

for SHOPROB were obtained by asking the question, "What are the three greatest problems you encounter when shopping for clothes?" Due to the exploratory nature of this aspect of the study, an open-ended question was used. Open-ended questions are useful when there are too many possible answers or the answers cannot be foreseen (Aaker and Day 1983). The answers given by the respondents were then classified into one of the five respective categories that are also listed in Table 2.

TABLE 2. Descriptive Statistics for the Consumer Response Variables*

Variable	Frequency	Percentage
SHOPPROB		
SIZE	140	32.3
STYLES	85	19.6
PRICES	59	13.6
SALES	57	13.1
OTHER	93	21.4
Total	434	100.0

*220 respondents actually cited at least one shopping problem. However, the total number of responses for SHOPROB exceeds 220 due to multiple responses.

The variable names for the responses to SHOPROB were SIZE, STYLES, PRICES, SALES, and OTHER.

SIZE and STYLES are the apparel-related responses to SHOPROB. SIZE represents answers regarding size or fit problems experienced when shopping for apparel. STYLES represents responses in which the styling of available clothing was identified as a problem. PRICES represents responses in which the consumer said that the price of apparel was a problem. SALES represents responses in which the consumer indicated that sales help was problematic (e.g., lack of or too pushy). OTHER represents all remaining shopping problems cited by the respondents. Table 3 contains a sample of the type of statements consumers made within each category.

TABLE 3. Examples of Selected Consumer Responses for SHOPROB

SHOPROB	
<u>SIZE</u>	Nothing fits--has to be altered Finding things that fit Sizes are all different Length
<u>STYLES</u>	Cater to young Something for my age Trend toward youthful styles
<u>PRICES</u>	Too expensive High prices
<u>SALES</u>	Unknowledgeable sales staff Pushy clerks Lack of salespeople
<u>OTHER</u>	Foreign-made clothes Crowded stores Sale items not properly marked

Each of the categorical response variables was coded as 1 if any one of a respondent's three responses was represented by that category, and a zero otherwise. Consequently, information is lost to the extent that more than one of the respondent's comments fell into that same category. However, due to the small number of respondents who gave more than one response of a similar nature, the results should not be adversely affected by this simplification. Additionally, it would not be possible to analyze the data preserving the actual number of responses in a given category, because the sample size within specific cells would be much too small (Aaker and Day 1983).

Consumer Characteristics Variables

The consumer characteristics selected for the analysis were those that may affect consumer responses to the categorical variables created from SHOPROB. These variables include AGE, HEIGHT, WEIGHT, SEX, INCOME, EXPEND, WORKING, SHOPPING, FASHION, SHOPFREQ, SHOPTIME, SEW, AND CASUAL. The descriptive statistics for these variables were presented in Table 1. Each of these variables is discussed below.

The age of the respondent, AGE, was calculated based on the respondent's year of birth. Age is one way to measure stage in the life cycle, which may influence factors such as tastes, apparel needs and income, which in turn may affect the nature of any apparel shopping problems cited.

The height and weight of each respondent, HEIGHT and WEIGHT, respectively, were recorded based on the observation of the interviewer. These factors may influence whether problems such as fit and style were cited by the respondents as problems they encounter when shopping for clothes.

The sex of each respondent, SEX, was recorded based on the observation of the interviewer. Men and women may provide different responses to SHOPROB, since the type of clothes each sex wears is sufficiently different to warrant their own set of problems. Also, the bodies of men and women change in different ways as they age, which in turn may affect their responses.

Information regarding INCOME was obtained by asking respondents whether their monthly income was more or less than \$1,000. This information was asked in a limited way since income can be a sensitive issue, particularly among older people. Income is expected to influence the type of shopping or apparel problem cited by an individual. In particular, problems with price, value or quality are expected to be cited more frequently among those individuals with lower incomes.

Information was obtained on how much money each respondent estimated they had spent in the preceding three months on clothes, EXPEND. Expenditures on clothing may influence whether problems such as apparel quality or prices were cited as a problem.

Each respondent was asked whether or not they were employed, WORKING. The work status of a person can influence not only their income and expenditures on clothing but the type of apparel they need and the amount of time they have available for shopping. Consequently, WORKING may be related to problems with styles or quality available, as well as store specific problems such as store hours.

Each respondent was asked whether or not they enjoyed shopping for clothes, SHOPPING. The consumer's attitude towards shopping could influence the type of response they give regarding shopping problems.

Each respondent was asked whether they were interested in keeping up with fashion, FASHION. The respondent's attitude regarding fashion could influence factors such as whether or not they believe the styles available today are a problem.

Information was obtained on how often the respondent usually shops for clothing, SHOPFREQ, as well as the time of day during which they prefer to shop, SHOPTIME. These variables may affect the type of shopping problem encountered, such as out-of-stock conditions or crowded stores.

Participants were asked whether or not they sew, SEW. A person with sewing skills can be expected to be better able to assess the quality of clothing, which may influence whether they cite an apparel-related problem as one they encounter when shopping.

Each respondent was asked to indicate the store in which they generally purchase their casual clothes (CASUAL). Each store was then classified as a discount store (e.g., Wal-Mart), mass merchandiser (e.g., Sears, J. C. Penney), department store (e.g., Dillard's) or a specialty store. The store type in which they generally purchase clothing could influence whether or not they cite problems with prices, store personnel or the quality or styling of apparel.

Data Analysis

Each of the responses to the open-ended shopping problem questions was classified into one of five categories. Due to the nature of the data which resulted from this classification scheme, chi-square analysis was appropriate for analyzing the results. The chi-square statistic can be used to indicate whether each consumer response variable was significantly related to the set of selected consumer characteristics which were also categorical in nature. Before discussing the results from the chi-square analysis, the distribution of responses to SHOPROB is discussed.

The frequency distribution for SHOPROB was presented in Table 2. The distribution for SHOPROB indicates that the size or fit of clothing, SIZE, was the most frequently encountered problem when shopping for clothes, followed by problems related to available styles, STYLES, and "other" problems, OTHER. Thirty-two and one-third percent of the responses were fit problems, while 19.6% were styling problems. Problems related to the price of apparel, PRICES, and the sales personnel, SALES, comprised 13.6% and 13.1% of the total responses, respectively.

Table 4 contains the significant results from the chi-square analysis. The chi-square statistic simply indicates whether or not two variables are significantly related. It does not, however, tell how the variables are related. To gain some understanding of how the variables are related, it is necessary to examine how the responses are distributed within a specific contingency table. Thus, Table 4 also contains information regarding the percent of the respondents with a given characteristic who cited a particular problem. For example, in examining the relationship between SIZE and HEIGHT, 75% of the respondents who were identified as being short cited size as a problem, while

64% of the respondents who were identified as being of average height identified size as a problem.

TABLE 4. Chi-Square Values and Corresponding Percent Distribution for Consumer Response and Characteristic Variables

Variables	Percentage	Chi-Square Value
<u>SIZE</u>		
<u>Height</u>		7.73*
Short	75	
Average	56	
Tall	64	
<u>Weight</u>		8.46*
Under	50	
Average	59	
Heavy	80	
<u>Sex</u>		6.13*
Female	68	
Male	49	
<u>Working</u>		3.64**
Yes	55	
No	68	
<u>Casual</u>		9.75*
Specialty	76	
Discount	74	
Department	70	
Mass merch	53	
Other	53	
<u>STYLES</u>		
<u>Casual</u>		8.3*
Mass merch	50	
Specialty	46	
Department	33	
Other	31	
Discount	26	
<u>PRICES</u>		
<u>Expend</u>		7.9**
<\$50	31	
\$50 - 100	30	
\$101-150	36	
\$151 - 200	10	
>\$200	17	
<u>Casual</u>		8.5**
Mass merch	36	
Discount	32	
Department	30	
Specialty	22	
Other	11	
<u>Shopping</u>		4.89*
Enjoy	22	
Don't enjoy	36	
<u>Shopfreq</u>		2.8**
<once a month	31	
>once a month	21	
<u>Sew</u>		2.7**
Yes	33	
No	27	
<u>Weight</u>		11.94*
Under	50	
Average	20	
Over	39	
<u>SALES</u>		
<u>Income</u>		4.82*
<	15	
>	30	
<u>Working</u>		3.84*
Yes	33	
No	21	

TABLE 4, continued

Variables	Percentage	Chi-Square Value
<u>SALES, continued</u>		
<u>Height</u>		7.98*
Short	16	
Average	29	
Tall	39	
<u>OTHER</u>		
<u>Weight</u>		7.96*
Under	31	
Average	49	
Over	28	
<u>Height</u>		6.68*
Short	31	
Average	46	
Tall	55	

* = Significant at $\alpha = .05$.

** = Significant at $\alpha = .10$.

The consumer response variables which were significantly related to SIZE were HEIGHT, WEIGHT, SEX, WORKING, and CASUAL. CASUAL is also significantly related to STYLES. Each of these findings will be discussed in turn.

HEIGHT and WEIGHT were significantly related to SIZE. As seen in Table 4, the percent distribution suggests that as the height of a person moves away from average, the more likely size or fit is to be considered a problem. With respect to weight, Table 4 indicates that as weight increases, fit is more likely to be cited as a problem.

The sex of the respondent was also found to be related to SIZE. A higher percentage of females found size to be a problem than did men. However, 55% of the men did cite fit as a problem.

The work status of the older consumer was found to influence SIZE. Sixty-eight percent of the non-workers found size to be a problem, while 55% of the non-workers cited fit as a problem that they faced when shopping for clothes.

The type of store in which an individual generally bought their casual clothing, CASUAL, was significantly related to SIZE. A higher percentage of those respondents who shop at department, discount or specialty stores cited fit as a problem compared to those who generally shopped at mass merchandisers or "other" stores.

CASUAL was also found to be significantly related to STYLES. A higher percentage of consumers who shopped at specialty stores or mass merchandisers indicated that the styling of clothes was a problem. This may be a reflection of either the type of clothes carried in the store or the type of consumer who patronizes a particular type of store (i.e., degree of fashion orientation). Of those consumers who said they were interested in keeping up with fashion, 25% shopped at mass merchandisers, 25% shopped at specialty stores, and the remaining 50% were fairly evenly divided between the discount, department and other stores.

The chi-square analysis indicated that problems with the price of apparel, PRICES, were associated with EXPEND, CASUAL, SHOPPING, SHOPFREQ, SEW and WEIGHT.

