

out of short-run financial need. The acceptance of any infomercial is a statement by the station or network of its limited advertising income and constrained ability to fill the available program space. Cable network representatives maintain that they are restricting the infomercials to smaller and smaller broadcast segments as they are able to get programs and sell advertising time on their own.

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HOW TO SHOP FOR FOOD: A LOOK AT THE ADVICE
OFFERED BY CONSUMER EDUCATORS AND ITS
BEHAVIORAL SCIENCE SUPPORT

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This study examines the behavioral science support for a set of 20 food buying principles that a content analysis revealed were the most commonly cited in consumer education textbooks in the 1980's. Three types of principles were found which differ in the consumer behaviors they recommend as well as the nature and strength of support they have received in the behavioral science literature.

With the revival of the consumer movement in the United States in the mid-1960's has come a surge of interest in consumer education programs. Although practitioners in the field of consumer affairs have welcomed this development, some scholars have expressed skepticism about the value of these programs. For example, Seitz (1972) has questioned the effectiveness of consumer education as a means for achieving efficient market performance; and Langrehr and Mason (1977) have documented program failure by citing evidence, supported by Hawkins (1977), which finds that "Most research to date has revealed that a course in consumer economics or economics does not significantly change a student's consumer competency."

While the reasons consumer education programs often fail to demonstrate effectiveness are not altogether clear, two researchers (Brown and Dimsdale, 1973) have pointed to the educators' limited scientific knowledge of consumer behavior as a contributing factor. This observation, which has been echoed by Sommer (1982), seems especially apt when one considers that most courses in consumer education are taught by instructors with primary training not in the behavioral sciences but in a field of applied economics, such as consumer economics, family economics or home economics. Authors of textbooks in consumer education have much the same background.

In recent years the impact of behavioral science variables on consumers has been made dramatically evident through the findings of literally thousands of research studies. Since 1970 a dozen new scholarly journals have been established to publish this outpouring of scholarly studies on such influences as perceptual, motivational, and cognitive variables on consumer behavior. Unfortunately, however, as suggested by the Brown and Dimsdale observation, the fields of consumer education and consumer behavior have far too often continued to remain apart. As a result, the recommendations of consumer educators often stress what consumers should do without sufficient appreciation of what they do do and can do. It is

this gap between the two disciplinary fields which the current study attempts to bridge.

The study attempts to account for the lack of demonstrated effectiveness of consumer education programs by systematically assessing the behavioral science support for shopping principles or guidelines often found in consumer education courses and materials. The focus of the study is on food buying principles frequently mentioned in recently published consumer education textbooks.

METHOD

The first procedural step was identification of a set of textbooks to serve as the sample of material from which food-buying principles would be extracted. This task was accomplished by drawing upon textbook publishers as well as other sources of information. Forty textbook publishers active in consumer education were each sent a questionnaire along with a letter requesting help in identifying textbooks currently being offered which would be appropriate for the study. Specifically requested were titles of consumer education or consumer economic textbooks used at the college, senior high, and junior high levels, and containing chapters or major sections on food buying for consumers.

Twelve responses to these requests were received. One was particularly helpful in that it contained a list of the titles of the most commonly purchased, consumer education textbooks at the college, senior high, and junior high levels. Two additional sources of titles of commonly used textbooks in consumer and economic education were the American Council on Consumer Interests (the organization's newsletters list new textbooks in the field), and the Michigan Consumer Education Center at Eastern Michigan University (the Center's library contains many new textbooks).

From these various sources 24 textbook candidates for the study were identified. Six titles were then pruned from the list. Three were dropped due to datedness (having copyrights earlier than 1980). Another three were eliminated due to duplicate authors. When there was a choice between textbooks by the same author(s), the book with the more recent copyright was retained for the study. After the six eliminations, the remaining 18 textbooks listed in Table I constituted the study sample. They consisted of three college-level books, twelve senior-high-level books, and three junior-high-level books.

As indicated earlier, the focus of the study was the recommended food buying principles contained in the food buying chapters or major sections of

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Table 1. Textbooks Analyzed and Their Educational Levels

Developing Consumer Attitudes by Joseph G. Bonnice and Rosella Bannister (junior high)

Decisions: Making Personal Economic Choices by Judith Staley Brenneke and Mary Lou Hamill (senior high)

The Confident Consumer by Sally R. Campbell (senior high)

Introduction to Business: The Economy and You by Anne Scott Daughtrey, Robert A. Ristau, and Steven A. Egglund (senior high)

Consumers in the Economy by D. Hayden Green (senior high)

Consumer Economics by Judith Herbst, Annie Mueser, and Ruth Handel (junior high)

The American Consumer: Decision Making for Today's Economy by Herbert M. Jelley, Robert O. Herrmann, and David K. Graf (senior high)

The Savvy Consumer by Grady Kimbrell and Susan T. Kern (senior high)

Guide to Good Food by Velda L. Largen (senior high)

Economic Decisions for Consumers by Don R. Leet and Joann Driggers (college)

Consumer Education by Wilmer O. Maedke, Ross E. Lowe, and Charles A. Malouf (senior high)

Economic Issues for Consumers by Roger Leroy Miller (college)

Consumer Action by John S. Morton and Ronald R. Rezny (senior high)

The Food Book by Lynn Newberry and M. Frances Fisher (senior high)

Living Today by Irene Oppenheim (junior high)

Succeeding on Your Own by Jeri Lyn Rieken and Gail House (senior high)

Consumer Challenges and Issues by Bettye B. Swanson (college)

Consumer Economics by Roman F. Warmke and Eugene D. Wyllie (senior high)

chapters in the textbooks. These principles were identified through the use of content analysis as proposed by Holsti (1969). Using two independent raters, the food buying principles were identified with the two raters being in agreement 90% of the time.

In the present study the identification of the principles was systematic in that a principle was identified as explicit if it was stated in the imperative form, such as "read labels". A prin-

ciple was identified as implicit if a substantial amount of discussion was devoted to the benefits to consumers of practicing the principle, such as open dating, without actually stating "use open dating". The reliability of the analysis was checked through the use of a second reader. A sample consisting of 61% of the textbooks was used for this reliability study. The results were very encouraging in that a correlation of +.95 was found between the two readers' rank orderings of the principles by frequency of use in the textbooks.

Once the textbooks and principles were identified, the published literature in a variety of fields, but primarily the behavioral sciences, was searched in an effort to determine the strength of the behavioral science support for the food buying principles. Journals and books were consulted from many relevant disciplines including general psychology, consumer psychology, marketing, advertising, retailing, business, nutrition education, and gerontology. Of the total number of sources reviewed, 45% were published in the 1980's, 44% in the 1970's, 9% in the 1960's, and 2% in the 1950's.

RESULTS

Food Buying Objectives

While the focus of the study is the food buying principles advocated in consumer education textbooks, the objectives which these principles are to serve must also be considered. Generally, the textbooks' chapters on food buying opened with a brief discussion of objectives. The most commonly cited objective was spending less money, followed by obtaining good nutrition, and obtaining good quality. All three of these objectives appeared in a majority of the textbooks. Other, less frequently mentioned objectives in the textbook sample were saving time, improving quality of diet, making intelligent choices, avoiding unnecessary purchases, avoiding waste, meeting one's responsibility as a consumer, obtaining good information, gaining enjoyment, saving effort, gaining convenience, satisfying needs, and obtaining the most for the money spent. The discussions of individual principles rarely mentioned objectives explicitly although sometimes they were discussed implicitly.

While objectives did not receive much discussion in the textbooks, their importance should not be overlooked. In particular, if an objective to be served by a particular principle is not perceived as valuable to consumers, many of them may not follow the principle. Research is obviously needed to determine the nature of the behavioral linkages between food buying objectives and principles.

Food Buying Principles

The content analysis of the textbooks identified 110 different principles, implicit and explicit, ranging from the very general to the very specific. To make the scope more manageable and the assessment of the principles more generally applicable, the analysis was restricted to the 20 most fre-

Table 2. Frequency of Occurrence, Explicitly (E) and Implicitly (I), of Food Buying Principles in Selected Junior High, Senior High and College Textbooks

Food Buying Principles	Junior High N=3			Senior High N=12			College N=3			Grand Total N=18			
	E	I	Σ	E	I	Σ	E	I	Σ	E	I	Σ	%
Read labels	1	2	3	3	9	12	0	3	3	4	14	18	100
Use house/generic brands	3	0	3	3	8	11	1	2	3	7	10	17	94
Read nutrition info	1	2	3	0	10	10	0	2	2	1	14	15	83
Use shopping list	3	0	3	10	1	11	0	0	0	13	1	14	78
Use open dating	2	1	3	2	6	8	0	3	3	4	10	14	78
Use unit pricing	1	1	2	3	7	10	0	1	1	4	9	13	72
Plan menus ahead	1	0	1	8	1	9	2	0	2	11	1	12	67
Use ads to plan shopping	3	0	3	6	0	6	2	0	2	11	0	11	61
Use coupons	1	0	1	7	1	8	2	0	2	10	1	11	61
Compare prices	2	0	2	5	2	7	0	1	1	7	3	10	56
Avoid impulse buying	0	1	1	2	5	7	1	1	2	3	7	10	56
Consider time/\$/nutrition of convenience foods	0	2	2	2	3	5	1	2	3	3	7	10	56
Use foods in season	1	0	1	6	1	7	1	0	1	8	1	9	50
Do not shop while hungry	1	0	1	3	3	6	2	0	2	6	3	9	50
Buy in large quantity	0	1	1	4	2	6	1	1	2	5	4	9	50
Choose grades/quality based on needs/use	1	0	1	4	3	7	0	1	1	5	4	9	50
Compare different forms	1	1	2	5	1	6	0	0	0	6	2	8	44
Use grades to compare food items	1	0	1	1	4	5	0	2	2	2	6	8	44
Plan menus around specials	1	0	1	4	0	4	1	1	2	6	1	7	39
Figure cost per serving	1	0	1	3	2	5	0	0	0	4	2	6	33

quently mentioned principles. All of the 20 appeared in at least 33% of the textbooks. Table 2 presents the list of principles, and the number of textbooks in which each were found, both implicitly and explicitly, for books at junior high, senior high and college levels.

