and a test of reliability (alpha coefficient of internal consistency) of the scales. The INS was further improved following printouts of product-moment correlation matrices. The outcomes of these and other statistical measures including factor loadings of the INS items and item-factor correlations were within the ranges of acceptability cited by a number of statistical references (Tables 6-9, Appendix C).

The alpha of the 5-item IDS was 0.520, but the reliability of the 10-item INS was measured at 0.723. The Spearman-Brown projected reliability of the 10-item scale was 0.839. The criterion of sufficient sample size of 200 for valid application of the scale analysis procedures was met. The chi-square test of independence and 1-way analysis of variance were utilized to test the hypotheses.

Findings and Interpretations

Demographic Summary

According to the chi-square values, the responding sample of automatic washer users differed from the population (Tables 10 and 11, Appendix D). The women participating in this study tended to be more highly educated, be more fully employed, have smaller families and higher family incomes, and cluster more heavily in the 35 to 55 age range than the general population. Reasons for disparities may include changes that occurred during the time lapse between collections of Census information and this data, a disproportionate return rate from high income and education strata, and the limitation that a city directory may not be up-to-date and may have omissions.

The Automatic Washers and Their Use

Seven of 10 of the automatic washers used were represented by 3 major brands (Table 12, Appendix D). Three-fourths of the washers were purchased new and the remainder were acquired through other means. Age of the washer was most frequently 3.0 to 6.9 years; the mean washer age was 6.9 years.

Although low, medium, and high washer usage occurred with almost equal frequency, responses regarding satisfaction with product use were skewed toward high satisfaction (Table 13, Appendix D). The mean number of years of service expected by the women from a washer was 11.5 but they believed 10.0 years to be the actual average life of a washer. The latter was close to the 9 years Pennock and Jaeger (1964) found to be the general useful life for an automatic washer. Discrepancies between what is expected of a product such as a washer and the amount of service actually obtained could be a source of real dissatisfaction to an owner.

Fifty-three percent of the respondents reported 1 or more breakdowns (Table 14, Appendix D). Product failures most often were due to (1) incomplete drainage, (2) leaking or clogged supply hose(s), and (3) impairment of the spinning function.

Participants in the study generally reported that their washers had information on them regarding cycle features (wash and rinse temperatures, agitation speeds, and the like) in addition to brand information (brand name, company name and address, etc.) (Table 15,

Appendix D). In findings regarding location of washer instruction books there may be implications relating to costs of information procurement. Only about one-fourth of the respondents said that they stored their instruction book in the room where the washer was located. Almost one-third were either unsure of the exact location of the book or reported no access to the washer manual.

Use of the washer instruction book appeared to be quite limited. One-fourth of the women reported either that the book was never used or that a book was never obtained with the washer. The book was consulted only during initial washer use by another 29 percent.

The only demographic factor related to use of the instruction book was education level of the homemaker (Table 1). Both the chi-square value and the contingency coefficient showing a low moderate correlation were highly significant. As education level increased there was a tendency for respondents to indicate greater use of the washer instruction book than at lower levels of education.

Attitudes toward Product Information from Selected Sources

Consistent with findings of other researchers (American Association of Advertising Agencies, 1965; Barksdale and Darden, 1972; Bauer and Greyser, 1968; Cohen, 1971), all advertising media were found to be suspect concerning reliability of information (Table 16, Appendix D). A system was utilized whereby the dependability ratings from highest to lowest were assigned 5, 4, 3, 2, and 1 points, respectively. The dependability ratings accrued in the following order: washer, itself (805); instruction book (792); home economist (709); appliance repairman (694); appliance dealer (656); neighbor and friends (539); magazine advertising (459); television advertising (449); newspaper advertising (444); and radio advertising (427). Apparently, improvement of information from a number of media is mandated in light of the consumer's viewpoint.

Homemakers studied by Roselius (1971) rated information from friends similarly to the current study. The appliance dealer, however, had more positive acceptance than that reported by Roselius. Findings in Settle's investigation (1972) concerning high assurance among consumers of complex products when information was provided by an expert are supported in this study.

Information Discrimination Scale

When respondents were requested to discriminate between qualities of product information, most selected the item in each of the pairs that presented the more factual information (listed as item 2) (Table 17, Appendix D). The high proportion of unusable responses was due primarily to lack of response or inappropriate and qualified answers. The discrimination required may have been a major limitation to response.

TABLE 1

Distribution of responses on use of instruction
book by selected demographic factors

| Demographic Factor | Uses of Instruction Book | | | | X ² | C |
|----------------------------|---------------------------|----------------|------------------|-------|--------------------|-------------------|
| | Never, Don't Have Book | Single Uses | Multiple Uses | Total | | |
| | n | n | n | n | | |
| Age of homemaker | | | | | 8.31 ^a | 0.21 ^a |
| 34 or less | 13 | 28 | 16 | 57 | | |
| 35 to 54 | 23 | 38 | 34 | 95 | | |
| 55 or over | 16 | 11 | 8 | 35 | | |
| Total | 52 | 77 | 58 | 187 | | |
| Education | | | | | 17.22 ^b | 0.29 ^b |
| Low | 15 | 8 | 4 | 27 | | |
| Lower middle | 13 | 21 | 15 | 49 | | |
| Upper middle | 13 | 27 | 14 | 54 | | |
| High | 11 | 21 | 25 | 57 | | |
| Total | 52 | 77 | 58 | 187 | | |
| Employment status | | | | | 1.43 ^c | 0.09 ^c |
| Not employed | 24 | 29 | 20 | 73 | | |
| Employed | 29 | 48 | 38 | 115 | | |
| Total | 53 | 77 | 58 | 188 | | |
| Household size | | | | | 1.68 ^d | 0.09 ^d |
| Small | 18 | 19 | 16 | 53 | | |
| Medium | 23 | 41 | 30 | 94 | | |
| Large | 12 | 17 | 12 | 41 | | |
| Total | 53 | 77 | 58 | 188 | | |
| Family income ^f | | | | | 9.01 ^e | 0.22 ^e |
| Low | 8 | 4 | 2 | 14 | | |
| Medium | 18 | 26 | 15 | 59 | | |
| High | 23 | 45 | 41 | 109 | | |
| Total | 49 | 75 | 58 | 182 | | |

^a p = 0.081; df = 2

^e p = 0.061; df = 2

^b p = 0.009; df = 3

^f Low annual income was \$6,999 or less; medium income, \$7,000 to \$9,999; high income, \$10,000 and over. Only about one-third of the participants in the low income category responded to this item.

^c p = 0.507; df = 2

^d p = 0.796; df = 2

The z-scores of the refined Information Discrimination Scale were significantly associated with age ($p < 0.001$) and education of the homemaker ($p < 0.001$) and with family income ($p = 0.01$) (Table 2). The contingency coefficient reflected a moderately positive association between the IDS scores and age and education of homemaker.