A higher percentage of respondents who had spent \$150 or less on apparel for themselves in the past 3 months, EXPEND, stated that the price of apparel was a problem. A higher percentage of those respondents who shop at mass merchandisers, discount stores or department stores cited PRICE as a problem. It is likely that PRICE, EXPEND and CASUAL are related to the influence of INCOME, although a significant relationship was not found between PRICE and INCOME.

A higher percentage of respondents who do not enjoy shopping, SHOPPING, and who shop less frequently, SHOPFREQ, considered PRICE to be a problem.

Those respondents who indicated that they sew, SEW, were more likely to consider PRICE to be a problem than respondents who do not sew. This may reflect the fact that traditionally sewers have been able to make clothes more cheaply than they could buy them.

Fifty percent of the respondents who were classified as being underweight and 39% of those who were overweight indicated that price was a problem. This may be related to the need for these consumers to buy specialized sizes which may carry a relatively higher price, or that may be discounted less frequently than standard-sized merchandise.

Problems with sales help, SALES, were found to be associated with INCOME, WORKING and HEIGHT.

A higher percentage (30%) of those respondents with a monthly income over \$1000 cited a problem with sales help. Approximately the same percent of respondents who worked (33%) identified the sales help as problematic when shopping for apparel.

Thirty-nine percent of the tall respondents in the sample indicated that they considered sales help to be a problem. Twenty-nine percent of the average-height respondents found sales help to be a problem.

OTHER was found to be related to WEIGHT and HEIGHT. However, given the variety of statements that were classified in the OTHER category, this variable does not seem to be very useful.

DISCUSSION

This exploratory research investigated problems experienced by older consumers when shopping for apparel. Based on the results of this study, it appears that the fit and styling of apparel is not meeting the needs of many older consumers. Those individuals who are not of average height or weight particularly find fit to be a problem. However, fit problems do not evade the average-size consumers. Thirty-one percent of the respondents who are of average height and 38% of those who are of average weight cited fit as a problem they encounter when shopping for clothes. Clearly, the size and fit of apparel pose a problem for a substantial number of older consumers.

Besides fit, styling is also a significant problem faced by older consumers. In our youth-oriented society, it is easy to direct design efforts towards satisfying the needs of the younger consumer. Design features such as long sleeves for summer wear are generally given little consideration. Previous research on desired store attributes indicated that sizes and styles appropriate for the elderly were considered

important (Lumpkin, Greenberg and Goldstucker 1985). Consumer educators/advocates working on behalf of older consumers might bring these apparel-related problems to the attention of apparel manufacturers. As the elderly market continues to grow, apparel manufacturers may become more responsive to both their fit and styling needs.

Although apparel-related problems appear to be the most prominent shopping problems faced by older consumers, problems related to the attributes of apparel stores were also cited. The price of merchandise and sales personnel were identified by a substantial number of respondents as specific problems they face when shopping for apparel. The elderly consumer's desire for both value and sales have been previously cited as desirable store attributes (Lumpkin, Greenberg and Goldstucker 1985). Although sales personnel have not been previously cited as a specific problem, earlier research has indicated that elderly consumers, particularly those over the age of 75, do like to have personal interaction with the sales help (Lumpkin, Greenberg and Goldstucker 1985).

The findings of this study, along with previous studies, do have implications for retailers. First, retailers might consider the benefits of a senior citizen discount or other promotional activity that provides lower prices specifically to the older consumer. Second, retailers might provide training to sensitize their sales associates to the special needs of older consumers. Additionally, retailers might consider the viability of employing sales staff who are middle-aged or older, particularly during the time of day when the elderly prefer to shop.

With respect to future research, benefits could be gained by examining the types of comments consumers made within each of the five categories analyzed in this study. Such information would make consumer educators/advocates, apparel manufacturers and retailers aware of specific changes that could be made to better satisfy the needs of the older consumer. Additional research in other markets would also help support (or refute) the findings of this study.

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A CONSUMER SEGMENTATION ANALYSIS OF GROCERY
COUPON USERS: PUBLIC POLICY IMPLICATIONS

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Although grocery coupons are one of the fundamental ways by which marketing firms communicate with consumers, little research has dwelt on the public policy dimensions of consumer attitudes and usage of coupons. Based on an extensive survey this paper segments consumers into four basic groups and develops the implications for public policy of the attitudes and behavior of each. Indications are that consumers with low incomes and modest education may be disadvantaged.

Grocery coupons have become a fundamental means by which marketing firms attempt to communicate with consumers and to influence their market place choices. In recent years couponing has experienced extraordinary growth: the number of manufacturer coupons distributed grew from 16 billion in 1970 to 202.6 billion in 1986 (MC3 1986).

Further, the total number of coupons redeemed by consumers has increased from 3.81 billion coupons in 1980 to 7.32 billion in 1986. Although the percentage of total coupons actually redeemed has declined somewhat during this period, number of coupons redeemed per capita, increased by nearly 200% (Table 1). In 1986 the value of coupons redeemed, or stated differently, the resulting reduction in consumers' grocery bills, was \$2.75 billion.

TABLE 1. Coupon Distribution, Redemptions, Value and Rates, 1980-86

	1980	1982	1984	1986
Distribution (billions)	90.6	169.5	163.2	202.6
Redemptions (billions)	3.81	4.48	6.25	7.32
Redemption value (billion \$)	.78	1.20	2.06	2.75
Redemption Rate (percent)	4.2	3.7	3.8	3.6
Redemption Rate per capita (coupons)	16.7	19.2	26.4	30.3

Source: Manufacturers Coupon Control Center (MC3), "A Chronology of Couponing", 1986. Estimates of the Population of the United States, by Age, Sex, and Race: 1980 to 1986, Population Estimates and Projections, Current Population Reports, Bureau of the Census, U.S. Department of Commerce, Series P-25, No. 1000, February 1987.

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Despite their growth and economic importance, coupon research has left important gaps with respect to consumer perspectives and public policy. Uhl (1982) criticizes coupons as a violation of consumer sovereignty and an inefficient promotional device producing "dead-weight" welfare losses. Antil (1985), on the other hand, defends them, attempting to demonstrate that most of Uhl's assertions are unjustified. However, neither of their provocative positions is based on empirical data. Indeed, Antil concludes his article by calling the need to investigate consumer attitudes and behavior with respect to coupons "a high priority research issue." Other strains of literature, although generally better empirically grounded, examine coupons from either a managerial standpoint (eg, Bawa and Shoemaker 1987) or a theoretical perspective (eg, Blattberg et al 1978; Narasimhan 1984). Thus, little in this valuable past research examines the linkage between consumer motivations and public policy. The overarching goal of this study was to measure consumers' attitudes and usage of grocery coupons to assist consumer educators and public policy makers to make more informed decisions and, thus, improve both consumer decision making and grocery industry performance.

METHODOLOGY

The study data were collected from a cluster sample of 2,000 New York State households, randomly selected from a set of New York State telephone directories. A six-page mail questionnaire, with a \$1.00 incentive enclosed, was sent to each household, incorporating issues identified from past research, trade literature, and prior industry interviews. The questionnaire design drew heavily from the "Dillman Method;" that is, considerable attention was paid to each small detail -- booklet format, question symmetry, personal signatures, graphic design. A response rate of 82.3 percent was achieved after two mailings and postcard follow up.

EMPIRICAL FINDINGS

Over 92 percent of the households in this survey report using coupons at least occasionally. This is higher than most past studies (Nielsen 1985; Mooty 1983; Gallo, Hamm and Zeller 1982) which all report coupon use rates between 75-80 percent. Given the large and representative nature of the data set in this study, however, it appears likely that this difference reflects real increased consumer acceptance and usage of coupons.

The typical coupon user as illustrated in these data is likely to redeem coupons on every shopping trip and use coupons even when the shopping environment is "less than ideal" (Table 2).

TABLE 2. Selected Coupon Behavior (N=1360)

Question:	Percent Response:				
(a) Coupon redemption frequency					
(1) every shopping trip	56.1				
(2) every other shopping trip	19.0				
(3) one out of five trips	15.9				
(4) one out of ten trips	4.8				
(5) fewer than one out of ten trips	4.2				
(b) Coupons used if:	A	F	S	R	N ^a
(1) consumer is in a hurry	27.7	17.1	29.2	17.2	8.8
(2) store is busy	56.9	17.9	18.9	4.1	2.3
(3) kids are around	43.9	13.6	14.3	6.2	21.9
(4) customer is buying just a few items	39.3	20.3	29.1	9.2	2.1

^aDenotes response: Always=A, Frequently=F, Sometimes=S, Rarely=R, and Never=N.

Consumer attitudes toward coupons reveal that most consumers (93 percent) believe that coupons allow them to buy more expensive brands. Further, most coupon users tend to disagree that coupons lead to indiscriminate product purchases (65 percent of respondents say that coupons do not induce them to buy what they don't need), but, importantly, a majority (85 percent) believe that coupons affect their brand decisions.

SEGMENTATION ANALYSIS

Three separate statistical techniques were employed to segment respondents in this survey into similar groups: chi-square analysis, factor analysis, and cluster analysis. Since results of the three techniques reinforced one another, results of the chi-square analyses only are reported here. For elaboration of results of the other approaches, see Meloy (1988).

The chi-square analysis identified four overlapping consumer segments. They are classified as follows: coupon user versus non-user; highly committed versus uncommitted coupon user; brand-loyal versus brand-switcher; and likely coupon misredeemer versus proper redeemer. The four segments were derived from the statistical significance of 17 variables cross tabulated with the coupon use and are described below.

TABLE 3. Variables Significantly Associated With Coupon Usage

Variable	Chi-square Value	Variable	Chi-Square Value
Household Size	119.07	Amount Spent	
Time Spent		Shopping	35.73
Shopping	96.13	Years Shopping	24.76
Marital Status	73.67	Age	23.83
Expirations Okay	64.31	No coupons =	
Coupons for		Price Down	22.22
Perishables	59.93	Distance to Store	18.20
Booklet Format	59.30	Income	18.19
Sex	49.27	More No-Clip	16.72
Number of Children	40.74	Shop With Children	15.30
		How Often Shop	13.53

Coupon User Versus Non-User

In descending order, the most significant variables associated with coupon use were household size, time spent in the store shopping, and marital status of the respondent. Data from this research indicated that coupon users are likely to live in households of more than three persons, spend more than half an hour shopping (91 percent of those shopping for more than one half hour use coupons), and be married (96 percent of all married respondents use coupons). Other significant demographic descriptions of coupon users include a likelihood to be between 32 and 59 years of age (95 percent of all respondents in this age range use coupons), have an annual household income between \$20,000 and \$50,000 (94 percent of respondents with incomes in this range use coupons), and shop with their children.