A look at the table entries reveals that almost all of the principles recommended that consumers engage in "positive behaviors" rather than not engage in "negative behaviors." The exceptions concern the avoidance of impulse buying and shopping while hungry. Also evident from inspection of the table is that the principles are not mutually exclusive. For example, it would be impossible for consumers to follow some of the principles (e.g., use nutrition information, use open dating, or use grades to compare food items) without also following the first listed principle (read labels). A third observation about the list of principles relates to the earlier discussed food buying objectives. Virtually all of the principles are stated in a categorical manner (do this or do that) without consideration given to how well they fit the needs of individual consumers. One conspicuous exception is the 16th listed principle, choose grades/quality based on needs/use.

Also of interest is the distribution of empirical findings across educational levels and degrees of explicitness. Somewhat surprisingly, the average number of principles per book differed little for junior high (12.0), senior high (12.5), and college levels (11.3). As one might expect, however, explicitness of principles was inversely related

to educational level with 72 percent of junior high textbook principles being stated explicitly, as compared to 54 percent for senior high textbook principles, and 41 percent for college textbook principles.

What are we to make of these various principles? Before commenting on the particulars of the findings, it should be noted that the literature review revealed that little in the way of programmatic research has been conducted on the food buying principles, either singly or in combination. Thus the research picture which emerges for the principles is fragmentary at best, touching upon limited consumer samples, time periods and product classes. We have tried to cope with this limitation by going beyond directly related research studies to include theoretical work in the behavioral sciences relating to perception, cognition, motivation and other psychological processes.

Turning next to the principles themselves it is useful for analysis purposes to sort them into two classes: pre-store planning activities and in-store shopping activities. The first category includes the following seven principles: use a shopping list, plan menus ahead, use ads to plan shopping, use coupons, avoid impulse buying, do not shop while hungry and plan menus around specials. The remaining thirteen principles can be considered in-store shopping activities.

A common characteristic of the first group is that the principles cited tend to be poorly defined. To illustrate, using a shopping list can mean

drawing upon a few mental notes one makes upon leaving one's home for the market or, at the other extreme, it can mean relying upon a carefully prepared written list of products with specifications of brand names as well as sizes. And given the problem of poor definition, it is not surprising to find that many of the planning principles are not well researched. As a result their findings in our literature review draw more upon behavioral science theory and principles than upon empirical studies of food buying behavior.

In general, much more research attention has been devoted to the in-store shopping principles. This may be because more of the tasks underlying these principles are well defined, or because they are easier to research since in-store shopping behavior tends to be more accessible to scholarly study than in-home pre-shopping behavior.

Interestingly, many of the in-store principles appear to fit into one of two behavior classes. The first recommends that consumers focus on an informational dimension and make comparisons among food products on that dimension. Examples are nutritional information, open dating, unit pricing, cost per serving, and food grades. The second class of principles goes a step further to recommend rule-of-thumb purchase guidelines for certain desirable points on selected informational dimensions. Examples here are buy large sizes, use foods in season, and use house and generic brands. Clearly the rule-of-thumb principles are the easier of the two to use, but as our literature review reveals for the buy-large-quantity principle, not always with beneficial results. As studies by Widrick (1979a, 1979b) and Cude and Walker (1984, 1985) have shown, the larger size is not always the more economical with the result sometimes being a quantity surcharge to the consumer.

Turning now to the first-mentioned class of in-store shopping principles focusing on comparisons along selected informational dimensions, we find that these principles may well have attracted more behavioral science research than any other. This circumstance no doubt reflects the influx of new legislative and regulatory initiatives in the 1960s and 1970s relating to such practices as unit pricing, open dating and nutritional labeling. However it also reflects the cognitive revolution which has transformed the field of psychology during this period.

DISCUSSION

For consumer educators to make effective use of the findings of this study they must start with the realization that, from a behavioral science perspective, their task is indeed a formidable one. As we have seen, the list of principles can be viewed as consisting of three types.

The first type, called Planning Principles, deals with planning activities done before the shopper enters the store environment. Little is known about how consumers perform many of these activities and this lacuna in our scholarly knowledge

needs to be filled if helpful initiatives in consumer education are to be mounted here.

The remaining two types of principles focus on in-store shopping behavior. The first of these, which we have called Dimensional Comparison Principles, each consists of a recommendation for comparing food products in the store on a particular criterion dimension, such as price per serving, nutritional value, or product freshness. As we have noted, these principles have attracted a great deal of research attention. In general, the findings indicate that at least some consumers can use the principles and realize benefits from doing so. However, we should be quick to add that these principles appear to be difficult to use effectively for some classes of consumers, products and/or store environments.

The second type of in-store buying principle is called Dimensional Points Principles. These are rule-of-thumb guidelines for coping with the complexities of intra-dimensional comparisons. Instead of recommending to consumers that they compare competing food products on a given dimension, these principles urge consumers to pick a point or set of points on the dimension and buy (or consider buying) a product that is positioned there. Some good examples are buy foods in season and buy large package sizes of food products. These principles, while not always yielding the desired result, can be expected to do so more often than not. This circumstance, together with their ease of use, relatively speaking, would appear to make Dimensional Points Principles excellent candidates for inclusion in consumer education textbooks. However, before including such principles (either existing ones or new ones), consumer educators should seek "cost-benefit" assurance that 1) the selected points are easy to identify by many (if not most) consumers, and 2) purchase of products characterized by the selected points will, on the average, yield benefits to consumers in relation to their food buying objectives.

To sum up, three types of food-buying principles were identified by the content analysis. Of the three we know the least about the Planning Principles and the most about the Dimensional Comparison Principles. And what we have learned about the latter leads us to believe that many consumers are likely to find them to be too imposing to put into practice, thus suggesting Dimensional Points Principles as a more realistic in-store alternative.

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PATTERNS IN THE USE OF
RECOMMENDED FOOD BUYING PRACTICES

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Respondents were grouped with cluster analysis on the basis of similar responses to questions concerning how frequently they used nine food buying practices widely recommended by consumer educators. A typology with five categories was created: (1) Complet Consumers who used most of the recommended practices frequently, (2) Almost Complet Consumers who also used most of the recommended practices but typically did not shop in several stores in order to economize, (3) Economy Specialists who utilized chiefly those practices useful in saving money, (4) Planning Specialists who emphasized planning-related practices (e.g., use of a grocery list), and (5) Disinterested consumers who utilized the fewest of the recommended practices.

For decades consumer educators have been recommending practices which promise to reduce consumers' food costs, increase satisfaction and improve dietary quality. A few studies, mostly industry-sponsored, have examined the extent to which particular practices actually are employed. There has, however, been little attention to patterns in the use of recommended practices. For example, do those who make grocery lists also utilize other recommended practices? Are there patterns in the use of recommended practices and what factors shape these patterns? This paper examines patterns in the use of nine recommended consumer food buying practices. The results are useful in understanding patterns in food buying behavior and in assessing the acceptance of recommended practices by households.

SHOPPER TYPOLOGIES

A small group of past studies has focused on broad motivational factors underlying shopping behavior or on factors underlying store preferences or store choice. (Westbrook and Black 1985). The concerns identified in these studies resemble those which might find expression in particular food buying practices. It seems likely that the underlying concerns which motivate store choices or preferences may also motivate the use of particular shopping practices.

Two studies based on interviews concerning food shopping are of particular relevance. The typology created by Williams, Painter and Nicholas (1978) was based on questions about the perceived

attributes of the respondent's preferred grocery store. On the basis on cluster analysis they identified four groups: (1) Apathetic Shoppers who generally had a negative reaction to their preferred store's characteristics; (2) Convenience Shoppers who rated their preferred store high on location and parking, but unfavorably on prices; (3) Price Shoppers who perceived their store's prices favorably, but judged the store inconvenient; (4) Involved Shoppers who judged prices, quality, convenience, and store advertising favorably.

Darden and Ashton (1974) developed their typology from respondents' ratings of preferred store attributes. Their study is based on a relatively small sample of middle-class, suburban housewives which may have restricted the range of their results. On the basis of cluster analysis they identified six types: (1) Apathetic Shoppers who generally did not express any preferences, although many were concerned about competitive prices and variety of brand offerings; (2) Demanding Shoppers who wanted excellence in all areas (cleanliness, friendly personnel, convenient location, brand variety, quality meat cuts) except trading stamps; (3) Quality Shoppers, many of whom expressed preferences for quality meat cuts and fresh produce; (4) Fastidious Shoppers all of whom were concerned about store cleanliness and who typically also were concerned about quality of meat cuts, fresh produce and brand variety; (5) Convenient Location Shoppers who typically required only one attribute--locational convenience; (6) Stamp Preferrers, who also typically were concerned about cleanliness, quality meats and fresh produce and friendly personnel; (7) Stamp Haters who all preferred no trading stamps and typically were also concerned about competitive prices.

Darden and Ashton's cluster results were heavily influenced by the questions on trading stamps and on the friendliness of store personnel because views on these issues were highly polarized. If these questions are put aside, the Demanding, Quality and Fastidious Shoppers and the Stamp Haters and Stamp-Preferrers are much alike. This leaves the Apathetic Shoppers and the Convenient Location Shoppers as distinctive types along with a combined "Involved Shopper" type. Although concern with competitive prices was widespread, a separate group of Economizing Shoppers did not emerge. This may be a consequence of the question utilized or the middle-class, suburban sample employed.

