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Title: CONSUMER ATTITUDES TOWARD PRESCRIPTION PRICES: AN INVESTIGATION AND ANALYSIS OF CONSUMER ATTITUDES TOWARD PRESCRIPTION PRICES BY SELECTED CONSUMER CHARACTERISTICS.

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The direction and intensity of consumer attitudes toward prescription prices by varying socio-economic positions and age groups were measured by use of the semantic differential technique. The potential relationships between consumer attitudes toward prescription prices and (1) consumer prescription experience, (2) select consumer knowledge, (3) select consumer beliefs, and (4) a consumer value were investigated.

A random sample of 150 families was selected and the wife within each family group was interviewed utilizing a prepared questionnaire. The respondents were grouped into nine family classes by varying socio-economic positions and age groups, and were

dichotomized according to varying family prescription experience, select respondent knowledge, and select respondent beliefs.

The results indicated that the general direction of respondent attitudes toward prescription prices was negative in all family classes regardless of socio-economic position or age group.

The results were determined as showing no significant differences between attitude means of respondents representing families with above and below average prescription experience in terms of frequency and expenditures.

The results were determined as showing that respondents with basically a correct knowledge of prescription prices and prescription pricing procedures had significantly more negative attitudes toward prescription prices than respondents with basically an incorrect knowledge.

The results were determined as showing that respondents who accepted selected beliefs concerning (1) physician rebates, (2) the average prescription price, and (3) pharmacy profits, generally had significantly more negative attitudes toward prescription prices than respondents who did not accept the selected beliefs.

The results indicated that the direction of respondent attitudes toward the value of prescription drugs in maintaining health was intensely positive regardless of the family class observed.

Consumer Attitudes Toward Prescription Prices: An Investigation and Analysis of Consumer Attitudes Toward Prescription Prices by Selected Consumer Characteristics

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INTRODUCTION

Prescription prices are a subject generating much controversy among contemporary American consumers. Although the greatest amount of controversy has centered around one particular component of the total charge, the cost of the drug supplied, it is inescapable that the final charge to the consumer should receive attention and concern.

There are a number of reasons why consumers are concerned about prescription prices. Drugs are an essential component of health services, and as such can make a decisive difference in the treatment rendered and the ultimate recovery of the patient. This fact, along with the increasing physician acceptance and use of drugs, has resulted in expenditures for prescription drugs becoming an integral part of the consumer's annual medical care budget. For example, each two-member family in the civilian, noninstitutional population of the United States spent an annual average of $29.30 for prescription drugs in 1964-1965 (23). This average ranged as high as $43.70 per year (23).

Another factor which has contributed to consumer concern has

been the steady increase in the average charge per prescription. For example, in 1950 the average prescription price was $1.77, in 1960, it was $3.19, and by 1966, it had reached $3.59 (8). Regardless of the explanation offered for these increases, the consumer is faced with steadily increasing prescription prices.

The nature of communications received from a variety of sources has undoubtedly contributed to consumer concern about prescription prices. The communications media, particularly newspapers, magazines, and television through routine or special feature articles, have generally referred to drug and prescription prices by such descriptions as "high priced" and "steadily increasing."

Consumer concern regarding prescription prices is also being reflected through the medium of Congressional hearings. Beginning in December 1959, when the late Senator Estes Kefauver opened the initial hearings on drug prices, there have been periodic investigations of various aspects of drug prices by a variety of legislative committees (22). The most recent has been a Subcommittee on Monopoly of the Select Committee on Small Business of the United States Senate.' The communications resulting from the findings of these Congressional hearings have generally described drug prices in somewhat critical terms (2).

Therefore, it would appear that consumers are living in an environment in which drug prices are generally referred to in somewhat

negative terms. It might be inferred that consumers perceive prescription prices in negative terms and that consumers possess somewhat negative attitudes toward prescription prices. Theoretically, since consumers learn from their environment, and learning contributes to perceptions which may affect the direction and intensity of consumer attitudes, the inference may be valid.

However, there is a lack of abundant empirical evidence to support this contention. Attitudes of consumers toward prescription prices have not been probed to any great extent. An intensive literature search revealed only five studies that provided some indication as to the direction of consumer attitudes toward prescription prices. The results of four of these studies indicated that prescription prices are perceived by a majority of individuals as being "much too high," "overpriced," "too high," and "unreasonably high."