Conversely, the coupon non-user is likely to live in a smaller household, spend less than half an hour shopping each trip and be single. In addition, the non-user is more likely to be male, less than 32 years old or older than 72, have no children, and have annual household income at a distance from the median (eg, less than \$20,000 or more than \$50,000 annually). Coupon non-users appear to view grocery shopping as a task done on the spur of the moment (they tend to shop frequently for amounts less than \$20) or only when absolutely necessary. Meal planning may not be a high priority; and because they are more likely to live alone and have higher incomes, eating away from home may be more prevalent.

Highly Committed Vs. Uncommitted Coupon User

The highly committed coupon user is likely to use coupons frequently, of low face value, and even when shopping conditions are less than ideal. The highly committed coupon user is likely to be female (60 percent of females are highly committed to coupon use), have only a high school education (approximately 55 percent of the most committed coupon users have not gone beyond high school), be older (75 percent of respondents over 45 are committed to coupon use), earn between \$10,000 and \$40,000 annually (60 percent of respondents in this income range are committed to coupon use), and have a "family-oriented" female head of household (ie, non-working status or not "committed" to work).

On the other hand, the uncommitted coupon user uses coupons less frequently, and tends to place a relatively high value on time. The uncommitted coupon user is more likely to be male, younger, single, live in a small household, have a college education, have no children, and have an income above \$10,000. It is likely that the higher levels of education and incomes of both the non-user and the uncommitted segments result in a higher opportunity cost to coupon use.

It should be noted that the actual work status of the female head of the household is a less important determinant of coupon use than her orienta-

tion toward work and the family. The two categories of "career-oriented women," those already working in careers and those who plan to work, show similar coupon clipping and usage tendencies. However, working women who feel their work is "just a job" display more similar attitudes to full-time housewives. Women who work in "just a job" may be forced to do so out of economic necessity, but, if given the opportunity, would rather be full time, traditional housewives. Likewise, women who are currently housewives who plan to work may be temporarily disabled, unemployed, or staying at home to care for small children. Given the opportunity, this group might eagerly reenter the work force to pursue a career. Thus, this study suggests that a female's orientation towards career and family, not work status alone, is a key determinant of coupon use.

Brand Loyal Vs. Brand Switcher

Brand switchers are defined here as respondents who are easily influenced by coupons to switch brands. Chief traits associated with the brand switching segment include: living in larger households (only 10 percent of large households are brand loyal), having a college education (only 5 percent of college educated respondents are brand loyal), relatively high incomes (only 4 percent of respondents making more than \$75,000 annually are brand loyal), youth (only 5 percent of respondents less than 32 years old are brand loyal), and being single (only 15 percent of single consumers are brand loyal).

Conversely, brand loyalty appears to be associated with: households with fewer than 2 persons, a high school education, being older, married, low income, and no children. This description of the brand loyal shopper corresponds in many ways to a common perception of today's elderly shopper. Whether brand loyalty exhibited by today's senior consumer will continue or diminish as younger consumers age is a vital question for those marketers and policy makers who seek to understand an increasingly important market segment.

Coupon Misredeemer Vs. Proper Redeemer

A coupon misredeemer is defined here as someone who pays little attention to coupon specifications when redeeming coupons. Simply put, the likely misredeemer is more likely to be male, college educated, young, single and have a higher income than those who pay stricter attention to coupon specifications. The proper redeemer is more likely to be female, live in a small household, have a high school education, be older, widowed, have lower income, and have a family oriented female head of household.

One hypothesis explaining the statistical grouping of these segments is that the likely misredeemer may have a better understanding of the coupon industry and promotions in general, and consequently is "opportunistic." That is, this shopper may recognize the very small probability that any attempt at coupon misredemption will

ever be revealed. That is because retailers, either by explicit strategy or laxity of enforcement, generally encourage cashiers not to confront suspected coupon misredeemers. Indeed, the retailer has little incentive to do otherwise since most often he simply passes the misredeemed coupon (and cost) along to the manufacturer.

PUBLIC POLICY IMPLICATIONS

Potential Costs and Benefits

Critics of promotional couponing have argued that the societal costs may outweigh the benefits (Uhl 1982; Gallo, Hamm and Zeller 1982). Costs here are of two main types: costs to food industry firms and costs to consumers. Costs to the food industry, essentially manufacturers, include production, distribution, promotion, redemption costs (which indirectly encompass retail related costs), and misredemption costs. Costs to consumers include the opportunity cost associated with clipping and using coupons and the higher food prices that are the direct result of manufacturers ultimately passing on promotional costs to consumers.

One may argue that a final set of costs are those borne by consumers who do not use coupons. Of course, both groups also gain certain benefits from coupons. Benefits to manufacturers, for example, include (at least theoretically) increased sales, market share, economies of scale and exposure associated with effective coupon promotions. Benefits to consumers are both the direct savings resulting from lower food expenditures for couponed items and the indirect benefits of being able to upgrade purchases through the use of coupons.

These costs and benefits are not easily quantified. Public data are generally not available. Moreover, manufacturers have been reluctant to disclose information pertaining to their coupon production and distribution expenditures. Thus, the net systemwide welfare impacts are not clear. However, when the publicly known costs (i.e., redemption and misredemption only) are subtracted from known benefits (reductions in consumer grocery bills for couponed items) a systemwide surplus remains of approximately \$176 million. Since it appears unlikely that total coupon manufacturing and distribution costs are less than \$176 million, in an approximate sense, coupons appear to "cost more than they are worth." However, benefits in the form of additional manufacturer sales that may be induced by coupons coupled with the presumed greater utility associated with upgrading of consumer purchases may tip the welfare scales in a net positive direction. Much more information is required, however, before a rigorous conclusion may be drawn.

Non-User Subsidization of Coupons?

Coupon elimination has been periodically suggested by public policy makers due to an alleged subsidy from one consumer group by another. There has been concern that coupon non-users, generally shown in this research to have lower incomes than users, subsidize the grocery bills of coupon users. The argument is that a non-user who purchases the same item as a coupon user pays a price which has been set by the manufacturer and retailer to cover all costs, including coupon promotional expenses, and profit. However, only the coupon user enjoys a reduction equal to the face value of the coupon. Thus, non-users pay a higher price and thereby bear more of the manufacturers' promotional (eg, coupon-related) expenses than the user. In effect then, non-users subsidize users' grocery purchases. Of course, one might argue that because the coupon user invests time and effort in the redemption process, the resulting lower grocery expenditure is "earned" income. However, a counter-argument is that the non-user is involuntarily penalized if he or she does not wish to take the time (see Uhl).

However, the controversy may no longer be relevant. According to this study an increasingly small minority of all households are strictly non coupon users (8 percent). Thus the overall cost burden of couponing may now be more equally shared by all consumers relative to the initial years of couponing when a more substantial proportion of consumers were non-users. Moreover, this research shows that the non-user is likely to engage in less shopping planning and, sometimes, to have very high incomes (over \$50,000 per year), undoubtedly a reason for some policy makers to be less inclined to initiate measures to "protect" such a non-disadvantaged minority. However, the policy prescription may differ for other coupon segments. For example, a stronger case may be made that grocery coupons discriminate against small households and the elderly through sizing requirements (eg, more coupons available for larger size packages) and against the low income shopper through lack of coupon access. Specifically, coupons are generally less available to lower income households, not likely to be on targeted mailing lists and generally not frequent magazine subscribers. Results of the segmentation analysis indicate that coupon use is lowest among these consumer groups. Thus, although further empirical documentation is needed, it appears likely that these elderly and low income groups subsidize the grocery bills of younger, more affluent coupon users.

Coupons Affect Brand Choice Differentially

Less educated shoppers are likely to be highly committed to coupons. They use coupons more frequently than more educated shoppers and search more aggressively for couponed new products. While these factors suggest that this group thus benefits from coupon use, it is unclear on what basis less educated shoppers make coupon use decisions and how brand selection is subsequently

affected. Past studies have indicated that coupon involvement derives from "smart shopper" bias (Schindler 1986). This desire for smart shopper feelings may cause consumers to use coupons for products not strictly matching their needs, essentially "sub-optimal" purchases. The effects of this tendency may be felt most severely on the least educated.

Among the demographic segments in this study, low income households were found to be the most brand conscious. Yet these are likely to be the very consumers least able to afford national brand items all of the time. Brand loyal shoppers were also the least educated. Brand loyalty, although sometimes a wise risk-averse strategy under conditions of incomplete information, is often more a result of habit than of rational decision making. Although most policy thrusts encourage rational decisions, it appears from these results that rational shopping decisions are becoming more difficult for certain groups of consumers as coupons add to the complexity of grocery shopping.

Coupon Misredemption

This research indicates that coupon misredemption is viewed as more acceptable behavior among highly educated, younger, and higher income shoppers. These shoppers may have a better, or opportunistic, understanding of the redemption process in general, specifically the unlikely possibility of recrimination, and thus, have fewer qualms about redeeming coupons not conforming to correct size or date restrictions. Policy makers might consider simply eliminating all coupon size and date restrictions rather than have lower income, older and less educated consumers expend the necessary time and effort to properly redeem coupons when their higher income and better educated counterparts apparently do not.

While the net welfare impact of the coupon industry on society is complex and difficult to evaluate, this study clearly indicates a number of areas where modification of coupon programs is likely to improve the performance of the grocery coupon system. Marketers should strengthen the positive factors of their couponing programs while working closely with policy makers and consumers to mitigate the negative factors.

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This study replicated procedures used by Morris to examine the consistency in the quality of products marketed by 14 major manufacturers and tested by Consumer Reports (CR) from 1975 to 1984. The results of CR tests of 2117 models were analyzed using three different methods. Each method produced a single numerical quality score to summarize the overall quality ratings of all models marketed by each firm. Quality scores were also calculated by firm for three specific product classes. In addition, multiple-model tests were examined to determine the consistency in the quality rankings and corresponding prices of models marketed by the 14 selected manufacturers. Year-to-year variations in both overall quality scores and scores for individual product classes were the rule rather than the exception. Also, as the number of models marketed by a firm increased, the consistency in price-quality relationships decreased. Over one-half of the price-quality relationships in two-model tests were completely orderly compared to seven percent of the tests containing four or more models.