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A review of the types identified in these two studies and the key variables underlying the results suggests that clustering of food shoppers by buying practices would be influenced by concerns about economizing, price/quality relationships, and locational convenience. Seeking or avoiding stores with trading stamps also would be an important variable if included.

DATA AND ANALYSIS

The data on the use of nine consumer food buying practices were collected in telephone interviews with 458 respondents in the coterminous 48 states. The interviews were with the major food preparer in the household, who also did all or some of the household food shopping. Interviewing was done in June and July, 1985, with an estimated response rate of 47.9 percent. As often occurs, households in the lowest income category (under \$15,000), non-whites and one-person households were underrepresented.

The nine practices under consideration deal with the gathering of product information, use of comparison shopping and the planning of menus and food shopping. The nine practices are described

in Table 1. They were selected to represent food buying practices which are widely recommended. A recent study by Friedman and Rees (1988, forthcoming) confirms the appropriateness of the practices chosen. Respondents were asked to indicate how frequently they engaged in each practice. The scoring points were 1 (seldom or never), 2 (sometimes), 3 (frequently).

The data were analyzed using the SPSS-X cluster analysis program employing Ward's method (Norusis 1985). Cluster methods combine observations with similar characteristics. The result, in this case, is to create groups of respondents which are relatively homogeneous in terms of the frequency with which they employed particular recommended practices. After examining the cluster results, the five cluster solution appeared to be the most useful way of organizing the data.

RESULTS

The five cluster categories displayed distinctly different behaviors on the nine practices. The mean score for each of the clusters are reported in Table 1. The clusters

TABLE 1. Mean Scores of the Five Cluster Categories on the Nine Clustering Variables

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
	Compleat Consumers	Almost Compleat Consumers	Economy Specialists	Planning Specialists	Disinterested
	<u>n = 90</u>	<u>n = 148</u>	<u>n = 125</u>	<u>n = 50</u>	<u>n = 43</u>
Check nutrition and ingredient labels	2.54	2.44	1.72	2.10	1.44
Look for new ideas about better food buys	2.53	2.46	2.15	1.62	1.44
Read food ads	2.79	2.49	2.43	1.08	1.30
Go to several stores to get best grocery values	2.83	1.25	1.94	1.60	1.12
Look for bargains and specials at grocery store	2.88	2.68	2.81	2.28	1.77
Check prices of different package sizes to get best buy	2.90	2.68	2.85	2.48	1.44
Check menus for nutritional balance	2.58	2.56	1.17	1.74	1.16
Plan menus before going grocery shopping	2.27	2.30	1.46	2.60	1.09
Make a shopping list before shopping	2.67	2.81	2.24	2.84	1.84

Scoring: 3 = Frequently, 2 = Sometimes, 1 = Seldom or Never

were given names to highlight their particular practices and to facilitate discussion.

Compleat Consumers

The Compleat Consumers (20% of respondents) were actively involved in using all nine of the recommended practices. Their name was chosen (with apologies to Isaac Walton) to indicate their all-round involvement in the food buying process. Those in the category were active product information seekers, active comparison shoppers and active menu and shopping planners.

Almost Compleat Consumers

The Almost Compleat Consumers (32% of respondents) also were highly involved in using all but one of the nine recommended practices. The chief difference was lower scores on shopping several stores to get the best values. The category also had lower scores on reading food ads. This perhaps can be explained by recognizing that reading food ads is less useful if one only shops in one store. On the other variables, mean scores for the category were similar to those of the Compleat Consumers and, in two instances, exceeded them.

Economy Specialists

The Economy Specialists (25% of respondents) scored high only on practices likely to produce dollar savings in purchasing. These economizing practices included reading food ads, shopping several stores to get the best values, looking for bargains and specials, and checking package sizes to get the best buy. The Economy Specialists' scores were substantially below those of the Compleat Consumers and Almost Compleat Consumers on other variables dealing with product information search and menu and shopping planning.

Planning Specialists

In contrast to the Economy Specialists, the Planning Specialists (11% of respondents) focused chiefly on planning-related practices. Their scores were the highest of the five categories on preparing a shopping list before shopping and on planning menus before shopping. Scores on checking menus for nutrition also were relatively high.

Disinterested Consumers

The Disinterested Consumers (10% of respondents) had, on the average, the lowest scores on the nine recommended practices. The group clearly was not very concerned with any aspect of the food buying process.

PERSONAL AND HOUSEHOLD CHARACTERISTICS

Personal characteristics of the respondents and household characteristics were examined for insights into factors underlying the behavior of the five cluster categories. The independence of personal characteristics from category classifications was tested using Chi-square

analysis.

The Compleat Consumers had the highest percentage of female respondents. The category contained many husband and wife households with children present. It contained the highest percent of married couples and two or more person households. More than half the households had children under age 20 present. The group contained the highest proportion of respondents age 65 or more and the lowest proportion of young respondents. The category also had less formal education, on average, than the others. About two-thirds had a twelfth grade education or less. The category's ability to engage in a full range of time-consuming activities may perhaps be due in part to relatively lower proportion of respondents employed outside the home.

The Almost Compleat Consumers were similar in many ways. The group contained somewhat fewer older respondents and more young ones. Major differences between the two categories were the higher proportion of the Almost Compleat Consumer respondents employed outside the home and the higher level of formal education. The higher percentage employed may explain the lower incidence of shopping several stores by this category.

The Economy Specialists category contained a relatively high proportion of one-person households. The group had the lowest level of formal education of the five categories. The Planning Specialists had relatively high levels of formal education. The category also had the highest proportion of respondents employed outside the home. The high level of employment outside the home may explain the low use of some of the practices which involve substantial time inputs by this category. Those in the Disinterested Category showed several differences. The group contained the highest percentage of one-person households and the lowest percentage of married couples. It also included the most male respondents and the highest percentage of young adult respondents, age 17-29.

The distributions of many of the personal and household characteristics variables did not differ significantly among the clusters. The response patterns, however, seemed consistent with what might be expected.

RELATED BEHAVIORS

In addition to the nine questions concerning use of particular food buying practices, the respondents were asked a number of other questions about their involvement with food and nutrition, the effect of financial constraints on their food buying and the effects of time and physical energy constraints on food preparation. Responses on these variables provide additional insights into the behavioral patterns which have been identified. The percentage giving particular responses is reported in Table 2.

The Compleat Consumers and Almost Compleat Consumers clearly are the most interested in food and nutrition. A substantial majority of these

two groups reported that they "really enjoy" talking about food and recipes, and cooking and preparing meals. While the two groups were somewhat less enthusiastic about meal planning and grocery shopping, they more often reported enjoying these two activities than did respondents in the other cluster categories. Substantial percentages of the two groups also indicated that they were more concerned about their food choices than formerly. Sizable proportions rated their knowledge of nutrition as relatively high, saying they knew "quite a bit" or "a lot."

The Economy Specialists indicated lower levels of enjoyment of the meal planning, food shopping and preparation process. Somewhat fewer indicated they were more concerned about their food choices than formerly and they indicated substantially lower levels of nutritional knowledge. The responses of the Planning Specialists and Disinterested indicated the lowest levels of involvement with food and nutrition. Overall, it appears that higher levels of involvement with the food buying process were

associated with higher levels of enjoyment of the process, higher levels of concern with food and higher levels of nutritional knowledge.

An effort was made to assess whether the differing patterns of behavior identified were associated with a sense of financial constraint. The results were mixed. Responses to a question about whether diets would be improved if more money were available were not linked to category classifications. Responses to another more specific question on financial constraint were not, however, distributed independently. The percentages who said they frequently or sometimes cut back on fresh produce because of its cost did differ significantly among the five categories. The Planning Specialists and Disinterested less frequently indicated that they made such cut-backs. This result may, in part, be due to the less frequent use of fresh vegetables by the Disinterested.

Another set of questions can be used to

TABLE 2. Underlying Variables

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	χ^2
	Compleat Consumers	Almost Compleat Consumers	Economy Specialists	Planning Specialists	Disinterested	
	<u>n = 90</u>	<u>n = 148</u>	<u>n = 125</u>	<u>n = 50</u>	<u>n = 43</u>	
	PERCENT					
Really enjoy talking about food and recipes	60.0	56.1	39.2	26.0	25.6	30.75** (4 d.f.)
Really enjoy meal planning	46.7	41.2	28.8	18.0	14.0	25.85** (4 d.f.)
Really enjoy grocery shopping	36.0	29.1	30.4	12.0	14.3	13.59** (4 d.f.)
Really enjoy cooking and preparing meals	65.6	62.2	47.2	46.0	39.5	15.97** (4 d.f.)
Definitely more concerned than formerly about food choices	76.7	81.1	56.8	56.0	51.2	30.85** (4 d.f.)
Rate nutritional knowledge as "quite a bit" or "a lot"	56.6	60.2	31.2	46.0	14.0	44.86** (4 d.f.)
Diet definitely would be better if more money was available for food	66.7	74.3	68.0	70.0	69.8	2.03 (4 d.f.)
Sometimes or frequently cut back on fresh produce because of its cost	32.3	24.3	36.8	20.0	18.6	9.98* (4 d.f.)
Frequently fix quick meals because of feeling rushed for time	25.6	29.7	36.0	42.0	41.9	6.82 (4 d.f.)
Frequently feel rushed for time when fixing meals	27.8	41.9	39.2	38.0	37.2	5.01 (4 d.f.)
Frequently fix easy to prepare meals to save bother	18.9	37.8	37.6	44.0	44.2	14.46** (4 d.f.)

provide insights into the effects of time and physical energy constraints. The responses to the two questions which focussed specifically on time pressures on meal preparation were distributed independently of category classifications. The Almost Compleat Consumers, Economy Specialists, the Planning Specialists and the Disinterested did, however, indicate time pressures more frequently than did the Compleat Consumers. The Chi-square test was not significant, however. Responses to a question about the use of meals which are easy to fix as a way to reduce "bother" was used as a measure of physical energy constraints. The responses were not independent of the cluster classifications. The response was most common among the Planning Specialists and the Disinterested. It also was widespread among the Almost Compleat Consumers and the Economy Specialists.