In general, the younger women and those reporting higher levels of education and family income were better able than others in the sample to distinguish more factual from less factual information. If many poorly educated women have low information discrimination ability, this may have implication regarding their ability as consumers to compile and test alternatives in a managerial situation. Also, for them the return realized from information search and use may be low or negative (risky from the standpoint of embarrassment and/or failures of product to perform as anticipated).

From the findings reported above and the findings of others (Harris, 1972; Mathewson, 1972; Newman and Staelin, 1972; Thorelli, 1971) it may be conjectured that low income consumers may be those who may potentially gain the most from good information. If so, a challenge appears to be threefold: (1) developing ability in consumers to distinguish between facts and propaganda for prevention of innocent errors, (2) creating an awareness in consumers of available information resources and integrating these into personal value and belief systems, and (3) producing information resources with high credibility for consumers. Informational output with high credibility would in turn provide a worthy resource input for the decision-making structure of the information use system.

Product Information Needs

Needs of consumers for selected information content were studied in relation to purchase of a new washer. One-fourth of the respondents either supplied no response or checked the "none of these" option; the remaining three-fourths listed 1 or more needs including water, detergent, and electricity usage; quality of product performance; and load capacity. In fact, 47 percent of the sample, checked or wrote in more than 1 item (Table 18, Appendix D).

Information Needs Scale

Respondents' attitudes toward selected qualities of product information were assessed with a 28-item Likert-type scale (Tables 19, 20, and 21; Appendix D). The qualities were (1) specific, relevant content; (2) accessibility: information on the product itself; and (3) accessibility: information from other sources. An index of importance for individual items was obtained by assigning 5 points to "strongly agree," 4 to "agree," 3 to "uncertain," 2 to "disagree," and 1 to "strongly disagree."

TABLE 2

Information discrimination score as a function of demographic factors

| Demographic Factor | Information Discrimination Score | | | | χ^2 | C |
|--------------------|----------------------------------|-------------|-----------|------------|--------------------|-------------------|
| | Low n | Medium n | High n | Total n | | |
| Household size | | | | | 6.58 ^a | 0.18 ^a |
| Small | 16 | 33 | 14 | 63 | | |
| Medium | 27 | 34 | 38 | 99 | | |
| Large | 10 | 17 | 16 | 43 | | |
| Total | 53 | 84 | 68 | 205 | | |
| Age of homemaker | | | | | 22.93 ^b | 0.32 ^b |
| 34 or less | 10 | 20 | 31 | 61 | | |
| 35 to 54 | 29 | 41 | 32 | 102 | | |
| 55 or over | 13 | 23 | 5 | 41 | | |
| Total | 52 | 84 | 68 | 204 | | |
| Education | | | | | 28.60 ^c | 0.35 ^c |
| Low | 12 | 19 | 2 | 33 | | |
| Lower middle | 17 | 26 | 12 | 55 | | |
| Upper middle | 17 | 18 | 21 | 56 | | |
| High | 6 | 21 | 33 | 60 | | |
| Total | 52 | 84 | 68 | 204 | | |
| Family income | | | | | 12.62 ^d | 0.24 ^d |
| Low | 9 | 23 | 5 | 37 | | |
| Medium | 13 | 21 | 14 | 48 | | |
| High | 27 | 39 | 48 | 114 | | |
| Total | 49 | 83 | 67 | 199 | | |

^a $p = 0.160$; $df = 4$

^b $p < 0.001$; $df = 4$

^c $p < 0.001$; $df = 6$ (Low and lower middle categories collapsed to raise all cell frequencies to 5.)

^d $p = 0.014$; $df = 4$ (Low annual income was defined as less than \$7,000; medium income ranged from \$7,000 to \$9,999; and high incomes were \$10,000 and over.)

The item in the refined 10-item INS with the highest mean of the z-scores concerned dealer explanation of differences between low and high priced washers, indicating a higher agreement among respondents on this need than on the others (Table 22, Appendix D). Eight of the 10 scale items, however, had high means (raw score mean = 4.000 or over). Clearly, the attitudes of the homemakers sampled present a strong challenge to some of the current practices in supplying information to consumers.

Analyses of hypotheses

Results of tests of significance for each hypothesis were as follows:

| | p | Decision |
|---------------------------------------|--------|----------|
| I. Product condition factors | | |
| A. Means of acquisition | 0.115 | rejected |
| B. Age of washer | 0.238 | rejected |
| C. Brand of information on the washer | 0.052 | rejected |
| D. Feature information on the washer | 0.837 | rejected |
| E. Brand of washer | 0.082 | rejected |
| II. Product usage factors | | |
| A. Frequency of washer use | 0.680 | rejected |
| B. Satisfaction of use | 0.006 | accepted |
| C. Location of instruction book | 0.058 | rejected |
| III. Demographic factors | | |
| A. Size of household | 0.991 | rejected |
| B. Age of homemaker | 0.715 | rejected |
| C. Educational status of homemaker | 0.0002 | accepted |
| D. Annual family income | 0.558 | rejected |

The means of the INS scores tended to vary with amount of brand information on the washer and washer brand (Table 23, Appendix D). Differences among means concerning the five product condition factors, however, were not significant (Table 3).

Satisfaction of use was the only washer usage factor for which differences between means of z-scores was significant ($p = 0.006$) (Table 3). In comparisons of means for the two satisfaction groups, those with a lower satisfaction rating for their washer had higher INS scores than consumers rating washer performance as very satisfactory (Table 24, Appendix D). Perhaps limited informational input concerning washer use contributed to findings in regard to lower performance ratings. From another viewpoint, quality information useful as a resource may have functioned to contribute to homemaker awareness of effective means of achieving expectations of the product.

In the analysis of variance, differences among means of the INS scores for the factors, size of household, age of homemaker, and family income were not significant (Table 3 and Table 25, Appendix D). Therefore, the operational hypotheses that information needs are a function of these factors were rejected.

TABLE 3

Degrees of freedom, mean squares, and F values for washer condition, product usage, and demographic factors

| Dependent Variable | df | Mean Square | F Value | p |
|------------------------------|----|-------------|--------------------|--------|
| Washer condition factors | | | | |
| Means of acquisition | 1 | 24496.0 | 2.445 | 0.115 |
| Age of washer | 2 | 14848.0 | 1.439 ^a | 0.238 |
| Brand information | 1 | 36928.0 | 3.727 | 0.052 |
| Feature information | 1 | 400.0 | 0.040 | 0.837 |
| Washer brand | 4 | 21536.0 | 2.096 | 0.082 |
| Product usage factors | | | | |
| Frequency of use | 2 | 4040.0 | 0.395 | 0.680 |
| Satisfaction of use | 1 | 76416.0 | 7.595 | 0.006 |
| Location of instruction book | 2 | 29464.0 | 2.867 | 0.058 |
| Demographic factors | | | | |
| Household size | 2 | 104.0 | 0.010 | 0.991 |
| Age of homemaker | 2 | 3496.0 | 0.343 | 0.715 |
| Educational status | 3 | 68965.0 | 7.454 ^b | 0.0002 |
| Family income | 2 | 6120.0 | 0.595 | 0.558 |

^aComputed from a 3 x 3 matrix with two oldest age categories collapsed.