INTRODUCTION

Consumers face the problem of choosing an appropriate combination of time and money to purchase the desired quantity and quality of goods. To simplify decision-making, individuals may use certain strategies or rules. Maynes (1976) considered the validity of four simple rules consumers might substitute for information in purchasing durable goods. The validity of one of these rules, "Once excellent, always excellent," was the research question of this study.

In a 1971 article, Morris (1971b) asked, "Do firms have any general tendency toward excellence or toward inferiority in the various models they market year after year? Are some firms regularly and significantly superior to other concerns with which they compete?" To address the research questions, Morris examined the quality ratings of all models marketed by each of 18 firms and tested by CR from 1960 to 1969. Morris devised three mathematical procedures, each of which assigned a single quality score, to summarize the overall quality ranking of each firm.

The current research replicates Morris' study using CR data for 1975 to 1984. The

objectives were to:

1. use Morris' procedures to investigate the overall quality rankings of 14 firms using CR test data for 1975 through 1984,
2. examine the consistency or variability from year to year in the quality scores of the 14 companies,
3. compare the companies' quality scores for three product classes to the mean overall quality scores for those firms, and
4. examine the consistency in quality rankings and prices in multi-model tests.

METHOD

Sample Selection

Fourteen manufacturers were selected for the current study. Firms chosen were those with widespread brand name recognition; furthermore, each was represented by at least one model in each of the ten years of CR product tests examined. Eight of the manufacturers in Morris' study were excluded, all ones not represented in each year of the 1975 to 1984 CR tests. Two firms (Panasonic and Radio Shack) included in the current study were not in Morris' sample.

The 14 companies selected represented major American manufacturers such as General Electric and Whirlpool, mail order houses (Sears, Penney, and Ward) and other firms selling major and minor appliances and other durables. Once a seller was chosen, data on relative quality ratings were collected for every model marketed by that seller and tested by CR between 1975 and 1984. The total number of models included for each firm varied greatly, from 23 for Magnavox to 712 for Sears.

Calculation of Quality Scores

Morris' procedures were followed for the current research. However, before outlining them, a brief review of how Consumers Union (CU) presents test results may be useful.

CU's quality ratings of products are usually rankings with models listed from best to worst quality. Frequently--in about 46 percent of the product tests analyzed in this research--each model has a separate quality rating. Alternatively, quality rankings may be presented with one or more groupings of models

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judged to be of essentially equal quality. When that is the case, there are fewer quality ranks than there are models.

Occasionally, numerical quality scores may be assigned to each model. More often, the degree of quality difference between models is not known except when models are of equal or nearly equal quality.

Policies adopted by Morris (1971b, pp. 121-122) were also used in this research to cope with problems in assigning quality rankings. Product tests which lacked clarity were omitted. In the current research, four tests were omitted because the number of rating levels was unclear. Tests in which all models were judged to be of equal quality (41 tests) were also excluded.

When more than one model from a firm was represented in a test, each model was rated separately and included without averaging. Additionally, if CU identified a firm as the manufacturer of a model, that model was included regardless of the brand name used. For example, Kenmore models were attributed to Sears.

The average number of models per test in this research was 15.7 and the average number of rating levels (lower because of ties) was 11.7. Table 1 provides a frequency distribution for both the number of models and the number of rating levels in the 536 tests covered in this study. Two to five rating levels were most common (found in 144 tests); 11 to 15 models (in 157 tests) were most frequently tested.

TABLE 1. Frequency Distribution of Number of Models and Number of Rating Levels in 536 CU Product Tests

Number	Models	Rating Levels
2-5	45	144
6-10	105	127
11-15	157	125
16-20	95	71
21-25	69	36
25-30	27	5
Over 30	37	28
Average	15.7	11.7

The three methods developed by Morris (1971a, pp. 15-18; 1971b, pp. 123-129) were also used in this research to assign quality scores summarizing the overall quality ranking of a firm's models. Each method is described below.

Method 1. Method 1 scores were calculated as the rank of a model divided by the total number of rating levels, with the result converted to percent to allow comparison to

other tests. The example (1971b, p. 123) given in Table 2 will clarify the explanation. A hypothetical CU test is shown with 14 models and 10 rating levels. The first two models are individually ranked, followed by three models of equal quality. Next are five ranked models and last are two pairs of low-rated ties. Method 1 assigns a score of 100 to the lowest-rated model. In the example shown in Table 2, the top-rated model would then be assigned a score of 1/10 or 10 percent.

TABLE 2. Hypothetical CU Test Results

Model	Rating Level	Score	
		Original	Percentage
1	1	1/10	10%
2	2	2/10	20
3	3	3/10	30
4	3	3/10	30
5	3	3/10	30
6	4	4/10	40
7	5	5/10	50
8	6	6/10	60
9	7	7/10	70
10	8	8/10	80
11	9	9/10	90
12	9	9/10	90
13	10	10/10	100
14	10	10/10	100

Since 100 percent was assigned to the lowest quality ranking, a high quality ranking resulted in a low quality score. Although the top-rated model could have easily been scored as 100 percent, Morris (1971a, p. 16; 1971b, pp. 124-125) cited several valid reasons for not using this approach. Specifically, she anticipated that scoring quality in a positive fashion (with the top-rated model assigned a score of 100) would result in very low scores that might raise unnecessary concerns. Also, misconceptions might easily result if, for example, a score of 70 to 80 were associated with a "C" grade, an implication that is not warranted.

As Morris (1971b, pp. 125-127) notes, however, Method 1 also has drawbacks. A firm rated first in a test with ten quality levels received a score of 1/10 or 10 percent; one rated second earned a score of 2/10 or 20 percent. The first firm's product was not necessarily twice as good as the second one's, yet the scoring system might suggest this is true. Since CU generally does not indicate the degree of quality differences between rated models, all "spaces" between models were of necessity treated as equal. The reader should be cautioned to remember that due to this deficiency the scores indicate only that one product was ranked higher than another and do not provide any information on the absolute performance level of products.

Another problem arose when the number of models represented in a test was small. For example, in the 32 tests with only two quality levels, the top-rated firms earned scores of 1/2 or 50 percent. Yet, if a firm rated first in a test with 20 quality levels, its score was 1/20 or 5 percent. As Morris (1971b, pp. 125-127) cautions, if all tests contained 100 models with each separately rated, the percentage method of scoring would be flawless. However, the highest number of ranks found in any test from 1975 to 1984 was 41 and the highest number of models was 47. Since the average number of rating levels (11.7) and the average number of models tested (15.7) were fairly similar, it would appear that many scores were finely delineated. Nevertheless, to overcome any bias that may have occurred, two other methods of scoring were used.

Method 2. Method 2 involved summarizing the percent of each firm's models which ranked above average in rating levels. To clarify, the definition of "above average" for selected ranks is presented below:

<u>Number of rating levels</u>	<u>Ratings "above average"</u>
2 levels	1st rating
3 levels	1st rating only (2nd is average)
4 levels	1st and 2nd ratings
6 levels	1st, 2nd, and 3rd ratings

For each product test, the number of models above and below average were counted. Results were then summed across all tests for each firm and a mean percentage calculated.

Method 3. Method 3 calculates what percent of each concern's models were in the top quartile of the ratings. Of necessity, tests with only two or three rating levels were eliminated.

Consistency in Quality Rankings and Price

Multi-model tests were examined to determine the "orderliness" of price and quality rankings; i.e., in a two-model test, was the better quality model more costly? Each multi-model test of the 14 selected firms was placed into one of four categories. Complete disorder occurred when the prices of all models of a firm in a product test were inverse to the respective quality rankings. Disorder existed when a pair of models had equal quality rankings but unequal prices or unequal prices but equal quality. Partial order defined the condition in product tests of three or more models in which some but not all pairs of prices were inverted with quality. In a test categorized as complete order, the prices and quality of all of a firm's models corresponded completely.

RESULTS

Method 1 scores, shown in Column 3 of Table 3, ranged from 40.3 percent (RCA) to 68.3 percent (Westinghouse). The average percentage score of

the 2117 models in 536 product tests was 53.9 percent.

Method 2 scores are shown in Column 5. Results by firm ranged from 67.9 percent (RCA) to 25.5 percent (Westinghouse). Only 991 or 46.8 percent of the models were "above average." Fewer models were ranked above average than below since ties in quality ratings were more common near the bottom of the hierarchy than at the top. A firm does well, therefore, to find more than one-half of its models in an above average position and only five manufacturers (RCA, Panasonic, Zenith, Whirlpool, and GE) achieved this status.

Excluding the 2- and 3-rating level tests to implement Method 3 eliminated 213 models in a total of 83 tests. Of the 1904 models in tests with four or more quality levels, 416 or 21.8 percent of the total were in the top quartile of rankings. Column 7 of Table 3 shows results by firm ranging from a high of 52.0 percent (RCA) to a low of 13.9 percent (Westinghouse). RCA was the only manufacturer with more than one-half its models in the top quartile. Less than one-fourth of the models of eight of the 14 companies were in the top quartile.

Columns 4, 6, and 8 show the various rankings of the 14 firms by each method. In each of the three methods, RCA achieved top marks and Westinghouse earned the lowest score. Generally, rankings were fairly consistent across the three methods.

Quality Scores for Three Product Classes

The data were also examined to determine whether important differences existed between the overall quality scores and the mean quality scores for three product classes: electronic equipment, major appliances, and small appliances.² Models in the three product classes chosen for investigation totaled 1331 or 62.9 percent of the total number examined. In each product class, the firms included were those with at least one model evaluated by CR in each of the ten years examined.

Nine of the 14 manufacturers marketed electronic equipment; three (RCA, Zenith, and Magnavox) were represented exclusively in this product class. The mean quality scores for electronic equipment for the remaining six firms were not significantly different (Student's t-test, $\alpha = .05$) from those companies' respective overall quality scores. Penney was the only company with a higher percentage of ratings above average for electronic equipment (57.1 percent) than for the total product line (47.6 percent). RCA was the only manufacturer of electronic

²Electronic equipment included televisions, radios, cameras, stereos, and related products. Major appliances were those priced at more than \$100; small appliances were those costing less than \$100.