USE OF INFORMATION SOURCES

The five categories identified clearly have different informational interests. The Compleat and Almost Compleat Consumers have a wide range of informational wants. The Economy and Planning Specialists, in turn, have a more narrow set of wants on which they put priority. Relatively fewer of the Disinterested seem to have any

priority informational requirements.

In order to assess the usefulness of different information delivery methods, the respondents were asked about the frequency of their use of six different sources of information on food products, food buying and nutrition. Responses for five of the six sources were not independent of the cluster classifications (Table 3). There were sharp differences in the use of (1) pamphlets distributed through grocery stores, (2) magazine articles about recipes and food products, (3) articles in the newspaper food pages, (4) television programs on food and cooking and (5) other individuals such as friends and family. Use of advice from health professionals (e.g. physicians, nurses, nutritionists, etc.) did not, however, differ among the five categories.

The Compleat Consumers clearly are the most easily reached group, either through the print media or television. The Almost Compleat Consumers also were relatively easily reached through the food pages, and magazine articles. The Economy Specialists were somewhat less frequent users of the food pages and magazine articles. The Planning Specialists were less frequent media users, perhaps a reflection of the time and physical energy constraints on the group. There also were sharp differences among the

TABLE 3. Usage of Information Sources

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	χ^2
	Compleat Consumers	Almost Compleat Consumers	Economy Specialists	Planning Specialists	Disinterested	
	n = 90	n = 148	n = 125	n = 50	n = 43	
	PERCENT					
Frequently pick up pamphlets at grocery store	51.1	34.5	24.8	18.0	4.7	38.30** (4 d.f.)
Frequently read magazine articles about recipes and food products	70.0	64.9	48.8	28.0	20.9	50.01** (4 d.f.)
Frequently read articles in food pages of newspaper	66.7	56.8	44.0	24.0	16.3	46.79** (4 d.f.)
Frequently watch TV programs on food and cooking	28.9	14.2	16.0	8.0	7.0	16.27** (4 d.f.)
Frequently ask others about new food products and recipes	44.4	27.7	23.2	20.0	9.3	22.81** (4 d.f.)
Ask advice from health professionals	41.4	31.7	42.6	27.1	35.0	6.17 (4 d.f.)
Frequently tell others about new food products and recipes	48.9	37.8	32.0	20.0	18.6	18.74** (4 d.f.)
Frequently tell others to eat something that is good for them	66.7	60.8	43.2	38.0	34.9	25.21** (4 d.f.)

cluster categories in the use of others as a source of information about food products and recipes. Although there were differences in obtaining advice from health professionals (physicians, nurses, nutritionists, etc.), the differences were not statistically significant.

DISCUSSION

While results of this study have some similarity to those of shopping typology studies they have certain distinctive features. The identification of the Planning Specialist category pinpoints a particular shopping concern not considered in the earlier studies. The linkage of this concern to time pressures and physical energy constraints provides insight into its origins.

The differentiation of the Almost Compleat Consumers from the Compleat Consumers also is of interest. This distinction is based on whether or not respondents shopped in several stores to get the best values and clearly is similar to the locational convenience dimension identified in past shopping typology studies (Darden and Ashton 1974; Williams, Painter and Nicholas 1978).

The results also bear many similarities to Sproles' and Kendall's (1986) profile of consumer decision-making styles. Some of the differences arise out of Sproles' and Kendall's focus on clothing shopping. Their identification of an impulsive/planful factor is of particular interest because of its relationship to the questions which distinguished the Planning Specialists in this study.

CONCLUSIONS

The responses to this study indicate that a substantial portion of the consumer public is not employing the basic practices consumer educators have recommended. The reasons are a lack of interest coupled with time and physical energy constraints. Efforts to reach these groups will be hampered by these same factors.

Overall, the results remind us that the audience for consumer information and education is a diverse one. Fortunately, analyses such as the one above can help to identify segments within the public with particular interests and concerns. With such information, consumer educators can both identify group needs for program development and also can identify group interests which can be used in gaining initial attention before leading into a more comprehensive educational program.

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Discussion

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All three of these papers raise important questions concerning how consumers acquire and use information. They also raise the question of the effectiveness of our consumer education process.

In "The Peril of Infomercials" the authors present us with yet another variation of commercial advertising. Advertising is an acceptable method of providing information to consumers about a particular product. What is controversial about infomercials is the presentation format of the message: the commercial/advertising aspect is obfuscated by the program/entertainment aspect. I found it quite interesting that cable television officials are less than enthusiastic about this type of programming. It is the authors' opinion that infomercials are not going to die a natural death. Comments from the cable network officials imply that as the cable networks develop their own programs, or are able to purchase programs, the scheduling of infomercials will decline. If this is true, there might be an inclination not to be terribly concerned about them. Does the fact that the number of infomercials on the cable network is decreasing lessen the potential for deception? And what is the deception?

What we have here is an ethical issue. Is it ethical for journalists, experts in various fields, etc. to be paid to discuss a topic of immediate relevance to the show's sponsor by the show's sponsor? Is there deception if the content and substance of the program is objective, not a sales pitch for the sponsor's product? Is this a type of deceptive advertising? Where are the boundaries? When is a program a commercial message paid for by a particular company and when is it an open-forum discussion of a topic? If the content of the program is clearly biased toward the sponsor's own product, or the sponsor's product is the only product considered, the potential for deception is more apparent. What about entertainment programs? Legislation is being considered by Congress to eliminate the alleged program-length toy commercials masquerading as cartoons. Professor Rotfield says that these are not infomercials. But if the program definition in the legislation is sufficiently broad, some of the more entertainment-oriented infomercials might be eliminated.

Since the authors titled their paper "The Perils of Infomercials" I would like to know more about what should be done to avoid the perils, or to eliminate the perils. If the infomercial is a media product whose time has come, and we will

be seeing more of these, what can/should be done, and by whom, to reduce deception? Should this be FCC as a programming issue? Or FTC as an advertising issue? Or local government as a cable regulation issue?

The "Patterns in the Use of Recommended Consumer Practices" and "A Behavioral Science Assessment of Selected Principles of Consumer Education" complement each other. In the one case we have the investigators looking for empirical evidence that certain recommended marketplace behaviors are of practical use to consumers. In the other case we have investigators finding that some people really utilize those recommended marketplace behaviors.

After reading the opening paragraphs of the Friedman & Rees paper I was quite depressed. If consumer education has been shown to be less than effective in increasing consumer competency, and we all have the wrong training to be teaching it, what does this mean for consumer educators? Have we been wasting our time, and our students' time, all these years? Fortunately, the authors verified, that in some cases, some of these principles we teach are effective. My compliments to the authors in tackling the question. The larger question, for me, is the ability to generalize the food buying principles to general shopping strategies. "Planning," "dimensional comparisons," and "dimensional points" are principles which can be applied to any purchase decision. Consumers may develop, through the application of these principles and their own experiences, their "rules-of-thumb" to use in many buying situations. Has this aspect been assessed? Is it possible to assess it? I hope that the promised subsequent investigations will provide some guidance for improving our effectiveness as educators and how best to approach these principles for the broadest possible application.

In "Patterns of Practices" we find that people do use these recommended behaviors to some degree. Because of the questions raised by the Friedman and Rees paper, I would like to know more about why those who do not use a particular practice, choose not to use it. If a practice is not being utilized out of ignorance concerning its utility, consumer education may be effective. If a person chooses not to utilize a practice for whatever reason, could additional education have much impact?

The proportion of total income spent on food has been declining. It might not, therefore, be unreasonable to suspect that time intensive strategies lose appeal among those with higher incomes and/or busy schedules. Do people apply the broad

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concepts utilized in food shopping to other products? Do the "Compleat Consumers" remain "Compleat Consumers" if asked about another expenditure category? Are "Disinterestededs" always disinterested no matter what the expenditure category?

The question that these two papers seem to be asking is what is useful information to consumers? Which practices do people put to use? If certain practices/principles are not followed, is it out of ignorance or is it another reason (economy specialists focus on reducing food costs; planning specialists focus on reducing time/energy)?

CONSUMER RESPONSE TO TELECOMMUNICATIONS DEREGULATION:
THE EQUAL ACCESS DECISION

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This paper examines consumer response to equal access -- the choice of a primary long-distance carrier. A model is developed which suggests that those consumers who seek information to aid in decision-making may acquire it either through search or experience. The paper reports results of a survey of consumers who recently made the equal access decision. Nearly two-thirds of the sample compared the alternatives before making a choice; 70 percent acquired information on cost and convenience, two of the characteristics ranked highest in importance. The data also provide some tentative support for the conclusion that experience may have been used rather than search by portions of the sample. A multi-faceted consumer education approach is recommended to help consumers to respond more effectively to telecommunications decisions.

INTRODUCTION

The court-ordered divestiture of AT&T, effective January 1, 1984, has affected all of America's millions of phone users. Many consumers have been asked to make numerous decisions about their telephone services and equipment. The vast majority have been unprepared to respond with informed judgments.

One major decision that over 50 million Americans (Wall Street Journal 1986) have had to make is the "equal access" decision. Equal access -- the choice of which long-distance carrier is reached by using "1 plus" dialing -- is probably the most publicized result of divestiture. Its intent is to put AT&T's competitors on more equal footing in their quest for customer patronage. (See Enis and Sullivan (1985) for a detailed analysis of the divestiture agreement.)