^bComputed from a 4 x 3 matrix with low, lower middle, upper middle, and high education categories.

The hypothesis that differences in the Information Needs Scale scores registered by homemakers at varying levels of education are real was confirmed by the highly significant F value ($p = 0.0002$). Almost one-half of the women with high INS scores were highly educated, but only one-fifth of those with medium and low scores were so well educated. The chi-square value was highly significant ($p = 0.002$) and according to the contingency coefficient a low positive association existed which was also significant ($p = 0.002$).

Clearly, the highly educated women in the sample demanded more complete information from manufacturers and dealers as compared to the least well educated respondents. Possibly, as education levels of women are increased, improvements will be demanded of those specialists responsible for informational output to consumers. The findings and interpretations were consistent with the viewpoint of 46 percent of the businessmen surveyed by Gaedeke (1970) that better educated consumers demanding more information was 1 underlying cause of consumerism.

Can it be that the low scores of respondents in lower educational strata are typical of low expectations in other dimensions and that a vicious cycle predominates between educational level and expectations? Ireland (1967) has reported a similar view among low income, poorly educated individuals.

The hypothesis that consumers' INS scores vary according to income levels was not upheld in the analysis of variance. In view of the fact that educational status of the homemaker was a significant explanatory variable, income also was expected to be significant. Possible reasons may be that the employment rate of the respondents was 60 percent, considerably higher than the rate of 42 percent for the geographic area sampled and a substantially larger proportion of the sample were in the \$10,000 and over category (U.S. Bureau of Census, General Social and Economic Characteristics, 1970, pp. 19-354 and 19-366). The unusually high rate of female employment and high incomes in the current study may connote different values and lifestyles in contrast to that of the breadwinner, high income family.

The findings concerning the income and education variables are, at least for education, consistent with those of Thorelli (1971) who found that high income, highly educated Norwegian consumers engaged in more information search activity and were more aware of data sources as compared to those in lower levels. Thorelli concluded that increased education enhances effectiveness of consumer functioning in a market economy. He further related the needs for information content and availability to the demographic factors of income and education.

Perhaps highly educated consumers have a number of attractive time and money use options as well as high expectations regarding responsible decision making in the purchase, use, and care of products. Hence, they expressed greater demands for product information because of the need

to have specific, relevant information with a minimum of (1) acquisition costs, (2) opportunity costs, and (3) embarrassment and failures in use. Building upon Linder's theory (1970) that affluent individuals do not necessarily gain in leisure because of the increased number of products accrued for use and activities demanding their attention, perhaps highly educated consumers do not want to bear the burden of information search. Costs of acquisition of useful product information may appear unduly high.

By the same token, more highly educated than less well educated women may be more cognizant of the need for quality information to make rational decisions in the marketplace. Thus, these findings are consistent with positions taken by Buskirk and Roth (1970, pp. 62-64), Bymers (1971), Cellarious and Platt (1972, p. 672), The Federal Trade Commission, et al., (1969, p. 148), and Toyer (1968, p. 114) that there is need for adequacy of information for intelligent, rational decisions in the abundant marketplace.

Summary and Conclusions

The current study supports the contention that useful product information which offers validity and reliability, specificity and relevancy, and accessibility is a salient need and is indeed a function of the educational status of the homemaker as well as, perhaps, other factors. Useful product information for example, that in the instruction book, then can serve as a facilitator for well educated consumers. Useful product information also appears critical to the more vulnerable low income, poorly educated, and older consumer with poor discrimination ability.

For many consumers -- at least those who are highly educated and those with low product satisfaction ratings -- the quality of information resources as an input into the decision-making structure of the information use system appears important. It may be that consumers generate demands for information as a result of events and goals that are yet to be satisfactorily met by information producing systems. The theory of the role of flow from 1 system to another cited by Katzman (1970), Stidson and Schutte (1972, p. 25), and Uhl and Armstrong (1971, pp. 591-592) appears to be further substantiated. Quality of informational input into the information use system adapted from the framework for home management of Maloch and Deacon (1966) appears essential if information is indeed viewed as a resource for consumer decision making.

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APPENDICES

- Appendix A: Definitions
- Appendix B: Codes for Items in Information Needs Scale and Information Discrimination Scale (Tables 4 and 5)
- Appendix C: Statistical Analyses of Scales (Tables 6 through 9)
- Appendix D: Tables Supporting Findings concerning Data Analysis (Tables 10 through 25)

APPENDIX A

Definitions

Operational definitions developed for the study were as follows:

Homemaker. Member of household consisting of one or more persons who had major responsibility for household tasks.

Household. One or more persons who reside in a dwelling unit.

Employment Status.

Full-time homemaker: not employed for pay outside the home.

Homemaker employed part-time: employed outside the home 20 or fewer hours per week.

Homemaker employed full-time: employed outside the home 21 hours or more per week.

Education. (Classification levels on questionnaire were based on those of Louis Harris and Associates, Inc., 1972).

Low: did not complete high school.

Lower medium: completed high school.

Upper medium: some college or other advanced training beyond high school.

High: college graduate or beyond.

Age of Homemaker.

Young: 34 years or less.

Middle: 35 through 54 years.

Older: 66 years and over.

Household Size.

Small: one or two people in a dwelling unit.

Medium: three or four people in a dwelling unit.

Large: five and over.

Income. (Total annual family income before deductions.)

Low: less than \$5,000.

Medium: \$5,000 to \$9,999.

High: \$10,000 and over.

Product Information. Information concerning consumer products which may be useful to consumers for purchase, use, and care decisions.

Brand Information. Information on the washers including brand name, company name and address, and cycle name(s).

Feature Information. Items of information on the washer including wash and rinse temperature(s), agitation and spin speed(s), and water level(s).

Frequency of Washer Use.

Low: four or fewer loads per week.

Moderate: five to eight loads per week.

High: nine or more loads per week.

Information Needs Scale (INS) Score. Total points accrued by a participant in response to 10 statements on a Likert-type evaluation scale of one through five. The statements included items concerning factual, relevant quality of the content of information supplied with automatic washers, items relating to the accessibility of information supplied with automatic washers, and items evaluating accessibility of information from other sources. The maximum possible score was 50 and the minimum, 10. To facilitate statistical analyses, the scores were transformed into standard scores with a mean of 500.

Information Discrimination Scale (IDS) Score. The score obtained by a respondent in attempting to discriminate between five pairs of statements supplying "good" and "poor" laundry information. Each of the five pairs of statements consisted of one statement with phraseology commonly used in advertising or information on or with washers. The second statement was intended to be clearer and more factual or more informative than the first. The maximum possible score was 10 and the lowest, five. To facilitate statistical analyses, the scores were transformed into standard scores with a mean of 500.