TABLE 3. Quality Scores by Three Methods for 14 Selected Firms, 1975-1984

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Firm	No. Models Tested	Method 1		Method 2		Method 3	
		Score	Rank	Score	Rank	Score	Rank
RCA	28	40.3%	1	67.9%	1	52.0%	1
Zenith	34	43.4	2	67.6	2	43.8	2
Panasonic	93	44.3	3	66.7	3	32.9	3
Whirlpool	57	49.6	4	57.9	4	32.7	4
GE	177	52.6	5	53.1	5	25.9	5
Sunbeam	68	54.3	6	48.5	6	21.5	10
Magnavox	23	54.7	7	47.8	7	22.7	7
Hotpoint	38	55.4	8	39.5	12	21.9	9
Sears	712	57.2	9	46.6	10	22.6	8
Penney	288	57.5	10	47.6	8	19.1	11
Frigidaire	37	57.6	11	45.9	11	25.0	6
Radio Shack	80	58.6	12	47.5	9	14.3	13
Ward	435	60.7	13	37.9	13	15.3	12
Westinghouse	47	68.3	14	25.5	14	13.9	14
Total	2117	53.9(av.)		50.0(av.)		26.0(av.)	

equipment with more than one-half its models in the top quartile.

Of the seven firms with major appliances tested by CR in each of the ten years, only three (Sears, GE, and Ward) had models in other product classes. The product class scores of those three companies were not significantly different from those firms' overall quality scores. The quality scores of the five concerns marketing small appliances were also not significantly different from those firms' respective overall quality scores. Therefore, it would appear that for the firms examined important differences do not exist between the quality of selected product classes and the quality of the total product line.

Year-to-Year Variations in Quality Scores

The data in Table 3 would appear to indicate that there is a relatively clear hierarchy in the quality ratings of the 14 major manufacturers. Should consumers therefore cancel their subscriptions to Consumer Reports and rely on the rule, "Once excellent, always excellent?"

Examination of Table 4, which presents the range in 1975 to 1984 annual quality scores calculated by Method 1, suggests not. From one year to the next, there was great variation in the scores earned by individual firms. Frigidaire (with an average score of 26.0 percent in 1976 and 91.0 percent in 1980), Hotpoint (15.5 percent, 1976; 72.3 percent, 1981), and Whirlpool (16.1 percent, 1984; 73.0 percent, 1983) showed the greatest range in annual quality scores. The annual average scores of Sears (50.0 percent, 1982; 66.0

percent, 1979) and Ward (53.3 percent, 1979; 72.7 percent, 1981) varied the least.

Year-to-year variations in product class scores were greater than for overall quality scores. The product class scores for 11 of the 14 manufacturers fell in either the top or bottom quartile in at least one year.

None of the firms demonstrated a pattern of steadily increasing or decreasing quality scores. Rather, changes from one year to the next appeared to be sporadic and unpredictable.

Price-Quality Orderliness

Table 5 contains data on the correspondence between price and quality rankings for eight firms with seven or more multiple-model tests in the 1975 to 1984 CR ratings. There does not appear to be a correlation between quality scores and whether a firm markets multiple models. Nor does a firm's quality score and the price-quality orderliness between its models orderliness between its models seem to be correlated. For example, Panasonic's Method 1 score was the third highest but only one-third of the prices and quality rankings of Panasonic models were completely orderly in multiple-model tests.

Table 6 summarizes the number of models in each of the four price-quality orderliness categories and includes models of all 14 manufacturers. As the number of models in a test increased, price-quality orderliness decreased. Over one-half of the two-model tests were completely orderly, compared to 7 percent of the tests containing four or more models.

TABLE 4. Range in Annual Average Method 1 Scores for 14 Selected Firms, 1975-1984

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
Range in Method 1 Annual Quality Scores								
Firm	Total Product Line		Electronic Equipment		Major Appliances		Small Appliances	
	From	To	From	To	From	To	From	To
RCA	13.5%	56.2%	13.5%	56.2%	-	-	-	-
Zenith	19.6	58.3	19.6	58.3	-	-	-	-
Panasonic	35.3	56.5	35.3	62.8	-	-	-	-
Whirlpool	16.1	73.0	-	-	16.1	73.0	-	-
GE	44.1	74.4	29.0	61.5	37.8	74.6	26.6	70.1
Sunbeam	45.0	67.0	-	-	-	-	44.5	67.0
Magnavox	35.0	100.0	35.0	100.0	-	-	-	-
Hotpoint	15.5	72.3	-	-	15.5	72.3	-	-
Sears	50.0	66.0	36.7	68.4	33.3	73.3	24.4	81.5
Penney	44.7	79.3	26.0	91.5	-	-	33.3	82.0
Frigidaire	26.0	91.0	-	-	26.0	91.0	-	-
Radio Shack	47.1	75.0	47.1	75.0	-	-	-	-
Ward	53.3	72.7	8.0	89.0	28.5	88.4	37.1	100.0
Westinghouse	43.8	81.4	-	-	43.8	81.4	-	-

TABLE 5. Orderliness of Price and Quality in Multi-Model Tests of Products of Eight American Firms, 1975-1984

Firms in Order of Mean Method 1 Score	Price-Quality Orderliness								Total N
	Completely Orderly		Partially Orderly		Disorderly (P or Q tied)		Completely Disorderly		
	N	Percent	N	Percent	N	Percent	N	Percent	
Panasonic	6	33.3%	3	16.7%	4	22.2%	5	27.8%	18
Whirlpool	5	71.4	0	0.0	0	0.0	2	28.6	7
GE	22	56.4	5	12.8	4	10.3	8	20.5	39
Sunbeam	8	40.0	5	25.0	4	20.0	3	15.0	20
Sears	92	53.2	28	16.2	23	13.3	30	17.3	173
Penney	37	57.8	5	7.8	9	14.1	13	20.3	64
Radio Shack	7	38.9	1	5.6	3	16.7	7	38.9	18
Ward	51	49.5	9	8.7	21	20.4	22	21.4	103

TABLE 6. 457 Multiple-Model Tests of 14 Selected Firms, by Number of Models Tested and Price-Quality Orderliness, 1975-1984

Number of Models	Price-Quality Orderliness								Total N
	Completely Orderly		Partially Orderly		Disorderly (P or Q tied)		Completely Disorderly		
	N	Percent	N	Percent	N	Percent	N	Percent	
2-Model Tests	194	58.8%	Impossible		49	14.8%	87	26.4%	330
3-Model Tests	42	42.0	34	34.0%	19	19.0	5	5.0	100
4-or-More-Model Tests	2	7.4	22	81.5	2	7.4	1	3.7	27
Total	238	52.1%	56	12.3%	70	15.3%	93	20.4%	457

Comparison to Morris' Results

Many of the results from the current research are similar to Morris'. In her research, the mean Method 1 quality score of 2347 models in 500 product tests was 55.6 percent (Morris 1971b, p. 128) compared to 53.9 percent in the current research. RCA and Zenith, the firms ranked first and second by each method in the current research, were also the top-ranked firms in Morris' research. However, Zenith ranked higher than RCA in the 1960 to 1969 tests by all three methods.

Morris also found wide year-to-year variations in firms' annual quality scores. In contrast, she found that firms with higher than average quality scores were also the ones that marketed multiple models and tended to have more orderly multiple-model tests. These findings were not supported by the current research.

DISCUSSION

Limitations of the study are primarily those inherent in the use of CR data. Since CR generally does not provide information on the degree of quality differences between models, only crude measures of overall quality rankings were possible. Thus, the quality scores indicate only relative quality and do not provide any information on absolute quality. Furthermore, changes in a firm's quality scores from one year to the next may not mean that the quality of that firm's products has changed. Because the quality scores are rank order comparisons, changes in the quality of one firm's models affects the scores of other firms.

The overall quality rankings are also valid only to the extent that consumers agree with CR's quality ratings. A consumer's assessment of the relative importance of product characteristics may differ significantly from that of the CU staff or a consumer may value product characteristics (such as aesthetic qualities) which were not evaluated by CR in rating product quality.

Moreover, although significant differences were not found between firms' quality scores for individual product classes and those companies' overall quality scores, significant differences may exist within product classes. The quality scores for a manufacturer's refrigerators may be significantly different from the quality scores of other major appliances marketed by the same firm, for example. The infrequency with which CR retests products makes it difficult, however, to conduct any meaningful assessment of the consistency of individual brands' quality rankings for specific products.

Finally, the measure of price-quality orderliness is imperfect. Factors affecting price but not rated by CR, such as packaging or advertising, may explain part of the disorderliness observed. Also, the number of firms marketing multiple models may be

underreported if CR chose to report on only one of a firm's models in a product test.

Despite the limitations, the results unquestionably support the conclusion Morris reached 15 years earlier. Consumers cannot rely on a firm's past quality ratings as an indication of future performance. Year-to-year variations in both overall quality scores and scores for individual product classes were the rule rather than the exception. Furthermore, during the ten-year period examined, one or more of the models of each manufacturer achieved the lowest possible ranking. No firm, regardless of its overall ranking, failed to produce at least one top-rated model. Moreover, the tests of price-quality orderliness indicate that list prices of the various models of a firm frequently do not correspond to their relative quality. As Morris (1971a, p. 18) concludes, "At any given time, one would be foolish indeed to count on any firm doing an outstanding job on any or all of its products, solely on the basis of its past performance. . . . Wise buyers will consult . . . the monthly (Consumer) Reports on a product-by-product, model-by-model, and year-by-year basis."

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Overview

The papers in this session illustrate something of the richness of consumer-related research. We have one paper which explores an emerging concern (clothing purchases by the elderly) and two others which examine more established issues in light of current developments. Pushing into new areas, while reassessing and replicating earlier work seems to me to strike a healthy balance and evidences a degree of maturity in the field.

My comments on Prof. Norum's paper (apparel-shopping problems of the elderly) will be fairly brief because it is a preliminary study. I have something more to say on Meloy, et al (analysis of grocery coupon users) in part because of the questions they raise and in part because of the questions they leave unanswered. I will conclude with Prof. Cude's paper (quality assessments), which raises a number of intriguing issues. Let me note, finally, that these comments are based on copies of the papers I was provided prior to the Conference and therefore may not reflect the versions printed here.

On Norum: Apparel-Shopping & the Elderly

Prof. Norum is to be congratulated for her efforts to deal with an issue of growing importance. We have heard a great deal of talk about the impact of an aging population, but most of it has been just that -- Talk! Dr. Norum has taken the issue a step further and explored a specific, and significant, implication of that development.