While consumers may benefit from a greater number of choices, many people are confused about the impact of deregulation. Polls in 1983 (Time 1983) showed that only one in five people knew what was happening in the telecommunications industry. In Hyman's (1985) survey of 500 Pennsylvania consumers, over 50 percent didn't know or hadn't thought about the causes of the

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breakup. Fewer than 50 percent could even name the companies providing their local and long-distance service.

Moreover, preliminary results from areas where equal access has already been implemented also indicate consumer confusion. When equal access reaches an area, consumers receive two opportunities to select a primary long-distance carrier. Nationwide, as many as 30 percent of consumers in the first exchanges to convert to equal access did not make a choice on either of the two ballots (Wall Street Journal 1985).²

The equal access decision provides an unprecedented opportunity to examine consumer response to deregulation of an industry. The decision is unique in that it is one for which most consumers have little or no background information or experience from which to draw. It was therefore the purpose of this research to:

- 1) assess the extent of consumers' search for information in the equal access decision,
- 2) identify the types of information acquired in pre-purchase search and the perceived inadequacies of the information available, and
- 3) examine the relationship between the intensity of search for information and selected characteristics, including socioeconomic variables, the extent of search in other purchase decisions, and selected characteristics of the equal access decision.

CONCEPTUAL BACKGROUND

A vast body of literature examines consumers' pre-purchase search for information. Much of this work is based on Stigler's (1961) classic article, "The Economics of Information." Stigler postulated that consumers determine the optimal amount of search for information about the price of a good by equating the savings expected to result from a given search to the expected costs. Stigler suggested that, to maximize the expected utility, a person will search until the expected cost of an additional attempt to acquire information exceeds the expected return.

² Consumers have around 30 days in which to return the first ballot. If they do not, they receive a second letter and have ten days in which to respond. Those failing to return either ballot are assigned to carriers. The assignments are based on the share of the market the competing carriers received from the selections of consumers who did make a choice. For example, if 90 percent of those returning ballots chose Company A, then 90 percent of those who did not return the ballot would be assigned to Company A.

In the case of long-distance telephone services, the expected savings are primarily in the form of lower rates. Compared to AT&T, the OCC's (other common carriers) held a major price advantage prior to divestiture. However, AT&T's long-distance rates have decreased by 30 percent since divestiture (Nation's Business 1987) and costs for the OCC's have increased. The OCC's now pay the same price as AT&T for connections to the networks of local phone companies; before the breakup, they enjoyed a 55 percent discount over AT&T. Therefore, the potential savings from choosing an OCC rather than AT&T may currently be as low as five to twelve percent (Consumer Reports 1986; Business Week 1987; Wall Street Journal 1986).³ However, some consumers still believe that vast dollar savings are likely with an OCC. If so, they may overestimate the benefits of search.

The costs of search for information about long-distance telephone services are likely to be perceived as high by the average consumer. Two unique aspects of the equal access decision complicate the estimation of search costs. First, unlike many purchase decisions made by adults, in the equal access decision the average consumer cannot draw upon a bank of product information built from past experience. Bloch, et al. (1986) has suggested that consumers build such information banks by engaging in "ongoing search" -- search activities that are independent of specific purchase needs or decisions. Yet, prior to 1984, few consumers anticipated that a choice of long-distance carriers was likely. Thus, there was no incentive for ongoing search. When confronted with the equal access decision, most consumers must not only make choices about the optimal amount of information to acquire but must also identify sources of that information.

The equal access decision is also unique in that consumers know at the outset that if they do not make a choice, they will be assigned to a long-distance company. While all may not understand the assignment procedure, at least some consumers faced with this decision might choose to forego the search costs and allow others to make the choice for them.

Nelson's (1970) concept of an "experience" good may also be relevant in understanding consumer response to the equal access decision. Nelson suggested that, for some goods and services, the search process is inappropriate since the cost of evaluation through search is higher than the cost of learning about the good or service through experience (purchasing and using it). Nelson hypothesized that consumers will determine how much information to purchase through experience by equating the marginal cost to the marginal return. Experience as a substitute for search may be especially valid when the cost of purchase is low and/or assessment of one or more important aspects of quality is subjective. In the equal

³Some OCC's offer volume discounts which increase their price advantage for consumers whose monthly long-distance telephone bills total \$15 or more.

access decision, both conditions may exist. The marginal cost of acquiring information through experience might well be perceived to be low since consumers are not assessed a charge to start service with an OCC. Thus, the only cost would be the loss of utility incurred if the company chosen had higher rates and/or provided poorer service than the company it replaced. Also, the quality of long-distance service is likely to be defined by several characteristics that are difficult to assess objectively, including voice transmission quality and convenience of use. Due to the sparsity of objective information available, consumers may decide that making subjective assessments through use is the lower-cost option.

These theories suggest four possible consumer responses to the equal access decision. They are:

- 1) Consumers may view long-distance service as a search good and:
 - a) search extensively for information, perceiving the benefits of search to exceed the costs.
 - b) search little, perceiving the costs of search to be relatively high and/or the benefits to be relatively low.
- 2) Consumers may view long-distance service as an experience good and thus seek little pre-purchase information.
- 3) Consumers may be apathetic and/or lack sufficient knowledge about the market to make rational judgments about the costs and benefits of acquiring information either through search or experience. Therefore, their behavior will be unpredictable and cannot be explained by theory.

A number of hypotheses are possible about the effects of demographic and decision-specific characteristics on assessments of the costs and benefits of search versus experience. However, formulating these hypotheses would require assumptions for which there are no supporting data. Therefore, the research was treated as exploratory.

METHOD

Mailed questionnaires were sent to residents of Champaign and Urbana, Illinois in February 1987. Residents of those two communities, which receive local telephone service from Illinois Bell, made the equal access decision in May 1986. Consumers could choose from among five carriers (three national and two regional companies). Mail and telephone promotion was extensive and the decision received much attention.

Equal access service began in June 1986. Thus, the decision had been made approximately eight months before the survey was mailed. It was therefore hoped that recall about prepurchase search for information would be high. Yet by the time of the survey, consumers had also had some experience with their chosen carriers.

Following pretesting and revisions,

questionnaires were mailed to a random sample of 1000 Champaign and Urbana residents drawn from the local telephone directory. The accompanying letter asked that the survey be completed by the person(s) who took primary responsibility for the household's telephone decisions. Follow-up reminders were mailed two weeks later. Of the 1000 questionnaires mailed, 14 were undeliverable. Of the remaining 986, 348 usable surveys were returned for a response rate of 35 percent.

RESULTS

Compared to other Illinois households, the households responding to the survey tended to be smaller and better educated. Two-person households made up nearly one-half of the total (143 or 41.2 percent) with single persons comprising nearly one-fourth (24.5 percent). (See Table 3.) Educational levels among the surveyed households were much above the Illinois median.⁴ In over one-third of the responding households, one or more persons had a graduate degree (128 or 37.2 percent). In another 21 percent, at least one person had completed a college or trade school education.

Low-income consumers were underrepresented in the sample and higher-income consumers were overrepresented relative to other Illinois consumers. The households were fairly equally distributed among six income brackets; approximately 18 percent earned less than \$10,000 a year and another 18 percent earned over \$50,000 a year. (See Table 3.) In over three-fourths of the households (77.6 percent), at least one person was employed full time.

Over four-fifths of the respondents (290 or 83.3 percent) recalled receiving a letter from their local telephone company asking them to choose a long-distance carrier. Of those 290, 260 (90 percent) said that they returned the ballot. Two-thirds chose AT&T as their primary carrier, with one regional (16.7 percent) and one national carrier (12.4 percent) garnering the lion's share of the remainder of the market. Among the 30 consumers who did not return a ballot, 17 gave as the reason the desire to keep the service they were currently using. This response indicates a lack of understanding of the system since consumers who did not vote were not automatically assigned to their current carrier.

A substantial portion of the remainder of the questionnaire focused on consumers' acquisition and use of pre-purchase information. Nearly two-thirds (61.6 percent) of the respondents indicated that they made their decision by "comparing the alternatives and choosing the best one for me." One-fourth (26.4 percent) simply chose a company used in the past without considering the other options. (See Table 1.)

⁴Higher than average educational levels were expected since the two cities from which the sample was drawn are home to a major land grant university and a community college.

AT&T was the company most often used by the majority of consumers before equal access; only 15 percent had previously used an OCC for most of their long-distance calls.

TABLE 1. Decision Strategies and Perceptions of the Equal Access Decision Situation.

Variables	n	Percent
How chose carrier	(284)	
Compared alternatives	175	61.6%
Chose company used in the past	75	26.4
Asked friends/neighbors	20	7.0
Other	8	2.8
Don't know	6	2.1
Information to make decision	(291)	
Too little	144	49.5%
About right	115	39.5
Too much	32	11.0
Quality of information for decision	(285)	
Poor or very poor	137	48.1%
About right	103	36.1
Good or excellent	45	15.8
Time to make decision	(286)	
Too little	25	8.7%
About right	219	76.6
Too long	42	14.7

Approximately one-half of the respondents said there was too little information available to help in choosing a long-distance company and that the quality of existing information was poor or very poor. Three-fourths were, however, satisfied with the amount of time they were given to make their decision. (See Table 1.)

The responses reported above would seem to indicate that consumers viewed the equal access decision as a search decision in which pre-purchase information was desirable but scarce. However, another set of questions in the survey elicited somewhat contradictory responses.

Seven characteristics were identified as potentially relevant in the choice of a long-distance company. Consumers were asked how important each characteristic was in their choice. For six of these characteristics, the respondents were also asked how much information they sought and how much additional information they needed. The seventh characteristic -- past experience with a company -- was replaced by a general topic (how to choose a long-distance carrier) for the information questions.