APPENDIX B

TABLE 4

Codes for the refined 10-item Information Needs Scale

| Reverse Scoring Code | Questionnaire Item Number and Statement |
|----------------------|--|
| No | 1.40 Dealers should explain the differences in high priced washers and lower priced ones. |
| No | 1.44 I want to know what laundry procedures are likely to get clothes cleanest. |
| No | 1.50 The company's name, exact address, and model and serial number should be easy to find and read on the washer. |
| No | 1.51 Directions for operating a washer should be printed on the machine. |
| No | 1.54 A tag on the washer should give outside measurements of the washer. |
| No | 1.55 A manufacturer should provide a label on a new washer giving requirements for electrical power, drainage, and leveling. |
| No | 1.57 A washer in a store should have a price sheet displayed on it similar to those on new cars listing the basic price of each of the added features. |
| No | 1.58 A homemaker should be able to easily locate information on care of materials and surface finishes of a washer. |
| No | 1.59 Specific information placed on a washer can reduce some of the frustration in buying a washer. |
| Yes | 1.64 If manufacturers do not voluntarily supply good information on their laundry appliances, the U.S. government should <u>not</u> require their cooperation. |

TABLE 5

Codes of refined 5-item Information Discrimination Scale

| Item No. | Poor Statement | Better Statement |
|----------|--|---|
| 2.7 | Brand B washer insures thorough rinsing. | Brand B washer has 2 deep rinses to remove detergent and soil. |
| 2.9 | Do not overload a washer. | Clothes should not come above the mark on the agitator showing the maximum load level. |
| 2.10 | To wash a load of heavily soiled items use more than the usual recommended 1 cup of detergent. | When using high sudsing detergents that are listed in the instruction book, use 1½ to 2 cups for heavily soiled items in hard water. |
| 2.13 | Enzyme presoaking agents and enzyme detergents offer complete washing machine safety. | Enzyme laundry products are not always safe for the washer. If left to soak for several hours, they may damage the inside of the laundry tub. |
| 2.14 | Brand A is highly dependable. | Washer Brand A has high dependability when information shows it to have fewer breakdowns than other washers. |

APPENDIX C

TABLE 6

Coefficients of correlation of scale items
with total score of that scale

| Information Needs Scale | | Information Discrimi- nation Scale | |
|----------------------------|------------------|---------------------------------------|------------------|
| Question- naire Item | Coeffi- cient | Question- naire Item | Coeffi- cient |
| 1.40 | 0.616 | 2.7 | 0.563 |
| 1.44 | 0.604 | 2.9 | 0.695 |
| 1.50 | 0.614 | 2.10 | 0.685 |
| 1.51 | 0.534 | 2.13 | 0.418 |
| 1.54 | 0.562 | 2.14 | 0.556 |
| 1.55 | 0.652 | | |
| 1.57 | 0.709 | | |
| 1.58 | 0.580 | | |
| 1.59 | 0.700 | | |
| 1.64 | 0.407 | | |

TABLE 7

Product-moment correlation matrix (information needs score)

| Question- naire Item | 1.40 | 1.44 | 1.50 | 1.51 | 1.54 | 1.55 | 1.57 | 1.58 | 1.59 | 1.64 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.40 | 1.000 | 0.342 | 0.300 | 0.325 | 0.306 | 0.380 | 0.292 | 0.216 | 0.291 | 0.233 |
| 1.44 | | 1.000 | 0.267 | 0.185 | 0.208 | 0.268 | 0.353 | 0.329 | 0.401 | 0.259 |
| 1.50 | | | 1.000 | 0.560 | 0.279 | 0.289 | 0.386 | 0.233 | 0.312 | 0.046 |
| 1.51 | | | | 1.000 | 0.157 | 0.242 | 0.288 | 0.140 | 0.205 | 0.086 |
| 1.54 | | | | | 1.000 | 0.484 | 0.352 | 0.145 | 0.308 | 0.118 |
| 1.55 | | | | | | 1.000 | 0.375 | 0.304 | 0.363 | 0.192 |
| 1.57 | | | | | | | 1.000 | 0.447 | 0.585 | 0.160 |
| 1.58 | | | | | | | | 1.000 | 0.514 | 0.137 |
| 1.59 | | | | | | | | | 1.000 | 0.206 |
| 1.60 | | | | | | | | | | 1.000 |

TABLE 8

Factor matrix: Loadings of items on Information Needs Scale
 =====

| Questionnaire Item Number | Loadings | | |
|---------------------------------|---------------------|---------------------|---------------------|
| | Factor A | Factor B | Factor C |
| 1.40 | 0.1296 | 0.3197 | 0.6406 ^a |
| 1.44 | 0.5116 ^a | 0.0624 | 0.3927 |
| 1.50 | 0.2505 | 0.8071 ^a | 0.1304 |
| 1.51 | 0.0726 | 0.8282 ^a | 0.1455 |
| 1.54 | 0.1291 | 0.2405 | 0.6254 ^a |
| 1.55 | 0.2665 | 0.2383 | 0.6372 ^a |
| 1.57 | 0.7066 ^a | 0.2965 | 0.2185 |
| 1.58 | 0.8243 ^a | 0.0386 | 0.0371 |
| 1.59 | 0.7955 ^a | 0.1279 | 0.2306 |
| 1.64 | 0.1263 | 0.2561 | 0.6493 ^a |

^aLoadings of 0.4000 or greater constitute extraction for that factor.

TABLE 9

Item-factor correlation matrices

| Factor A: Specific, Relevant Content | | | | |
|---|-------|-------|-------|-------|
| Questionnaire | | | | |
| Item Number | 1.44 | 1.57 | 1.58 | 1.59 |
| 1.44 | 1.000 | 0.353 | 0.328 | 0.401 |
| 1.57 | | 1.000 | 0.447 | 0.585 |
| 1.59 | | | 1.000 | 0.514 |
| 1.64 | | | | 1.000 |
| Factor B: Accessibility of Information on Product | | | | |
| Questionnaire | | | | |
| Item Number | 1.50 | 1.51 | | |
| 1.50 | 1.000 | 0.560 | | |
| 1.51 | | 1.000 | | |
| Factor C: Accessibility of Information from other Sources | | | | |
| Questionnaire | | | | |
| Item Number | 1.40 | 1.54 | 1.55 | 1.64 |
| 1.40 | 1.000 | 0.306 | 0.380 | 0.233 |
| 1.54 | | 1.000 | 0.484 | 0.118 |
| 1.55 | | | 1.000 | 0.192 |
| 1.64 | | | | 1.000 |