I congratulate her, too, on the tone of her inquiry. She has dealt with the issue in a straightforward manner which treats aging in its proper developmental terms. Special needs of the older consumer are dealt with, but there is no sense of "a pathology of aging."

Because of the preliminary nature of the study, possibilities for statistical analysis are limited. As she continues this line of inquiry, I would make the following suggestions:

1. The abstract maintains that the greatest value of the study was in the development of the instrument, but that point was not developed in the body of the paper.
2. Note is made of the limited number of information sources used by the older consumer. As the population ages to include people who

have more experience with things such as unit pricing, the situation may change.

3. Budget information on the older consumer would be helpful (e.g., what portion of the budget goes to apparel?).
4. The SEW variable is used as a proxy for knowledge, but might also relate to willingness to attempt alterations.
5. The entire question might be considered in terms of a more general model. Household production is one possibility, with implications being drawn from the lower cost of time (and hence the greater willingness to use time) among older consumers.

Meloy, et al, on Use of Coupons

In their investigation of grocery coupons, Prof's. Meloy, McLaughlin and Kramer continue a long-standing concern in the consumer literature. As they point out, the growing use of coupons marks the topic as an on-going area of interest.

There are a number of issues which I would like to raise about their paper, beginning with their comments on changes in the family. They are not alone in this respect, but I think it is time we stoped being surprised that Ozzie and Harriet are no longer the norm for families in the United States. The emergence of the dual earner family was confirmed by the 1980 census, based on data from 1979 which probably reflected changes which had taken place earlier. Thus, what the authors call "traditional standards" could easily have been outmoded for 15 years or more. That point is important, because if we are looking for changes in consumer behavior associated with changes in family time use, we should be focusing on the mid-1970's, not the late 1980's.

I must also take exception with the authors' contention that the \$2.75 billion worth of coupons redeemed in 1986 marks a "'savings' . . . from what would otherwise have been spent." That would be bad news to the companies issuing the coupons, for it would mean coupons had no impact (and the companies wasted a lot of money). Obviously, it cannot be assumed that consumers would have spent the same amount on the same items in the absence of coupons.

The authors' carefully drawn sample provides insight into coupon use. The consumer's tendency to use coupons for products he or she is already buying is of special note, with implications for the use of coupons when new products are introduced (as the authors indicate).

In the end, though, I found myself wondering more about the questions which hadn't been asked than about the findings reported in the paper. The reason for that, I believe, is that the paper is essentially a marketing study. There are concerns which relate to the consumer and some implications for public policy, but neither is the real focus of the paper.

Having said that, it is incumbent on me to say something about what I think the consumer perspective is in this case. It begins by viewing coupons, like advertising and packaging, as a marketing tool used by sellers. All three, of course, result in higher prices to consumers; in the case of coupons, the brunt of the increase is borne by non-users.

The interesting questions, it seems to me, are associated with the tremendous changes which have taken place in American eating habits this decade. These include:

- continued increase in meals eaten away from home;
- decline of the traditional evening meal for which family members sit down together;
- tremendous growth in sales of pre-prepared meals; and, more recently the
- widescale introduction of microwave-ready containers.

These developments are commonly taken to be a lagged response to changes in the family. I don't think anyone would maintain that coupons have caused any of this, but there is reason to believe that the changes have made coupons more important. For one thing, coupons have become more prevalent; most fast-food establishments now give grocery-type coupons.

More importantly, the shift away from basic grocery items to prepared meals is a shift toward products which are more likely to offer coupons (because coupons are offered by the manufacturer of the prepared foods). Similarly, the introduction of new products and campaigns to promote newly repackaged products typically rely heavily on coupons.

At a more subtle level, consider today's typical family "non-meal," which is characterized by family members eating individually, on the run or in front of the TV. Contrast that with the more traditional exercise of family members sharing the same food at the same time in the same place. Each family member is now more likely to have his or her own single-serving item fresh from the microwave. Each of those items is likely to have a coupon, which raises the potential number of coupons tremendously! The whole eating environment has changed. For many families, the question isn't: "Should we eat at home or eat out?" but rather: "Should we get our fast food out or get it at home? Research on the role of coupons should be instructive. However, I don't believe that is a central

question. The amount which coupons save users (or cost non-users) is minimal compared to the added cost consumers choose to pay by opting to eat the way they do. For all their promotional expenditures, I don't believe sellers are driving the market; they are merely responding to changes in family eating habits. That is the change which we need first to recognize and then to explore systematically.

Cude on Consistency of Product Quality

Prof. Cude has taken on a most bedeviling topic: can we generalize about manufacturer's product quality over time? It is certainly a question which manufacturer's believe is important. Think of all the advertisements you see which stress quality; businesses spend billions to associate their name with quality in the consumer's mind.

Judging from Prof. Cude's results, they would be better off putting that money into improving their products. The degree of variation makes generalizations difficult and leaves the consumer, as she notes in her conclusion, with a new challenge each time he or she goes into the market.

With that in mind, I would like to make a few general comments, most of which focus more on this line of research than on the particulars of this paper. In terms of the latter, however, I would suggest that Prof. Cude develop the idea of "orderlyness" of prices more fully. She defines the concept and reports the findings, but does not really develop the point.

On that same topic, I would repeat Scott Maynes' comment about prices as reported in Consumer's Reports. Given the degree of price variation, it is difficult to make judgments based on the price as reported in CR. Of course, that is CR's problem, but that makes it Prof. Cude's problem, too.

The same could be said for the more general question of the validity of the types of data she is using (and, again, I am sounding like Scott Maynes). Prof. Cude details these points, especially the importance of the assumptions made about the intervals in ordinal data. A note on limitations, however, may not be sufficient. Thus, I contend that instead of measuring "Consistency in the Quality of Products," the paper

really deals with "Consistency in the Measures of the Quality of Products.

Consider Figure 1 (over leaf) with three brands and three tests. Brand C ranks first in two of the three tests and using ordinal measures, would have the best overall score by either Method 1 or 2 as outlined in the paper. That provides reliability, but in this case, the validity is in question. Using the cardinal measures available here, Brand C is actually the worst.

FIGURE 1: Hypothetical Test Results

Brand	Actual Scores for Test		
	#1	#2	#3
A	91	85	86
B	90	86	85
C	82	87	87

Those figures are obviously contrived, but they are certainly plausible. Some recent work we have been doing at the University of Georgia makes me wary for another reason. We undertook a product evaluation study for the Roper Corporation consisting of eight different tests on 20 ranges. Some tests had over 10 parts with as many as 3,000 bits of data.

Thus, we had to define weights for each component of each test and then for the tests themselves in order to come up with an overall score. Fortunately, we found that the weights did not have a major impact on the final scores. We noticed, however, that although numerical changes were small, rankings of the models proved highly sensitive to changing the weights (because results were clustered).

The data in Figure 2 are actual rankings for the top four ranges. The variations are evident and it is clear that the changes in weights would have a major impact using the Morris/Cude methods. Thus, it is possible that what appears to be variation in quality may actually be variation in the quality measure.

FIGURE 2: Impact of Weights on Product Rankings

Brand	Ranks with Differing Weights			
	W1	W2	W3	W4
A	1	2	1	2
B	2	1	2	3
C	3	5	4	1
D	4	4	6	5

Note that CR reports neither the scores nor the weights employed. That makes generalizations most difficult. Does that mean this line of research leads to nothing with the data available? We cannot even answer that questions with certainty because we do not know how pervasive the ordinal-to-cardinal bias is or what weights are used. I am convinced that the problems are significant, but no one can demonstrate that fact.

The conclusion, then, is obvious. It is time for CR to be more forthcoming with information. Consumers' Union says it doesn't publish actual scores because readers would be confused by numbers. That is a rather weak argument for an organization which supports disclosure of numbers for nutritional value, annual percentage rates and EPA mileage ratings on automobiles.

IMPERFECT INFORMATION AND THE PRICE-QUALITY RELATIONSHIP

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An analysis of the literature reporting research on the association between price and quality suggests that consumer markets are not working well. Price and quality are generally poorly related which indicates that consumers are making purchase decisions with inadequate information.

This paper freely draws from an earlier paper presented at the International Conference on Research in the Consumer Interest (Geistfeld, 1988). The earlier paper presents a critical overview of the price-quality research. This paper will focus on selected articles which provide an overview of the price-quality research of U.S. markets without focusing on important conceptual and methodological issues.

The fundamental issue to be considered is whether or not consumers are efficient in their purchase decision making activities. Efficient consumer decision making occurs when "consumers use their limited financial, material, time and human resources in a way such that the greatest bundle of goods possible is obtained through a purchase decision." (Geistfeld, 1981:44). If consumers make purchase decisions with inadequate information, it is likely that they will be inefficient with respect to purchase decisions--that is they will not be acquiring the "greatest bundle of goods possible."

The issue becomes one of how to assess whether or not consumers are acquiring the greatest possible bundle. One way to assess this is to examine the association between price and quality. If consumers are efficient with respect to their purchase decisions, they will not "overpay" for goods or services. In other words, they will pay more for a given model of a product only to the extent that it provides additional quality. This suggests efficient markets should exhibit a close association between price and quality. If this close association does not exist, markets are inefficient and consumers are making decisions with imperfect information.

The first research to examine the association between price and quality was performed by Oxenfeldt (1950). He studied 35 products from 36 tests reported in Consumer Reports (CR) between 1939 and 1949. The Spearman rank order correlation coefficients ranged from -0.81 to 0.82 with a mean of 0.25 and median of 0.34. Twenty-five percent of the coefficients were negative. He concluded that the relationship between price and quality was generally weak.

In what is the most frequently cited paper in this literature, Morris and Bronson (1969), using CR data for 48 product tests reported between 1958 and 1967, found Spearman coefficients ranging between -0.66 and 0.96 with a mean of 0.29 and a median of 0.36. Twenty-one percent of the correlation coefficients were negative. They also found wide shifts over time in the price-quality correlations for detergents, manual defrost-top freezer refrigerators and vacuum cleaners. They concluded that the correlation between price and quality was so low as to be meaningless and that the correlations were not stable and shifted over time.