Responses are reported in Table 2. The majority of the respondents indicated that five of the seven characteristics were "moderately" or "very" important: voice transmission quality (88.0 percent), convenience of use (84.4 percent), good customer service (81.1 percent), low cost (76.7 percent), and stability of the company (71.8 percent). Past experience with a company and the range of services offered were moderately or very important to around 50 percent of those surveyed. The two factors about which consumers indicated they sought the most information were cost and

TABLE 2. Perceived Importance of Selected Characteristics and Amount of Information Sought and Needed.

	Characteristics Relevant to Choice of Long-Distance Company						
	Voice Transmission Quality (n=333)	Convenience of Use (n=334)	Good Customer Service (n=336)	Low Cost (n=330)	Stable Company (n=337)	Range of Services (n=327)	Past Experience W/Company (n=332)
How important in decision							
Not at all	3.0%	1.0%	1.0%	1.5%	5.3%	7.0%	24.4%
Slightly/somewhat	9.0	14.7	17.9	21.8	22.8	41.3	27.1
Moderately/very	88.0	84.4	81.1	76.7	71.8	51.7	48.5
							How to Choose
Information sought	(n=321)	(n=319)	(n=323)	(n=325)	(n=322)	(n=323)	(n=321)
None	44.2%	29.8%	36.5%	28.9%	42.9%	47.1%	48.9%
A little	32.7	35.4	36.2	32.9	32.6	33.7	38.6
A great deal	23.1	34.8	27.2	38.2	24.5	19.2	12.5
Additional information needed	(n=318)	(n=317)	(n=316)	(n=319)	(n=320)	(n=314)	(n=320)
None	47.5%	49.8%	44.6%	39.8%	54.1%	52.9%	53.4%
A little	28.0	24.9	32.0	27.3	28.1	31.5	25.3
A great deal	24.5	25.2	23.4	32.9	17.8	15.6	21.3

convenience of use; 70 percent acquired a "little" or a "great deal" of information on each of these two characteristics. Yet, the proportion of consumers who did not acquire any information was over one-fourth for each of the seven characteristics, and over 40 percent for four of them. Furthermore, for all of the seven characteristics except low cost, over 45 percent of the respondents indicated that they did not need any additional information.

Chi-square analyses were used to identify variables related to the extent of pre-purchase information search. An index to measure search activity was created from responses to questions about the amount of information sought on the seven characteristics identified in Table 2. Extensive search was defined as seeking a little information about at least three of the characteristics and/or a "great deal" of information on at least two. Consumers who acquired no information on any one of the seven characteristics were defined as engaging in "limited" search. The search activities of the remainder of the respondents were defined as "moderate." Nearly one-half of the sample engaged in extensive search; the remainder were equally divided between the limited and moderate search groups.

The extent of pre-purchase search was significantly related to previous experience with an OCC. Households who had previously used an OCC as their primary carrier were more likely to engage in extensive search (58 percent) than households who had not (47 percent). (See Table 3.) The household's satisfaction with its current long-distance service was not significantly related to pre-purchase search.⁵ Nor were the demographic characteristics household size, income, education, employment status, or presence of children under 18. However, age was significantly related to the

⁵Long-distance expenditures may be related. However, response to this question was low.

extent of pre-purchase search. Households with persons age 56 or older were significantly less likely to engage in extensive search (29 percent) than were younger households (43 to 58 percent).

Not surprisingly, there was also a significant relationship between the extent of pre-purchase search and the decision strategy chosen; 65 percent of those who said they compared alternatives engaged in a high level of search compared to 31 percent of those who simply chose a company used in the past. An index measuring the amount of information consumers generally seek before making purchase decisions in eight areas was also significantly related.⁶ Consumers who described themselves as usually seeking information prior to making other purchase decisions were also more likely to engage in extensive pre-purchase search for long-distance services.

A multinomial discrete-choice logit model was used to examine the relationship between selected demographic and decision-specific characteristics and the extent of search. The model was specified as:

$$P_{ih} = \frac{e^{X_i B_h}}{\sum_{g=1}^3 e^{X_i B_g}}$$

where P_{ih} is the probability that the i^{th} household will fall in group h , h is one of the three search groups (limited, moderate, extensive), X_i is a vector of characteristics, B_h is a vector of coefficients for the h^{th} group, g is the value representing each search group, and B_g is a vector of coefficients for $g = 1, \dots, 3$.

⁶The eight types of purchase decisions were: clothing, jewelry, personal care items; cameras, stereos, televisions; foods and beverages; sports equipment and toys; autos and automotive equipment; minor appliances; major appliances; and medical services and insurance.

TABLE 3. Pre-purchase Search Activities and Related Variables.

Characteristics	Level of Search			n	Chi-Square (Significance Level)
	Limited (n=91)	Moderate (n=84)	Extensive (n=166)		
Decision strategy				(270)	
Compared alternatives	15%	20%	65%	175	31.99
Chose past company	44	25	31	75	(.000)
Asked friends/neighbors	25	30	45	20	
Company used most before				(341)	
AT&T	30%	23%	47%	284	11.53
Other	9	33	58	57	(.003)
Satisfaction with current service				(340)	
Dissatisfied	32%	15%	52%	44	8.25
Uncertain	21	42	37	38	(.091)
Satisfied	27	24	49	258	
Usual amount of pre-purchase search				(348)	
Limited	42%	33%	25%	69	19.97
Moderate	24	22	53	209	(.001)
Extensive	21	21	57	70	
Household size				(347)	
One	29%	20%	51%	85	5.62
Two	28	28	44	143	(.525)
Three	31	25	44	52	
Four or more	19	22	58	67	
Household income				(317)	
Less than \$10,000	19%	40%	40%	57	13.65
\$10,000-\$19,999	29	25	46	59	(.190)
\$20,000-\$29,999	24	18	58	62	
\$30,000-\$39,999	32	18	50	38	
\$40,000-\$49,999	23	19	58	43	
\$50,000 or more	31	26	43	58	
Age of oldest household member				(301)	
18 to 24	20%	37%	43%	51	41.92
25 to 40	13	29	58	113	(.000)
41 to 55	26	26	48	58	
56 and over	53	18	29	79	
Education				(344)	
H.S. diploma or less	47%	13%	40%	30	11.10
Attended college	29	28	43	65	(.090)
College degree	25	17	58	72	
Graduate work/degree	24	28	48	177	
Household employment status				(348)	
No members employed	36%	24%	40%	78	4.24
One or more employed	25	24	51	270	(1.21)
Children age 18 or under in household				(348)	
Yes	24%	19%	57%	91	4.11
No	28	26	45	257	(.128)

The model hypothesized that the probability a household selects the hth search group is a function of selected demographic and decision-specific characteristics. Maximum likelihood estimation of the logit model produces estimates that are consistent, asymptotically efficient, and normally distributed (Garner 1984). Since the analysis was considered exploratory, all of the demographic variables selected for the Chi-square analyses were included in the logit analysis.

The logit analysis examined the probability of a household engaging in moderate or extensive search versus limited search. Estimated coefficients, asymptotic standard errors, and tests of significance are reported in Table 4. The likelihood ratio statistic (39.59) indicated that the explanatory variables selected for the model were significant in explaining the search group probabilities. However, the model did not estimate the observed data very well since the

TABLE 4. Estimated Coefficients of Search Model.

Explanatory Variables (n=273)	Estimated Coefficients	ASEa
Previous experience with OCC's	-.464	.327
Usual amount of pre-purchase search	.836*	.198
Household size	-.213	.153
Household income	.088	.085
Age	-.467*	.122
Education	.033	.092
Employment status	.008	.320
Children under age 18	.521	.438
Likelihood Ratio Statistic 39.59 > 15.5073, all parameters ≠ 0		
Likelihood Ratio Index .07		

aAsymptotic standard errors
 *Significant at the .01 level

likelihood ratio index was only 0.07.⁷

Age and the degree of pre-purchase search in other buying decisions were the only two statistically significant variables. The negative coefficient for age reinforces the conclusion from the Chi-square analyses that older consumers were less likely to engage in pre-purchase search. The logit analysis also confirms that consumers who usually search for pre-purchase information are likely to do so in long-distance service decisions as well.

DISCUSSION

The model developed earlier in this paper suggested four possible consumer responses to the equal access decision. Briefly, those were:

- 1) extensive search because benefits are perceived to be high in relation to costs,
- 2) limited search because costs are perceived to be high in relation to benefits,
- 3) limited search because long-distance services are viewed as an experience good, and,
- 4) unpredictable behavior because consumers are apathetic or lack sufficient knowledge to weigh the costs and benefits of search and experience.

Was one of the four reactions more common than the others? Although responses to different sections of the questionnaire are somewhat contradictory, the data do seem to indicate that a rather substantial portion of the sample viewed

⁷Likelihood ratio indices of 0.2 to 0.4 are considered extremely good fits (Garner 1984).

the equal access decision (or at least some part of it) as a search decision. Two-thirds said that they compared the alternatives and over one-half acquired at least a little information on the five characteristics rated most important in the decision. The fact that nearly one-half stated that they did not need any additional information may in part reflect the generally low opinion of the quality of information available.