APPENDIX D

TABLE 10

Characteristics of automatic washer user-respondents and
of female population of Bowling Green, Kentucky

| Characteristics | Respondents | | Census | | χ^2 |
|---|-------------|-----|--------|-----|---------------------|
| | n | % | n | % | |
| Age of homemaker (years) | | | | | 73.31 ^a |
| 24 or less | 14 | 7 | 2804 | 23 | |
| 25 to 34 | 47 | 23 | 2043 | 17 | |
| 35 to 44 | 55 | 27 | 1868 | 16 | |
| 45 to 54 | 47 | 23 | 1739 | 14 | |
| 55 to 64 | 26 | 13 | 1467 | 12 | |
| 65 or over | 15 | 7 | 2073 | 17 | |
| No response | 2 | 1 | 0 | 0 | |
| Total | 206 | 101 | 11994 | 99 | |
| Educational status of homemaker | | | | | 120.87 ^b |
| 8th grade or less | 12 | 6 | 3020 | 33 | |
| Some high school education | 21 | 10 | 1309 | 14 | |
| Completed high school | 55 | 27 | 2277 | 25 | |
| Some college or other advanced training beyond high school | 56 | 27 | 1473 | 16 | |
| College graduate or beyond | 60 | 29 | 1096 | 12 | |
| No response | 2 | 1 | 0 | 0 | |
| Total | 206 | 100 | 9175 | 100 | |
| Family income (annual) | | | | | 70.55 ^c |
| \$2,999 or less | 10 | 5 | 1482 | 18 | |
| \$3,000 to \$4,999 | 11 | 5 | 1063 | 13 | |
| \$5,000 to \$6,999 | 16 | 8 | 1247 | 15 | |
| \$7,000 to \$7,999 | 21 | 10 | 548 | 7 | |
| \$8,000 to \$9,999 | 27 | 13 | 939 | 11 | |
| \$10,000 to \$14,999 | 55 | 27 | 1886 | 23 | |
| \$15,000 and over | 59 | 29 | 1189 | 14 | |
| No response | 7 | 3 | 0 | 0 | |
| Total | 206 | 100 | 8354 | 101 | |

^a $p < 0.001$; $df = 5$

^b $p < 0.001$; $df = 4$

^c $p < 0.001$; $df = 6$

TABLE 11

Household size and employment status of respondents
using automatic washers

| Characteristics | Respondents | |
|------------------------------------|-------------|-----|
| | n | % |
| Employment status of homemakers | | |
| Not employed | 82 | 40 |
| 20 or fewer hours per week | 16 | 8 |
| 21 or more hours per week | 107 | 52 |
| No response | 1 | <1 |
| Total | 206 | 100 |
| Size of household (no. of persons) | | |
| 1 | 15 | 7 |
| 2 | 48 | 23 |
| 3 | 43 | 21 |
| 4 | 56 | 27 |
| 5 | 28 | 14 |
| 6 | 12 | 6 |
| 7 | 3 | 1 |
| No responds | 1 | <1 |
| Total | 206 | 100 |

TABLE 12

Distribution of responses on characteristics
of the automatic washers (N = 206)

| Characteristics | Respondents | |
|--|-------------|----|
| | n | % |
| Brand | | |
| Kenmore | 52 | 25 |
| General Electric | 50 | 24 |
| Maytag | 44 | 21 |
| Frigidaire | 18 | 9 |
| Whirlpool | 10 | 5 |
| Speed Queen | 8 | 4 |
| Hotpoint | 5 | 2 |
| Others | 10 | 5 |
| No response | 9 | 4 |
| Means of acquisition | | |
| Purchased new; not furnished with home | 157 | 76 |
| Purchased used | 20 | 10 |
| Not owned; use coin-op in community | 16 | 8 |
| Other | 12 | 6 |
| No response | 1 | <1 |
| Age of washer (years) | | |
| 0 to 2.9 | 42 | 20 |
| 3 to 6.9 | 82 | 40 |
| 7 to 10.9 | 46 | 22 |
| 11 or more | 26 | 13 |
| No response | 10 | 5 |

TABLE 13

Use of the automatic washer

| Factors | Respondents (N = 206) | |
|--|-----------------------|----|
| | n | % |
| Frequency of use (loads/week) | | |
| 0 to 4 | 71 | 34 |
| 5 to 8 | 67 | 33 |
| 9 or more | 69 | 33 |
| Satisfaction with use | | |
| Very unsatisfactory | 5 | 2 |
| Slightly unsatisfactory | 14 | 7 |
| Neither satisfactory or unsatisfactory | 9 | 4 |
| Slightly satisfactory | 16 | 8 |
| Very satisfactory | 155 | 75 |
| No response | 7 | 3 |
| Expected service life (years) | | |
| 1 to 4 | 3 | 1 |
| 5 to 8 | 30 | 15 |
| 9 to 12 | 101 | 49 |
| 13 to 16 | 33 | 16 |
| 17 to 25 | 10 | 5 |
| Conditional | 3 | 1 |
| No response, don't know | 26 | 13 |
| Usual service life (years) | | |
| 1 to 4 | 9 | 4 |
| 5 to 8 | 60 | 29 |
| 9 to 12 | 71 | 34 |
| 13 to 16 | 19 | 9 |
| 17 to 25 | 1 | <1 |
| Conditional | 4 | 2 |
| No response | 42 | 20 |

TABLE 14

Washing machine failures

| Type of Failure | Respondents (N = 206) | |
|----------------------------------|-----------------------|----|
| | n | % |
| Incomplete drainage | 24 | 12 |
| Supply hose(s) leaked, clogged | 19 | 9 |
| Spinning function impaired | 19 | 9 |
| Motor breakdown | 9 | 4 |
| Wiring, controls, timer problems | 8 | 4 |
| Agitator malfunction | 5 | 2 |
| Balancing malfunction | 5 | 2 |
| Old age; worn out | 5 | 2 |
| Miscellaneous failures | 20 | 9 |
| None, never had any | 57 | 28 |
| Don't remember, don't know | 6 | 3 |
| No response | 29 | 14 |

TABLE 15

Information located on and with the washers

| Factor | Respondents (N = 206) | |
|-------------------------------|-----------------------|-----|
| | n | % |
| Brand items mentioned (no.) | | |
| 0 | 16 | 8 |
| 1 | 64 | 31 |
| 2 | 65 | 32 |
| 3 | 56 | 22 |
| 4 | 14 | 7 |
| 5 | 1 | < 1 |
| Feature items mentioned (no.) | | |
| 0 | 13 | 6 |
| 1 | 12 | 6 |
| 2 | 33 | 16 |
| 3 | 42 | 20 |
| 4 | 40 | 19 |
| 5 | 60 | 29 |
| 6 | 6 | 3 |
| Location of instruction book | | |
| Stored in another room | 69 | 33 |
| In same room as washer | 57 | 28 |
| Other location at home | 5 | 2 |
| Unsure of location | 36 | 17 |
| No book at purchase | 18 | 9 |
| No longer have book | 9 | 4 |
| None at coin-op laundry | 3 | 1 |
| No response | 9 | 4 |
| Use of instruction book | | |
| Never, know how to use washer | 46 | 22 |
| Never had book | 7 | 3 |
| When washer won't work | 5 | 2 |
| When using new washer | 59 | 29 |
| For special laundry problems | 14 | 7 |
| Combination of last three | 58 | 28 |
| No response | 17 | 8 |