Sproles (1977) used data from 135 tests appearing in CR and Consumers Research Magazine (CRM) from 1972 to 1974. He found Spearman coefficients ranging from -0.66 to 0.90 with a mean of 0.26 and a median of 0.34. Twenty-three percent of the coefficients were negative. Sproles concluded by noting that "an objective price-quality relationship cannot be generalized across products...[and] consumers following the decision rule of price-equals-quality would perhaps make satisfactory or maximizing decisions in over half of their choices." (p. 74)

Geistfeld (1982) used price data collected in Indianapolis and Lafayette, Indiana, and quality data published in CR/CRM between 1976 and 1979. He found Spearman coefficients for Lafayette ranging from -0.82 to 0.79 with a mean of 0.11 and a median of 0.12; 38% of the coefficients were negative. For Indianapolis he found coefficients ranging from -0.75 to 0.83 with a mean of 0.19 and a median of 0.38; 36% of the coefficients were negative. Geistfeld concluded that the price-quality relationship varies across markets and by store type.

Using data on running shoes published in Runner's World, October 1979, Archibald, Haulman and Moody (1983) found a rank order correlation of 0.21. They concluded that while the price quality relationship was positive, it was at a level suggesting that good and bad buys tend to co-exist in the market.

In a recent article, Ginter, Young and Dickson (1987) studied the association between price and quality in the used car market. Maintenance and repair information published in the April 1982 issue of CR was used to assess quality and prices were those published in the January 1983 central edition of the National Automobile Dealer Association Official Used Car Guide. Their methodology utilized multiple regression analysis. In general they found that reliability as reflected in maintenance and repair indices was not associated with price.

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Duncan (1981) used actual test scores for SLR cameras published in CR, November 1974 and for pocket cameras published in CR, June 1978. Price data came from store surveys in Ann Arbor, Michigan. He employed the concept of the perfect information frontier which is "the set of points, and the line segments connecting them, for which a given level of quality may be purchased at the lowest price" (Maynes, 1976:535) and correlation analysis. Duncan found that pocket cameras tended to be more closely clustered around the PIF than are SLR cameras which was confirmed by a zero-order correlation coefficient of 0.11 for SLR cameras and 0.68 for pocket cameras. He noted that the price dispersion was too large to be solely attributed to search costs; that over time, lower quality varieties tend to disappear more quickly from the market than higher quality varieties; and that price dispersion tends to decrease while price-quality correlations increase over time.

The most extensive study using the PIF concept was reported by Maynes and Assum (1982). The Syracuse, New York market was the source of price data with cardinal measures of quality being constructed by the authors from CR ratings. Of the 17 products analyzed, 23% had the highest price exceeding the lowest price by less than 30%, while 42% had the highest price exceeding the lowest price by 100% or more.

What does this research suggest with respect to the efficient operation of markets? Are consumers swimming in a sea of imperfect information? The answer is yes!

The generally weak association between price and quality reported in studies using the Spearman rank order correlation coefficient suggests that markets are not working well. The studies reported here have an average Spearman coefficient of 0.22. It should also be noted that no median value approaches 0.50 reinforcing the sense that markets are not working well.

It is important to note that this conclusion is reinforced by results of studies using a variety of data sources and analytical methods. Price data from local consumer markets was used by Geistfeld (1982); quality data from a source other than CR/CRM was used by Archibald, Haulman, and Moody (1983); a different analytical procedure, multiple regression, was used by Ginter, Young and Dickson (1987); a fundamentally different measure of quality (a cardinal measure) was used by Duncan (1981) and Maynes and Assum (1982). While all consumer markets are not operating poorly, a review of the price-quality literature suggests there is cause for concern.

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CREDIT RATIONING AS A CONSTRAINT ON THE
FINANCIAL FUTURE OF FAMILIES

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ABSTRACT

As a component in financial management, credit can have a major impact on the destiny of families. One factor which acts as a constraint on the financial futures of families regarding credit is referred to as credit rationing. This paper investigates the effect of various household credit factors on rationed status. Using stepwise discriminant analysis to predict rationed status of dual-earner families and female householders, this research identifies the impact of the credit factors on predicting the rationed status of the two family types. Results indicate that the factors which influence rationed status do not differ substantially between family types.

The use of household financial resources in the present clearly can affect a family's future. As a component in financial management, credit can have a major impact on the destiny of families. Researchers have shown that through the use of credit, the family's income stream could be used to meet desired family consumption levels across the life cycle. Herendeen suggested that consumption in the present by using future income, i.e. incurring debt, can lead to utility maximization. By borrowing against future income, a household can accumulate earning assets "in order to increase its income stream" or "it can accumulate consumer durable assets in order to increase its flow of consumption services" (Herendeen, 1974).

The ideal level of debt for utility maximization varies for each family as do the factors which affect credit-use levels for each family. The amount of debt a family incurs in order to reconcile present demands with both present and future income is a function of many factors. Some factors involve a degree of choice, while other factors act as constraints on a family's demand for credit.

BACKGROUND

One factor which acts as a constraint regarding credit use is referred to as credit rationing. Credit rationing occurs when a consumer "receives a smaller loan than he would desire at the interest rate charged by the bank" (Keeton, 1979) indicating that the supply of credit is rationed through nonprice elements, in particular, elements reflecting the borrowers willingness and ability to repay the loan. Families which have been turned down completely or have received less money than requested are rationed. All other households are unrationed (Juster and Shay, 1964).

The actual granting or refusing to grant credit is not a matter of choice for the family, but rather is a decision within the control of the lender. Although many financial decisions are made by the family itself, they have an impact on other financial decisions made for the family. Specifically, suppliers of credit make decisions based on the financial status of the family when credit is requested. Previous research looking at credit rationing has attempted to identify characteristics to be used to predict whether a family would be rationed or unrationed. Juster and Shay showed that marital status, length of marriage, after-tax income, age, attitude about credit and knowledge of credit information could be used to predict rationed status (Juster and Shay, 1964). Walker and Sauter looked at rationed and unrationed households with respect to credit contract terms, the purchase price of the good and family demographics (Walker and Sauter, 1974). Little effort has been made to look at household rationed status with regard to family credit variables.

PURPOSE

If rationed status could be predicted using household debt characteristics, households could manage their finances in the present in order to be better assured of obtaining the credit they might desire in the future. Financial management and counselling experts would have more information for clients when advising them regarding financial patterns for the future. Having this information in advance of the need for credit would afford families increased control over their financial futures. Furthermore, it is important to understand that different family types differ in financial position and therefore different factors might affect their financial futures.

This paper investigates some credit factors which are believed to have an effect on the rationed status of different types of families. Lenders grant credit on the basis of the degree of risk they are willing to assume; they must assess the household's willingness and ability to repay the loan being requested. Willingness and ability to repay depend on several factors, among them are current income, current assets, future income potential, existing debt level and previous repayment performance. It follows, then, that these factors affect the rationed status of households. It is expected that the impact of these factors will vary with different family types, thus this research will identify the impact of these factors on predicting the rationed status for different families. Information of this type would be beneficial in the financial counselling of families.

Presently, little, if any, distinction is made among different household types when counselling.

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Preliminary research suggests that credit behavior and factors affecting this behavior vary with household type. It is logical, therefore, that credit/financial counselling should vary in a manner corresponding to behavior patterns.

METHODOLOGY

Using stepwise discriminant analysis to predict rationed status, two different household types are investigated: dual-earner households and households with female heads having children under age 18. The data used for this study are from the 1979 Consumer Credit Survey, Purdue University Credit Research Center. There are 368 dual-earner families (DEF), 77% of which are unrationed and 23% are rationed. Of the 81 female householder families (FHWC), approximately 59% are unrationed while 41% are rationed. Rationed/unrationed is used as the criterion variable. The discriminating variables included in the study are:

- value of liquid assets (LAS),
- prospects of future income (FINC),
- past loan repayment patterns (PLRP),
- total credit line on all credit card accounts (TCLCC),
- perception of future repayment patterns (PFRP),
- past credit card repayment patterns (PCCR),
- total owed on all credit card accounts (TOCCA), and
- total monthly amount owed on installment loans/monthly household disposable income (DEBTINC).

Total number of credit card accounts was initially included, but due to its high correlation with total owed on all credit card accounts, it was eliminated from further analysis.

RESULTS

Of the 81 FHWC families included in the study, 43 are rationed and 38 are unrationed. The mean debt-income ratio for the unrationed group is about 3%; for the rationed group, it is 11%. For the unrationed group, the mean total credit line on all credit card accounts was about three times greater than that of the rationed group, \$731.58 and \$239.53, respectively (Table 1). Three of the initial eight variables included in the model are identified as discriminating between the two groups, DEBTINC, TCLCC, and PLRP. However, only DEBTINC is significant ($p=0.02$). The three variables included in the function explain only about 12% of the variance in rationed status. The function is significant ($p=0.018$). DEBTINC entered the function first, TCLCC second and PLRP third. Table 2 identifies the coefficients of each discriminating variable. About 62.6% of the cases in the FHWC model were correctly classified.

Slightly over 30% (113) of the families in the DEF model are rationed while the remaining are unrationed (255). The mean DEBTINC for the rationed group is 11%, for the unrationed group, 8%. The mean TCLCC for the unrationed group was nearly twice that of the rationed group, \$2010 compared to \$1140 (Table 1). Four of the initial eight variables are included in the discriminating function. They are, in order of entering: PLRP, TCLCC, DEBTINC, and PFRP. These four variables explain only about 8% of the variance in rationed status for the DEF families. The function is significant, however, at the 0.00 level. (See Table 2 for coefficients.) Nearly 68.9% of the cases in the DEF model were classified correctly.

As shown in Table 2, higher debt-income ratios are associated with unrationed families as is having repaid past loans on time for both the DEF and

Table 1 Means and Standard Deviations for All Variables

Variables	FHWC Model				DEF Model			
	Means		St. Deviations		Means		St. Deviations	
	Unrationed	Rationed	Unrationed	Rationed	Unrationed	Rationed	Unrationed	Rationed
Debt-Income Ratio	0.034	0.107	0.060	0.187	0.081	0.112	0.113	0.086
Value of Liquid Assets	7922.303	10843.093	13735.446	17687.203	53307.388	46577.164	55597.971	47163.269
Total Credit Line on All Credit Card Accounts	731.579	239.535	1902.361	536.030	2010.333	1140.947	2626.950	1745.497
Total Owed on All Credit Card Accounts	163.053	138.256	524.778	301.867	570.231	309.097	1543.845	509.067
Past Loan Repayment Patterns ^a	0.211	0.372	0.413	0.489	0.098	0.265	0.298	0.444
Past Credit Card Repayment Patterns ^b	0.211	0.256	0.413	0.441	0.404	0.354	0.492	0.480
Perception of Future Repayment Patterns ^c	0.711	0.628	0.460	0.489	0.925	0.823	0.263	0.383

^a1=on time; 0=not always on time.