There is also some limited support for the notion that consumers view experience rather than search as the more appropriate response to at least some aspects of the decision. Voice transmission quality was a characteristic about which a substantial proportion of consumers (44.2 percent) indicated they acquired no information. Yet this was also the characteristic most frequently rated as moderately or very important to consumers in their decision-making. Since little objective information is available on voice transmission quality, perhaps the data are reflecting consumers' choice of experience rather than search as a means of evaluation. However, if consumers are using experience to acquire information, one would expect that, by the time of the survey, at least some would have become dissatisfied with the service chosen and would have switched. The data do not support that assumption. Only 15 consumers had changed to another primary carrier within the eight months following equal access.⁸

The survey did not directly ask questions to measure consumers' knowledge of the telecommunications market. Therefore, one can only speculate about how much of the observed behavior reflects consumer misunderstanding or ignorance. The responses certainly do not indicate that the sample was apathetic; 85 percent of those who received a ballot returned it and 62 percent said that they compared alternatives before choosing. However, it is likely that "involved" consumers are overrepresented in the sample. Unfortunately no statistics are available on the percent of consumers within the two exchanges who returned ballots. Thus, comparison of the sample to the population is not possible.

CONCLUSIONS AND RECOMMENDATION FOR CONSUMER EDUCATORS

The data provide an interesting portrait of consumer reaction to the equal access decision. Consumers who tend to be "information seekers" (Thorelli and Engledow 1980) in other purchase decisions also appear likely to seek pre-purchase information in the equal access decision. However, search seems to be particularly frustrating as the amount and quality of information available is perceived to be low.

⁸It is also possible that consumers who are dissatisfied with a primary carrier will simply use other companies as secondary carriers. (To use a company as a secondary carrier requires dialing a five-digit access code.) Just over one-fifth (22.5 percent) of the respondents reported using one or more secondary carriers.

While consumers may consider experience as an alternative to search for at least part of the information needed, lack of knowledge about how the market works may make it difficult to use different carriers. Some consumers may not know how to change their primary carrier or how to use a secondary carrier.

The limitations of the study do somewhat restrict its applicability. A larger sample and one more representative of telephone consumers is needed in future work. The relatively high educational level of this sample poses a real danger that search-oriented consumers were overrepresented. Also, this research specifically addressed consumer response to the equal access decision. Further study is needed to examine responses to decisions about local services and telephone equipment.

The data do lend at least tentative support to the conclusion that educational programs in this area need a multi-faceted approach. Consumers may need assistance in one or more of the following areas:

- 1) understanding the organization of the telecommunications market and how it functions,
- 2) acquiring specific, objective information about one or more of the characteristics of long-distance services,
- 3) interpreting available information on the chosen decision criteria, and
- 4) finding answers to procedural or "how to" questions.

Experiences in Illinois indicate that educational programs can have a positive effect on consumer behavior. During the past three years, one program objective of the University of Illinois Cooperative Extension Service has been to help consumers to respond effectively to telecommunications deregulation.⁹ The equal access decision has been one thrust of the program. Several approaches have been used by the state consumer economics specialist as well as county faculty to assist consumers in the four areas described above. Media campaigns, newsletters, workshops, open forums involving representatives from one or more local telephone companies, and fact sheets have been used to reach over 100,000 Illinois consumers. During 1986 alone, over 2,000 consumers participated in some type of workshop or public meeting. Consumer evaluations of the programs, completed one month after participation, indicated that behavior changes did occur. Over one-half of those consumers attending a workshop looked for more information on decisions about telephone services after the program.

The Illinois project suggests that educators can play an important role in helping consumers to respond to the decision opportunities presented by deregulation. While consumers may long for the days when telephones were black, sheets were

⁹The sample communities had not participated in the educational program at the time of the survey.

white, and fewer decisions needed to be made, reregulation of the telephone industry is doubtful. Educators can help consumers to make the transition from viewing telephone service as an arena in which they are only passive participants to one in which they are active, effective decision makers.

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CONSUMER REPRESENTATION AND LOCAL TELEPHONE RATES

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A number of methods have been advocated to improve the quality of consumer representation before state utility commissions. Past research has primarily focused on the impact of the method of commissioner selection (appointed versus elected) on electric rates. This research attempts to determine the impact of several political and regulatory factors on flat-rate, residential telephone prices. Two regression equations are estimated: a full model specification with supply, demand, and political variables; and a restricted model specification with political variables omitted. The type of consumer representation directly provided by state government and the length of public utility commissioners' terms were significantly related to residential telephone rates whereas method of commissioner selection had no relationship to rates.

CONSUMER REPRESENTATION AND LOCAL TELEPHONE RATES

Consumers have a substantial stake in the representation they receive when state utility commissions make decisions regarding the rates charged for electric, natural gas, and telephone service. With the impetus provided by rising energy prices during the 1970s, a number of approaches were initiated to improve the quality of consumer representation at utility hearings. More recently, rising prices for local telephone service have set off another round of attempts to ensure that consumer input into regulatory decisions is robust.

One approach to improving consumer representation is to shift from appointment (typically by governors) to direct election of state utility commissioners. Presently commissioners are elected by the public in eleven states and by the state legislature in two states. Efforts are underway in five additional states to choose commissioners through the ballot box (Chandy 1986; Citizen's Utility Board 1987).

The establishment of citizens' utility boards (CUBs) constitutes a second method of increasing consumer input in regulatory proceedings. CUBs are private, nonprofit organizations whose function is to represent consumers before state utility commissions. CUBs are typically established when a state legislature grants them the right to include solicitations as part of utility bills.

Ratepayers are asked to pay a small annual membership fee (typically \$3-\$5). The first CUB was established in Wisconsin in 1979. CUBs are also in various stages of formation in Oregon, Illinois, New York, and California. In February, 1986, a brake was applied to the formation of CUBs when the United States Supreme Court ruled that state regulatory commissions may not require utilities to enclose consumer group inserts in bills.

A third method of consumer representation before state utility commissions involves "proxy advocacy" (Gormley 1983) whereby a governmental organization represents consumers in a particular jurisdiction. Unlike regulatory officials, proxy advocates recommend rather than make policy. Proxy advocates come in three forms: (1) an independent consumer counsel or utility advocate, (2) a division within the state attorney general's office, or (3) special staffs within the state utility commission.

Given that forms of consumer representation differ with respect to their exposure to public pressure, the constituencies they are asked to represent, and the expertise and financial resources they can bring to bear, it seems reasonable that some forms might be more effective than others. Yet, little is known about the relative effectiveness of consumer representation across and within the three general approaches. The majority of research attention has been focused on the differences between states with appointed versus elected commissioners. Only one study has compared the conditions under which private, grass-roots advocacy, but not private advocacy, reduced the percentage of electric company rate requests granted by state commissions. No study to date has examined differences among types of private advocates or among types of proxy advocates.

Besides ignoring the role of proxy advocates, research on the political aspects of public utility regulation has focused primarily on electricity issues, to the near exclusion of natural gas and telephone policies. The lack of research on telephone issues may be attributable to the fact that, prior to deregulation of that industry, local telephone rates were reportedly subsidized by long-distance calling and equipment charges. As a result of artificially low basic telephone rates for both residential and business customers, state regulators were largely spared from political pressure. With deregulation of the telephone industry, state regulators have only recently faced the unpleasant task of ruling on substantial rate increases requested by local telephone companies (Noll 1985).

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The primary objective of the research reported here is to compare the extent to which the three dominant forms of proxy advocacy benefit residential telephone consumers. The analysis controls for additional factors which could influence telephone rates, including aspects of the political environment other than proxy advocacy.

PREVIOUS RESEARCH

The escalating electricity rates of the 1970s stimulated interest in assessing the impact of the structure of state regulatory commissions on utility rates. Economists tended to view such commissions as counterproductive and advocated deregulation of energy prices. Political scientists and consumer activists, while sharing the view that commissions were not doing a good job of holding down rates, offered a different solution--make regulators "tougher" on utilities and more accountable to the ratepayers. The means advocated for reforming state utility regulation included open meeting requirements, full disclosure of lobbying efforts, and, more frequently, the direct election of commissioners (Pelsoci 1979).

A number of studies have been conducted to assess the impact of elected versus appointed commissioners on electric rates. There is a great deal of variation among studies with regard to the exact nature of the dependent variable. Some studies measure residential electricity prices directly (Crain and McCormick 1978; Mann and Primeaux 1986; Pelsoci 1979). Other studies use related measures of commission performance, including the ratio of residential to business rates (Costello 1984), permissible rates of return (Hagerman and Ratchford 1978), the ratio of the rate hike granted to the rate hike requested by the utility company (Gormley 1983), and the average revenue per kilowatt-hour (Harris and Navarro 1983).

The general model underlying the diverse studies of electricity rates is that rates are a function of three types of conditions: (1) supply, (2) demand, and (3) political/regulatory. The supply and demand conditions are included as control variables in the study of the political/regulatory influences on electricity rates. A number of factors potentially affect the supply schedule for electricity and therefore its price to consumers: the cost of acquiring fuel, the proportion of total generation obtained from low-cost hydroelectric sources, population density, degree of competition from publicly-owned electricity companies, the ratio of residential to business sales volume (also possibly interpretable as a demand factor), and tax payments per kilowatt-hour of sales. In most studies, demand for electricity is measured in terms of a state's per capita income.

Regarding the potential political influences on rates, the method of selecting commissioners is the most commonly included variable. Results have been equivocal, with a few studies showing that elected commissioners dampen electricity

rates (Crain and McCormick 1978; Mann and Primeaux 1986) but most showing no relationship between rates (or related dependent variables) and method of commissioner selection (Costello 1984; Gormley 1983; Hagerman and Ratchford 1978; Harris and Navarro 1983; Pelsoci 1979).

A number of other political variables have been tested for their relationship to electricity rates (or related measures). As in the case of method of commissioner selection, the results are often contradictory. Pelsoci (1979) found that the higher the number of commissioners, the higher were electricity rates. However, Hagerman and Ratchford (1978) reported that the number of commissioners had no bearing on rates. Larger utility commission staffs were related to lower rates in one study (Pelsoci 1979), but a more inclusive measure of commission resources (i.e., commissioner salaries, budget size, data processing capacity in addition to staff size) was positively related to the percentage of rate requests granted (Gormley 1983).