TABLE 16

Attitudes of respondents toward dependability of product information from selected sources (N = 206)

| Source | Almost Always Depend- able | Usual- ly Depend- able | Some- times Depend- able | Seldom Depend- able | Almost Never Depend- able | Don't Know | No Re- sponse |
|---------------------|-------------------------------------|---------------------------------|-----------------------------------|---------------------------|------------------------------------|---------------|---------------------|
| | n | n | n | n | n | n | n |
| Washer, itself | 91 | 82 | 7 | 0 | 1 | 8 | 17 |
| Instruction book | 99 | 69 | 5 | 2 | 1 | 14 | 16 |
| Home economist | 85 | 62 | 10 | 3 | 0 | 23 | 23 |
| Appliance repairman | 38 | 94 | 37 | 7 | 3 | 8 | 19 |
| Appliance dealer | 25 | 86 | 55 | 10 | 2 | 7 | 21 |
| Neighbors, friends | 14 | 46 | 82 | 17 | 5 | 21 | 21 |
| Magazine ads | 1 | 21 | 95 | 32 | 21 | 17 | 19 |
| Television ads | 3 | 16 | 88 | 44 | 18 | 18 | 19 |
| Newspaper ads | 1 | 16 | 94 | 36 | 21 | 17 | 21 |
| Radio ads | 2 | 19 | 81 | 40 | 18 | 26 | 20 |
| Other | 5 | 2 | 2 | 0 | 0 | 2 | 195 |

TABLE 17

Distribution of responses according to respondents' perception of the better statement in paired product information items (N = 206)

| Pair No. | Item 1 | Responses | | Item 2 | Responses | | Not Usable | |
|----------------|---|-----------|----|---|-----------|----|------------|----|
| | | n | % | | n | % | n | % |
| 1 | The agitator on modern washers will wash clothes uniformly clean | 4 | 2 | Proper sorting of clothes by soil and color helps get clothes uniformly clean | 176 | 85 | 26 | 13 |
| 2 | A 18-pound load of clothes can be washed sparkling clean. | 7 | 3 | For best wash results load clothes loosely so they can move freely in the water. | 175 | 85 | 24 | 12 |
| 3 | Brand A washer is perfect for the newest permanent press fabrics | 18 | 9 | If the permanent press features on Brand A washer are used, many garments require little or no ironing. | 158 | 77 | 30 | 15 |
| 4 | Using cold water for clothes washing shrinks your hot water bill. | 24 | 12 | Using cold water may cut your water bill but more soil may be removed if hot water is used in your washing machine. | 147 | 71 | 35 | 17 |
| 5 ^a | Brand A is highly dependable. | 24 | 12 | Washer Brand A has high dependability when information shows it to have fewer breakdowns than other washers. | 143 | 69 | 39 | 19 |
| 6 ^a | Brand B washer insures thorough rinsing. | 42 | 20 | Brand B washer has 2 deep rinses to remove detergent and soil. | 131 | 64 | 33 | 16 |
| 7 ^a | Enzyme presoaking agents and enzyme detergents offer complete washing machine safety. | 33 | 10 | Enzyme laundry products are not always safe for the washer. If left to soak for several hours, they may damage the inside of the laundry tub. | 125 | 61 | 49 | 23 |

TABLE 17 (con't)

| Pair No. | Item 1 | Responses | | Item 2 | Responses | | Not Usable | |
|----------------|--|-----------|----|--|-----------|----|------------|----|
| | | n | % | | n | % | n | % |
| 8 ^a | Do not overload the washer. | 64 | 31 | Clothes should not come above the mark on the agitator showing the maximum load level. | 119 | 58 | 23 | 11 |
| 9 ^a | To wash a load of heavily soiled items use more than the usual recommended 1 cup of detergent. | 73 | 35 | When using high sudsing detergents that are listed in the instruction book, use 1½ to 2 cups for heavily soiled items in hard water. | 104 | 51 | 29 | 14 |
| 10 | Cold water detergents get out the worst kind of dirt in cold water. | 78 | 38 | Cold water detergents get out more dirt in hot water than under the same conditions in cold water. | 50 | 44 | 38 | 18 |

TABLE 18

Information Content needed at purchase

| Information Need | Respondents | |
|---|-------------|-----|
| | n | % |
| Single item needs | | |
| Amount of water used | 26 | 13 |
| Washer performance | 8 | 4 |
| Load capacity | 7 | 3 |
| Features and function | 5 | 2 |
| Amount of detergent used | 4 | 2 |
| Amount of electricity used | 3 | 1 |
| Brand and price | 2 | 1 |
| Multiple item needs | | |
| Water, electricity, and detergent usage | 37 | 18 |
| Water and detergent usage | 20 | 10 |
| Water and electricity usage | 15 | 7 |
| Water and detergent usage, capacity, and features | 6 | 3 |
| Water, electricity, and detergent usage; performance; and features | 6 | 3 |
| Water and detergent usage, capacity, and service | 4 | 2 |
| Water and detergent usage and performance | 2 | 1 |
| Water usage, performance, and service | 2 | 1 |
| Water, electricity, detergent usage and service | 2 | 1 |
| Water, electricity, and detergent usage; capacity; and service | 2 | 1 |
| None of these | 31 | 15 |
| No response | 24 | 12 |
| Total | 206 | 100 |

TABLE 19

Attitudes toward needs for specific, relevant content (N = 206)

| Item No. | Questionnaire Statement | Strongly Agree | | Agree | | Uncertain | | Disagree | | Strongly Disagree | | No Response | | Index of Item Importance |
|-------------------|--|----------------|----|-------|----|-----------|---|----------|----|-------------------|----|-------------|---|--------------------------|
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| 1.41 | I would like to know whether safety tests are made on washers. | 107 | 52 | 78 | 38 | 6 | 3 | 0 | 0 | 1 | <1 | 14 | 7 | 866 |
| 1.44 ^a | I want to know what laundry procedures are likely to get clothes cleanest. | 101 | 49 | 85 | 41 | 4 | 2 | 1 | <1 | 1 | <1 | 14 | 7 | 860 |
| 1.49 | I'd like to know if a more expensive washer is more trouble free than a cheaper one. | 85 | 41 | 96 | 47 | 5 | 2 | 5 | 2 | 1 | <1 | 14 | 7 | 835 |
| 1.42 | Knowing how long a washer should last is of no use to me. (Reversed item) | 10 | 5 | 7 | 3 | 4 | 2 | 62 | 30 | 109 | 53 | 14 | 7 | 829 |
| 1.59 ^a | Specific information placed on a washer can reduce some of the frustration in buying a washer. | 71 | 34 | 110 | 53 | 8 | 4 | 3 | 1 | 0 | 0 | 14 | 7 | 825 |
| 1.48 | Statements on what causes clothes to wear out in a washer mean little to me. (Reversed item) | 5 | 2 | 10 | 5 | 8 | 4 | 75 | 36 | 94 | 46 | 14 | 7 | 819 |
| 1.58 ^a | A homemaker should be able to easily locate information on care of materials and surface finishes of a washer. | 65 | 32 | 115 | 56 | 10 | 5 | 2 | 1 | 0 | 0 | 14 | 7 | 819 |