The first study was a nationwide survey which was conducted by mail questionnaire. The results indicated that 56.5 percent of the 152 respondents felt that "prescription medicines purchased at community pharmacies are overpriced" (20, p. 20). In a second nationwide consumer survey conducted by the Opinion Research Corporation, the results showed that 50.0 percent of the respondents felt that prescription drug prices are "too high" (4). The third study was conducted by Roper Research Associates in which 516 persons in a large city were questioned. The results showed that 75.0 percent of those

interviewed felt that prescription drug prices are "unreasonably high" (19). The fourth study was conducted by Better Homes and Gardens in which 278, 477 consumers responded to a questionnaire which appeared in the October and November, 1967, issues of the magazine. The results showed that 58. 0 percent of the respondents felt that prices of prescriptions are "much too high" (5). The fifth study, conducted within two southern states, consisted of 704 personal interviews. The results of this study showed that "slightly more respondents felt that the prices of prescription drugs were reasonable (45. 6 percent) than those who felt that they were not reasonable (42. 2 percent)" (6, p. 7).

The results of the latter study are somewhat contradictory with the results of the other studies. The first four studies provided evidence to suspect consumers have negative attitudes toward prescription prices, while the latter study provided evidence to the contrary.

Each of these studies attempted to give some indication as to the direction of consumer attitudes toward prescription prices. However, none of the studies attempted to measure the intensity of consumer attitudes toward prescription prices. There are two basic attitudinal properties needed to adequately describe an attitude. They are the direction and the intensity. For most purposes, an attitude toward a specified object can be completely described by these two

properties (15). The studies cited did not completely describe consumer attitudes in terms of both direction and intensity. In addition, the term attitude was not defined in the methodology of each study cited. Theoretically, these studies did not specifically indicate what they were attempting to measure. This latter limitation may be explained by the fact that there has been no one universal definition of an attitude. Allport noted that "it (attitude) has come to signify many things to many writers, with the inevitable result that its meaning is somewhat indefinite..." (1, p. 789). More recently, it was pointed out by Hovland and Rosenberg that attitudes are typically defined as predispositions to respond in a particular way toward a specified object and that predispositions are not subject to direct observation or measurement (10). Attitudes are inferred from reactions of individuals to particular stimuli. When studying attitudes, it is the particular stimuli and the particular responses to the stimuli which are observed. The three types of responses which are utilized to infer attitudes are (1) cognitive, (2) affective, and (3) behavioral (10). The studies cited did not attempt to define attitude or establish a framework from which to study attitudes, with the result that the major portion of the question concerning consumer attitudes toward prescription prices remained unanswered. The question related to a measurement of the complete attitude in terms of both the direction and intensity of consumer attitudes toward prescription prices.

Investigating and identifying specific consumer attitudes is important. It is important when considering that a variety of research efforts have provided evidence that consumer behavior is directly associated with consumer attitudes. Newcomb, Turner, and Converse have referred to the behavior-attitude relationship by stating "behavior is jointly determined by individual attitudes on the one hand and by the (perceived) situation on the other" (15, p. 68). This relationship has tremendous social and economic importance when applied to health behavior. The potential importance of this relationship can be illustrated by considering the societal commitment to a goal of making health services available to all citizens. In addition, it must be recognized that there are limited resources available in terms of capital, facilities, and manpower to provide health services. It is therefore necessary to understand to be able to predict the behavior of consumers in a given medical care environment. If the behavior of consumers is not appropriate in terms of using the services available, the optimal outcome may never be achieved. There is appreciable evidence accumulating that different consumers react (behave) in different ways when placed in certain environmental situations. For example, there is growing empirical evidence to indicate that some consumers fail to use prescribed drugs properly (3, 9). It is also recognized that consumers may even neglect to visit the physician when medical need is manifested.

The consumer behavior-attitude relationship has further importance to those involved in the economics of drug distribution. Some consumers may prefer one pharmacy because of its low prescription prices, while others may prefer a different pharmacy because of its location or services. Their attitudes toward each may determine the behavior.

An initial approach to understanding and being able to predict consumer behavior is the need to investigate and identify those factors which determine behavior. Attitudes are recognized as being a major determining factor of behavior. Investigating and identifying consumer attitudes toward prescription prices as well as factors that influence attitudes can ultimately contribute to a greater understanding of consumer medical care behavior, particularly relating to the receipt and use of drugs.