^b1=don't always pay in full on all; 0=all others.

^c1=trouble unlikely; 0=trouble likely.

Table 2 Effect of Credit Factors on Rationed Status^a

Variables	FHWC Model	DEF Model
Debt-Income Ratio	0.745 (0.0218)	0.401 (0.0000)
Past Loan Repayment Patterns	0.468 (0.1221)	0.560 (0.0000)
Total Credit Line on All Credit Card Accounts	-0.526 (0.0694)	-0.460 (0.0059)
Perception of Future Repayment Patterns	—	-0.260 (0.1543)
Canonical Correlation	0.3489	0.2895
R ²	0.1217	0.0838
Significance Level	0.0181	0.0000
Prediction	0.6262	0.6859

^aRationed=0; Unrationed=1

FHWC models. Total credit line on all credit cards is associated with rationed families for both models; as the credit line increases, the more likely the household is to be rationed. These three variables are included in both models. Each is significant in the DEF model while only the debt-income ratio is significant in the FHWC model. Although not significant in itself, perception of future repayment patterns contributes to the significance of the entire DEF discriminant function. The likelihood of future repayment problems is associated with unrationed families. This could suggest that families perceiving the possibility of repayment problems would not apply for credit, therefore, would not be subject to rationing.

DISCUSSION AND CONCLUSIONS

The results suggest that of all the family credit variables used in the study, the debt-income ratio has the greatest impact on rationed status of the FHWC family. PLRP have the greatest impact on the rationed status of the DEF family. Consequently, these two factors have the greatest impact on the financial futures of the respective families.

The lack of significance of the TCLCC and the PLRP variables in the FHWC model indicate that more elements enter into the rationing process for these families which were not sorted out or accounted for in the analysis. Similar conclusions can be drawn regarding PFRP in the DEF model.

Comparing the two models, it is interesting to note that DEBTINC, TCLCC and PLRP entered each. This result was not expected as it was originally suggested that different variables would discriminate between rationed and unrationed families for each model. Perhaps some demographic factors included in the analyses would allow for more clear differences between models, for example, age of

household head and number and ages of children living in the household.

Explained variance is low in both models. This could reflect the heterogeneous nature of the subsamples used. Employment status and other factors not included in this study could vary considerably within each subsample. Furthermore, the size of some of the standard deviations (Table 1) indicates a great deal of dispersion within groups. In addition, the models might be misspecified. That is, as suggested earlier, variables are omitted that should have been included.

Results of this research and similar future works will aid in identifying the extent to which households have control of their destinies with regard to one aspect of credit-use behavior, rationed status. Factors have been identified herein which contribute to the determination of risk levels by lenders. Subsequently, families can be helped in their financial planning in the present in order to avoid credit refusal in the future.

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COLLEGE STUDENT USE OF CONSUMER CREDIT

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ABSTRACT

A case study of credit use by college students enrolled in Personal and Family Finance classes first describes and compares the personal money management profiles of males and females, and then identifies items that are correlated with three credit variables: freedom from debt, adequacy of credit and extent to which carrying a credit card encourages more spending. Implications are drawn for financial educators, counselors and planners.

Marketers of credit target the young, the higher educated, the higher income consumer. This is seen on college campuses in the distribution of credit applications, ads in campus publications, the hiring of campus representatives to encourage potential car purchasers through use of credit and through provision for tuition and other charges to be financed through use of credit cards. Banking services such as overdraft accounts facilitate loans for users of automatic teller machines. Not all college students find it easy to establish credit accounts, however, because they often have no collateral.

While the regular use of credit cards is related primarily to current day-to-day handling of money and to short term credit management, the increasing use of student loans and of extended periods for financing autos are important types of consumer debt that are carried over after graduation. Policy makers are beginning to wonder whether students loans are overburdening a generation (Hansen 1986).

College students enrolled in Personal and Family Finance courses represent a population who have availed themselves of the opportunity to gain knowledge and understanding. Educators and financial counselors and planners would appear to have a particular need to understand this group, some of whom will be future consumers of their services and some of whom will become colleagues. There appears to have been more research dealing with children and adolescents than with the college population. In studies of the population as a whole, college students have been classified along with homemakers and the unemployed because they are outside the regular labor force, making it difficult to apply traditional economic criteria in evaluation of their use of credit (Ryan and Maynes 1969; McAlister and Kinsey 1979).

The purposes of this study are: (1) to describe student use of credit and to note possible gender differences, and (2) to gain a better understanding of the relationship of selected money management attitudes and behaviors of college students to debt level, adequacy of credit and credit card spending.

SUMMARY OF RESEARCH

It has been noted that credit is used more by young householders, and that the young are also the more likely to be over-indebted. The studies reported have focused on the credit use of established households; assumptions about college students have generally had to be based on the fact that they fall in a certain age category or that they represent a particular level of education.

Economists have found debt-to-income ratio to be an important indicator of a manageable credit limit (Ryan and Maynes 1969; Dunkelberg and Johnson 1975; McAlister and Kinsey 1979; Marlowe 1981; Dessart and Kuyler 1986). Other objective criteria include demographics, size of monthly payments, interest expenses, and notices of arrears in payments (Dessart and Kuyler 1986). The results of credit studies may not be comparable because different techniques are required for revolving credit and instalment credit as well as for convenience credit and credit which becomes debt.

Studies of the over-indebted provide clues as to potential danger signals. Generally use of credit is correlated with knowledge about credit, but Dessart and Kuyler (1986) found that the relationship between level of knowledge about credit and problematic debt situation was curvilinear. "It appears that those who claim little knowledge, regardless of whether the actual level of knowledge is high or low, are far more cautious in their decisions and have a lower probability for the problematic debt situation. On the other hand, people who have a low to moderate level of knowledge about forms of credit and financial institutions, but who are not aware of their lack of knowledge, run a far greater risk of a problematic debt situation" (Dessart and Kuyler 1986, p. 323). Knowledge about credit and attitudes toward credit are correlated with practices (Danes and Hira 1986). A causal relationship has not been established; practices may also contribute to knowledge and attitudes (Greninger 1986). Large numbers of people do not know the Annual Percentage Rate of their loans, and, if they do, they can not translate it into reasonably accurate dollar figures (McAlister and Kinsey 1979).

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Dessart and Kuyler (1986) found locus of control to be one of several psychological variables which was most discriminating in relation to problematic debt situations. Other psychological factors promoting debt problems were: the way the respondent viewed the development of the economy, being chiefly oriented to the future or past, not willing to defer satisfaction of needs in the short term, and not considering financial management as very important.

It is important to examine the role of credit in the context of overall money management. Courtless (1971) found evidence that 7% of family debt level was being financed at the expense of food. This was more likely to be observed in families with no children. Hira (1986) in surveying two-earner families concluded that the amount of monthly debt payment and paying finance charges rather than total debt appear to be related to their satisfaction level. Seventy four percent credited the ability to stay out of debt and 87% attributed their ability to pay back money owed as factors associated with satisfaction. A later study by the same researcher (Hira 1987) found that higher levels of assets were associated with having more credit cards and being comfortable with owing more. This study did not provide data on level of liabilities. It is, however, general knowledge that creditors are more likely to grant additional credit to those who already have accounts; a practice that is questioned by Dessart and Kuylen (1986) on the basis that this appears to be associated with problematic debt situations.

Noyes (1982) found that working wives and non-working wives held similar attitudes toward credit: There was agreement in their approval of the use of credit in case of illness or accidents, car purchase and education. Families of working wives saved less and paid more in monthly credit payments than families of non-working wives.

The belief that one's life can be or should be directed by one's values is shared by many fields of study. Linck (1982) using the high ranking items from each of 5 economic values identified by Price (1968), found that what respondents stated as highest values were the areas in which they were least willing to make sacrifices. Painter and Hayes (1982) found female college students with a self-fulfillment orientation more likely than those who did not have this orientation to think that people get into serious debt problems because of lack of knowledge about money and credit. Possession of credit cards (Hirschman 1979) and even association with symbols of credit cards (Feinberg, 1986) are associated with increased spending. Some studies have focused on the use of Electronic Funds Transfers (EFTS) and credit because they both involve plastic cards, and because the overdraft feature of debit cards and automatic payments may automatically activate a loan (Dunkelberg and Johnson 1975; Churaman (1984).

Some important non-economic indicators which provide qualitative insight into credit use have been identified in the review of literature. One might predict that those who are more debt free are those with more adequate resources and higher economic status. One would also expect that they feel that control of their money is important and that self control is not a problem for them. In general one would expect them to have a more internal locus of control and higher levels of satisfaction. Also, one might logically expect those who put a higher value on security to be more likely to minimize debt levels.

It has been recognized that for some people carrying a credit card represents a temptation to spend more. It might be predicted that these individuals are less likely to feel in control, to be more impulsive spenders, to value self-indulgence. This characteristic would also seem to be associated with an external locus of control, including more attribution to luck. The results of this behavior would be expected to bring a lower satisfaction level than that experienced by individuals who do not have such temptation to spend more when carrying a credit card.

The literature suggests that it would be difficult to predict and possibly to interpret many of the factors that could be associated with adequacy of credit. This will have merely an exploratory examination.

METHODOLOGY

Written surveys were used in Personal and Family Finance classes at a major university during the 1985-86 school year and the 1986-87 school year. See Table 1.

TABLE 1. Instruments, Timing and Respondents

Instruments	Survey Conducted	Alpha*
Personal Money Management Profile (PMMP)	1986-87 first class period N=161	39 items .82
Financial Locus of Control (FLOC)	1986-87 first or second class period N=161	24-item sub-scales .58 to .86
Financial Value System	1986-87 second class period N=88	15 items .67
Method of Payment	1985-85 before credit unit N=132	
Credit Survey	1986-87 N=159	

*Cronbach alpha to examine internal consistency. The FLOC has subscales: internality .86, externality .58, success .81 and failure .68.

The first three instruments form part of a broader study of personal money management. The PMMP includes resource adequacy items from the study by Rowland, Dodder and Nickols (1985