TABLE 19 (con't)

| Item No. | Questionnaire Statement | Strongly Agree | | Agree | | Uncertain | | Disagree | | Strongly Disagree | | No Response | | Index of Item Importance |
|-------------------|---|----------------|----|-------|----|-----------|----|----------|----|-------------------|----|-------------|---|--------------------------|
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| 1.57 ^a | A washer in a store should have a price sheet displayed on it similar to those on new cars listing the basic price of each of the added features. | 67 | 33 | 96 | 47 | 21 | 10 | 8 | 4 | 0 | 0 | 14 | 7 | 798 |
| 1.40 | A homemaker has little need to know how to get rid of old appliances. (Reversed item) | 1 | <1 | 16 | 8 | 14 | 7 | 84 | 41 | 77 | 37 | 14 | 7 | 796 |
| 69 1.52 | Finding out what to do when a washer won't work is a problem. | 40 | 19 | 101 | 49 | 11 | 5 | 35 | 17 | 5 | 2 | 14 | 7 | 712 |
| 1.45 | I don't care if some washers cost from \$10 to \$20 less than others to operate over a 10 year period. (Reversed item) | 13 | 6 | 67 | 33 | 22 | 11 | 56 | 27 | 34 | 17 | 14 | 7 | 607 |
| 1.47 | Ten years ago, the cost of a new washer was about the same as it is today. | 1 | <1 | 16 | 8 | 38 | 18 | 73 | 35 | 64 | 31 | 14 | 7 | 393 |

^aIn the factor analysis, the item loaded with Factor 1 of the 10-item Information Needs Scale.

TABLE 20

Attitudes toward accessibility: Information on the product, itself (N = 206)

| Item No. | Questionnaire Statement | Strongly Agree | | Agree | | Uncertain | | Disagree | | Strongly Disagree | | No Response | | Index of Item Importance |
|-------------------|---|----------------|----|-------|----|-----------|----|----------|----|-------------------|----|-------------|---|--------------------------|
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| 1.50 ^a | The company's name, exact address, and model and serial numbers should be easy to find and read on the washer. | 109 | 53 | 77 | 37 | 2 | 1 | 2 | 1 | 2 | 1 | 14 | 7 | 865 |
| 1.51 ^a | Directions for operating a washer should be printed on the machine. | 96 | 47 | 78 | 38 | 9 | 4 | 6 | 3 | 3 | 1 | 14 | 7 | 834 |
| 1.56 | Directions for washer use encased in sturdy plastic and attached to the washer should be of little help when purchasing and using a washer. (Reversed item) | 6 | 3 | 22 | 11 | 24 | 12 | 83 | 40 | 56 | 27 | 15 | 7 | 734 |

^aIn the factor analysis, the item loaded with Factor B of the 10-item Information Needs Scale.

TABLE 21

Attitudes toward accessibility: Information from other sources (N = 206)

| Item No. | Questionnaire Statement | Strongly Agree | | Agree | | Uncertain | | Disagree | | Strongly Disagree | | No Response | | Index of Item Importance |
|-------------------|--|----------------|-----|-------|----|-----------|----|----------|-----|-------------------|----|-------------|---|--------------------------|
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| 1.40 ^a | Dealers should explain the differences in high priced washers and lower priced ones. | 119 | 58 | 68 | 44 | 4 | 2 | 1 | < 1 | 0 | 0 | 14 | 7 | 881 |
| 1.55 ^a | A manufacturer should provide a label on a new washer giving the requirements for electrical power, drainage, and leveling. | 62 | 30 | 106 | 51 | 16 | 8 | 8 | 4 | 0 | 0 | 14 | 7 | 798 |
| 71 1.43 | Manufacturers should provide enough information so that an owner of a washer can make simple repairs. | 74 | 36 | 85 | 41 | 19 | 9 | 10 | 5 | 2 | 1 | 16 | 8 | 789 |
| 1.65 | An appliance manufacturer is moving in the right direction when he supplies a phone number that you can use at no charge for information. | 56 | 27 | 111 | 54 | 14 | 7 | 7 | 3 | 2 | 1 | 16 | 8 | 782 |
| 1.66 | It is O.K. if laundry information from manufacturers and dealers convince you to buy a new washer when your present one is 6 years old and out of style. (Reversed item) | 1 | < 1 | 19 | 9 | 28 | 14 | 94 | 46 | 49 | 24 | 15 | 7 | 744 |
| 1.54 ^a | A tag on the washer should give outside measurements of the washer. | 40 | 19 | 102 | 50 | 33 | 16 | 17 | 8 | 0 | 0 | 14 | 7 | 741 |

TABLE 21 (con't)

| Item No. | Questionnaire Statement | Strongly Agree | | Agree | | Uncertain | | Disagree | | Strongly Disagree | | No Response | | Index of Item Importance |
|-------------------|---|----------------|----|-------|----|-----------|----|----------|----|-------------------|----|-------------|---|--------------------------|
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| 1.64 ^a | If manufacturers do not voluntarily supply good information on their laundry appliances the U.S. government should not require their cooperation. (Reversed item) | 4 | 2 | 26 | 13 | 25 | 12 | 83 | 40 | 53 | 26 | 15 | 7 | 728 |
| 1.63 | Testing of washers according to government requirements is needed even if consumers have to pay \$5 more for a washer. | 33 | 16 | 99 | 48 | 36 | 17 | 19 | 9 | 4 | 2 | 15 | 7 | 711 |
| 1.67 | Testing of washers according to government requirements is needed even if consumers have to pay \$10 more for a washer. | 24 | 12 | 62 | 30 | 52 | 25 | 41 | 20 | 11 | 5 | 16 | 8 | 617 |
| 1.61 | It is easy to get honest information when buying a washer. (Reversed item) | 1 | <1 | 47 | 23 | 73 | 35 | 57 | 28 | 11 | 5 | 17 | 8 | 597 |
| 1.62 | Appliance dealers are concerned about helping consumers learn how a washer works. (Reversed item) | 2 | 1 | 80 | 39 | 55 | 27 | 46 | 22 | 6 | 3 | 17 | 8 | 541 |
| 1.60 | Manufacturers are doing little to help consumers get information on laundry problems. | 7 | 3 | 30 | 15 | 71 | 34 | 74 | 36 | 9 | 4 | 15 | 7 | 525 |
| 1.53 | Enough information is available to answer questions I have when buying a washer. (Reversed item) | 11 | 5 | 87 | 42 | 42 | 20 | 43 | 21 | 8 | 4 | 15 | 7 | 523 |

^aIn the factor analysis, the item loaded with Factor C of the 10-item Information Needs Scale.