Additional political factors have been scrutinized in single studies. Shorter commissioner terms were related to lower rates of return (Hagerman and Ratchford 1978), and certain types of proxy advocates (i.e., utility consumer councils and special staffs under the attorney general) were related to lower percentages of rate requests granted (Gormley 1983). The number of years since the establishment of a commission, the level of grass-roots advocacy, and a state's political culture were found to be unrelated to the dependent variable under study (Pelsoci 1979; Gormley 1983).

To sum up, studies of the political influences on public utility regulation have examined electricity rates, to the exclusion of rates for telephone service and natural gas. Of the political variables included in models of residential electricity rate determination, virtually none have been consistently related to electricity rates, including the method of selecting utility commissioners. Moreover, little attention has been given to methods of enhancing consumer representation other than direct election of commissioners. The one exception is a study by Gormley (1983) in which he finds that grass-roots advocates are effective when issues are not technically complex and proxy advocates are effective when all classes of consumers (including business customers) have the same interest. However, even Gormley's study does not investigate differences among grass-roots advocates or among proxy advocates in terms of their relative impact on utility rates. The research reported here addresses some of the existing gaps in the literature by examining the impact of different types of proxy advocacy on the level of residential telephone rates.

METHODS

The Model. When hearing rate cases, the members of state utility commissions generally weigh both the producers' arguments regarding an equitable

rate of return and consumer advocates' arguments regarding the consumer's ability and willingness to pay for service (i.e., the price and income elasticity of consumer demand for this service). While supply and demand factors clearly play a major role in setting prices for regulated utilities, a state's political institutions may be important as well. To test for the possible influence of the state political environment on the pricing of local telephone services, we estimate a model where rates for residential telephone service are posited to be a function of supply, demand, and political factors.⁵

Supply Factors. Telephone company representatives argue that the most important determinant of the price of local telephone service should be the cost of providing service. This, in turn, is highly dependent on the geographical dispersion of customers within a local telephone exchange (more specifically, the average distance between subscribers and their switching center). Holding other factors constant, the average cost of serving customers is lower in more densely populated exchanges than in less densely populated ones.

Demand Factors. The demand factor that has been included most frequently in past studies of utility rate determination is per capita income. The effect of consumer income on commissioners' pricing decisions is presumed to be positive. It can be argued that the lower consumer income in a state, the more likely people are to drop off the system if there is an increase in the price of basic telephone service. And since basic phone service has historically been viewed by society as a necessity, commissioners should be reluctant to set higher telephone service prices in states where household income is low. Pelsoci (1979) found state per capita income to be positively related to average residential electrical rates, but Crain and McCormick (1978) found no relationship between per capita income and electricity prices. Thus, findings regarding the relationship between income and electricity rates are equivocal and, in any event, may not be applicable to telephone rates.

The value of receiving service depends on the number of individuals and businesses that can be reached with a local telephone call. Since a local dialing area usually contains several exchanges, the number of accessible parties within a local dialing area is related to but not

⁵In a traditional supply-demand analyses, the dependent variable of interest is the quantity of the good/service rather than its price. In regulated utility markets, prices are set by the public service commission and consumer demand and producer supply adjust accordingly until the market clears. The analysis done here focuses on the factors that influence the commissioners' decisions about price setting. In this spirit, it is posited that commissioners' decisions are based in part on their assessment of current market environment and how a price change might alter supply and demand for the utility in question.

equivalent to the subscriber density of a single exchange. The residents of a small and large city may be equal with respect to exchange density, but the residents of the large city are likely to have access to a greater number of subscribers for the cost of basic telephone service. Thus, customers in the large city should be willing to pay higher rates.

Commissioners' decisions regarding the pricing of local telephone service may also be influenced by their perception of the relative availability of basic phone service substitutes. In particular, if an area has a local measured service (LMS) option, the commissioners may view it as a low cost option that poorer households can switch to in the event of an increase in the price of basic flat-rate service. In areas where LMS is not available, commissioners may be reluctant to increase the price of basic flat-rate service for fear that a price increase may cause some households to drop off the telephone system entirely. Thus, it is anticipated that basic flat-rate service will be priced higher in areas where LMS is available compared to those areas where LMS is not available, all other factors held constant.

Political Factors. Three elements of the political environment are hypothesized to affect the pricing of local telephone service. The first factor is whether or not the state public utility commissioners are appointed or elected directly by the public. Some consumer advocates have argued that if commissioners are elected by the public they will be more likely to represent the consumer's interests and take a hard line on utility companies' requests for rate increases. If this is true, then basic telephone rates will be higher in those states where the commissioners are appointed rather than elected, ceteris paribus.

The second political variable included in the model is the length of the public utility commissioners' terms. Commissioners' terms vary from four to ten years depending on the state. Hagerman and Ratchford (1978) found that longer terms of office were related to higher allowed rates of return for electric companies. They reasoned that longer terms insulate commissioners from public pressure and allow them to be less concerned about public approval. While this interpretation is possible, it should be pointed out that longer terms also insulate commissioners from utility industry pressure. Thus, the relationship between commissioner terms and utility rates could be either positive or negative.

Finally, it is hypothesized that the type of governmental organization representing the consumers' interests in rate cases before a commission will influence the price of basic telephone service. Some types of proxy advocates may be better able to present the consumer's perspective in a rate hearing than others. In particular, the strongest proxy representation is likely to exist in those states where the designated agency is an independent consumer counsel or utility advocate. Such agencies combine specialized knowledge regarding utility issues with an unen-

cumbered mandate to represent the interests of residential consumers (and sometimes small businesses as well). They have no other competing goals that might compromise their representation of the consumer's interests in rate cases. Special staffs within the state public service commission are likely to be highly knowledgeable on utility matters, but they may find it difficult to represent the residential consumer's interests because their superiors, the commissioners, are required to balance many competing interests (e.g., utility companies, large and small business customers, and residential consumers). The state attorney general's staff is free from the difficult balancing act that must be performed by a utility commission's staff. However, the attorney general's office must divide its resources among many disparate concerns and may not develop the specialized expertise necessary to argue the consumer's position effectively in rate cases. Therefore, it is posited that the basic price for telephone service will be lowest in those states that have independent consumer councils and highest in states where proxy advocacy is performed by the attorney general's staff, holding other factors constant.

The selection process of state utility commissioners, the length of their terms, and the type of proxy advocacy are potential influences on residential telephone rates. A fourth factor, the quality and extent of consumer advocacy by private consumer groups, may be important as well. A few states have citizen's utility boards, and most other states have some form of grass-roots consumer advocacy for telephone issues. Unfortunately, comparing private consumer advocacy among states is a difficult measurement task and beyond the scope of the present study.

The Data. The data used to test the hypotheses outlined above have been compiled from several different secondary data sources. In some instances, the available operational measures were only approximations of the variables that theoretically should be included in the model. It is therefore important to discuss the strengths and limitations of these data before moving to the empirical analysis.

The data for several of the variables used in this analysis come from a National Association of Regulatory Utility Commissioners' (NARUC) publication entitled, Bell Operating Companies' Exchange Service Telephone Rates (1986). Rate data for companies other than Bell Operating Companies are not included in this publication, thus non-Bell companies are omitted from the analysis that follows. Given that Bell Operating Companies serve over 86 percent of the telephone subscribers in the United States, it is therefore quite likely that the data used here represent state utility commissions' general price setting patterns. If public service commissions weigh different factors (or weigh the same factors differently) when judging the merit of rate change requests made by non-Bell Operating Companies, then the analysis done here may have limited generalizability to the larger regulatory environment.

The rate data in the NARUC publication is organized by states, and within states, by telephone rate groups. In the empirical work that follows, rate group is the unit of analysis. All but five states had more than one flat-rate residential rate group, with one state having as many as thirty. A rate group is a combination of one or more operating exchanges that charges the same basic rate for all subscribers in a classification (e.g., business, single-party residential, multi-party residential). Rate groups are commonly used by public service commissions to differentiate classes of subscribers for the purposes of evaluating requests for rate changes. Rate groups are usually defined by the number of other local subscribers that can be called. For example, if the range of a rate group is identified as 100,000 to 200,000, a subscriber in any one of the exchanges included in this group will have a local calling network that is somewhere between 100,000 and 200,000 other subscribers. Although there are several exceptions, the NARUC data indicate that the larger the calling range of the rate group, the higher the basic service charge for that rate group.

Information from the NARUC publication on the residential flat-rate one-party subscriber rate for a rate group is the dependent variable in the analysis. Of the various residential rates available, flat-rate service was used (rather than lifeline rates, for example) because (1) these rates are the most comparable across states and (2) residential flat-rate subscribers are the largest classification of ratepayers. Residential flat-rate subscribers represent, depending on the state, between 52 and 84 percent of all subscribers, including businesses. The average percentage of single-party residential flat-rate subscribers in the forty-one states where such information is available is 74 percent of all subscribers (NARUC 1986).

Data on residential flat-rate monthly service charges for rate groups in forty-seven states are included in this study. Omitted due to insufficient information or the absence of Bell Operating Companies are Alaska, Hawaii, and Rhode Island. These rates exclude taxes, extended area service charges, and any other miscellaneous charges.⁶ In total, data on 356 rate groups are analyzed here. Also coded from the NARUC publication is information on the presence or absence of an LMS option for each rate group, the total

⁶Three states (Iowa, Nebraska, and South Dakota) had two different residential flat rates for the same rate group. One rate was charged if local measured service (LMS) was available to the subscribers and another basic residential flat rate was charged when there was no LMS option. In all three states the basic residential flat-rate was higher when LMS was available. For the purposes of the analysis done here, when there were two residential flat rates for one group, the one rate group was treated as two groups with the "LMS available rate" used for one group and the "LMS not available" rate used for the other group.