TABLE 22

Items included in refined Information Needs Scale and means of raw scores,
standard deviations, and standard errors for the sample (N = 206)

| Item No. | Questionnaire Item | Mean | S.D. | S.E. |
|-------------------|--|------|--------|------|
| 1.40 ^c | Dealers should explain the differences in high priced washers and lower priced ones. | 4.59 | 0.5613 | 0.04 |
| 1.50 ^b | The company's name, exact address, and model and serial numbers should be easy to find and read on the washer. | 4.51 | 0.6770 | 0.05 |
| 1.44 ^a | I want to know what laundry procedures are likely to get clothes cleanest. | 4.48 | 0.6205 | 0.04 |
| 1.57 ^b | Directions for operating a washer should be printed on the machine. | 4.34 | 0.8333 | 0.06 |
| 1.59 ^a | Specific information on a washer can reduce some of the frustration in buying a washer. | 4.30 | 0.6211 | 0.04 |
| 1.58 ^a | A homemaker should be able to easily locate information on care of materials and surface finishes of a washer. | 4.27 | 0.6014 | 0.04 |
| 1.55 ^c | A manufacturer should provide a label on a new washer giving the requirements for electrical power, drainage, and leveling. | 4.16 | 0.7406 | 0.05 |
| 1.57 ^a | A washer in a store should have a price sheet displayed on it similar to those on new cars listing the basic price for a standard model and the price of each of the added features. | 4.16 | 0.7750 | 0.06 |
| 1.54 ^c | A tag on the washer should give outside measurements of the washer. | 3.86 | 0.8453 | 0.06 |
| 1.64 ^c | If manufacturers do not voluntarily supply good information on their laundry appliances, the U.S. government should <u>not</u> require their cooperation. | 3.81 | 1.0516 | 0.03 |

^aItem loaded with Factor A of the Information Needs Score.

^bItem loaded with Factor B of the Information Needs Score.

^cItem loaded with Factor C of the Information Needs Score.

TABLE 23

Information needs score as a function of product condition

| Condition Factor | Mean of Standard Scores | Information Needs Scores | | | |
|------------------------------|----------------------------------|--------------------------|--------|------|-------|
| | | Low | Medium | High | Total |
| | | n | n | n | n |
| Means of acquisition | | | | | |
| Purchased new | 480.8 | 46 | 61 | 50 | 157 |
| Other means | 506.6 | 17 | 20 | 11 | 48 |
| Total | 500.6 | 63 | 81 | 61 | 205 |
| Age of washer (years) | | | | | |
| 0 to 2.9 | 523.7 | 9 | 18 | 15 | 42 |
| 3 to 6.9 | 491.1 | 26 | 32 | 24 | 82 |
| 7 to 10.9 | 500.0 | 26 | 25 | 21 | 72 |
| 11 or more | 501.4 | 61 | 75 | 60 | 196 |
| Total | 501.4 | 61 | 75 | 60 | 196 |
| Brand information | | | | | |
| 0 or 1 item | 483.8 | 30 | 32 | 18 | 80 |
| 2 to 5 items | 511.2 | 33 | 50 | 43 | 126 |
| Total | 500.6 | 63 | 82 | 61 | 206 |
| Feature information | | | | | |
| 0 to 3 items | 502.0 | 31 | 38 | 31 | 100 |
| 4 to 6 items | 499.2 | 32 | 44 | 30 | 106 |
| Total | 500.6 | 63 | 92 | 61 | 206 |
| Washer brand | | | | | |
| Kenmore | 519.8 | 12 | 19 | 21 | 52 |
| General Electric | 516.6 | 15 | 18 | 17 | 50 |
| Maytag | 493.0 | 14 | 20 | 10 | 44 |
| Frigidaire | 489.8 | 6 | 7 | 5 | 18 |
| Other | 461.8 | 16 | 9 | 8 | 33 |
| Total | 500.5 | 63 | 73 | 61 | 197 |

TABLE 24

Information needs score as a function of product usage factors

| Usage Factor | Mean of Standard Scores | Information Needs Score | | | |
|----------------------------------|----------------------------------|-------------------------|-------------|-----------|------------|
| | | Low n | Medium n | High n | Total n |
| Frequency of use | | | | | |
| Low | 505.8 | 13 | 35 | 15 | 63 |
| Medium | 501.1 | 22 | 23 | 22 | 67 |
| High | 490.6 | 27 | 19 | 22 | 68 |
| Total | 498.9 | 62 | 77 | 59 | 198 |
| Satisfaction of use ^a | | | | | |
| Lower satisfaction | 537.3 | 11 | 12 | 21 | 44 |
| Higher satisfaction | 490.1 | 52 | 63 | 40 | 155 |
| Total | 500.6 | 63 | 75 | 61 | 199 |
| Location of instruction book | | | | | |
| In same room with washer | 526.8 | 11 | 21 | 25 | 57 |
| In another room | 485.8 | 27 | 33 | 14 | 74 |
| Inaccessible; not available | 493.3 | 25 | 20 | 21 | 66 |
| Total | 500.2 | 63 | 74 | 60 | 197 |

^a $\chi^2 = 7.79$; $p = 0.020$; $df = 2$; $c = 0.19$

TABLE 25

Information needs score as a function of demographic factors

| Demographic Factor | Mean of Standard Scores | Information Needs Scores | | | |
|------------------------------|----------------------------------|--------------------------|-------------|-----------|------------|
| | | Low n | Medium n | High n | Total n |
| Household size | | | | | |
| Small (1 to 2) | 501.3 | 13 | 37 | 13 | 63 |
| Medium (3 to 4) | 499.5 | 37 | 28 | 34 | 99 |
| Large (5 to 7) | 501.9 | 13 | 16 | 14 | 43 |
| Total | 500.6 | 63 | 81 | 61 | 205 |
| Age of homemaker | | | | | |
| 34 or less | 508.8 | 18 | 21 | 22 | 61 |
| 35 to 54 | 495.3 | 36 | 35 | 31 | 102 |
| 55 or over | 502.2 | 9 | 24 | 8 | 41 |
| Total | 500.7 | 63 | 80 | 61 | 204 |
| Education^a | | | | | |
| Low | 454.9 | 34 | 38 | 16 | 88 |
| Lower middle | 479.3 | | | | |
| Upper middle | 502.5 | 16 | 25 | 15 | 56 |
| High | 544.0 | 13 | 17 | 30 | 60 |
| Total | 500.7 | 63 | 80 | 61 | 204 |
| Family income | | | | | |
| Low | 483.0 | 5 | 14 | 2 | 21 |
| Medium | 497.8 | 20 | 26 | 18 | 64 |
| High | 507.6 | 34 | 40 | 40 | 114 |
| Total | 501.9 | 59 | 80 | 60 | 199 |

$\chi^2 = 18.39$; $p = 0.002$; $df = 4$; $C = 0.29$ (The low and lower middle categories were collapsed in order to maintain cell frequencies of 5 or greater.)