Purposes of the Study

There were three specific purposes of this study. The first purpose was to provide new and additional knowledge of consumer attitudes toward prescription prices by identifying consumer attitudes toward prescription prices in general, and by identifying consumer attitudes toward prescription prices by selected consumer characteristics which may influence consumer attitudes. A second purpose was to identify the attitudes toward prescription prices of consumers

residing in a selected community whose characteristics were similar to numerous other communities within American society. Previous studies of consumer attitudes toward prescription prices have been generally nationwide surveys which did not study consumer attitudes within the community setting. The third purpose of this study was to provide insight into new and additional areas of future research regarding consumer attitudes toward prescription prices.

This study was concerned with identifying consumer attitudes toward prescription prices and was designed to observe the affective component of an attitude. The study attempted to measure the respondent's affective response toward prescription prices in general. As previously indicated, the three types of responses used as "indices" of attitudes are (1) cognitive, (2) affective, and (3) behavioral (10). This schematic conception of attitudes is presented in Figure 1. The use of the affective response as being meaningful was established by Hovland and Rosenberg who pointed out that "for certain types of research it may be sufficient to use a single response as the 'index' of an individual's attitude" (10, p. 1). Following Edwards and Thurstone, an attitude is defined as the degree of positive or negative affect associated with some psychological object (7, 21). The psychological object may be a "symbol, phrase, slogan, person, institution, ideal, or idea toward which people can differ with respect to positive or negative affect" (7, p. 2). The psychological object

utilized for this study was the phrase "prescription prices in general."

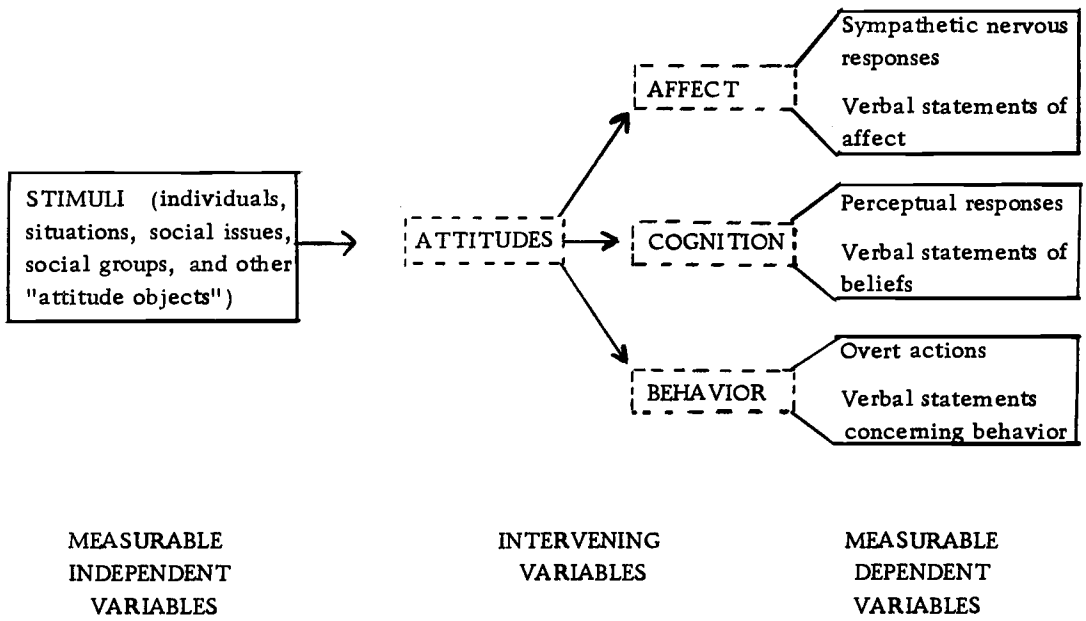

Figure 1. Schematic conception of attitudes (10, p. 3).

Objectives of the Study

The specific objectives of the study were:

1. To identify the direction and intensity of consumer attitudes to-toward "prescription prices in general" by the selected consumer attributes of varying family age groups and family socio-economic positions.

2. To investigate if any relationships exist between consumer experience with prescription purchases and expenditures, and consumer attitudes toward prescription prices.
3. To investigate if any relationships exist between consumer knowledge of prescription prices and pricing procedures, and consumer attitudes toward prescription prices.
4. To investigate if any relationships exist between specific consumer beliefs concerning pharmacy profits, pharmacists salaries, average prescription prices, and physician rebates, and consumer attitudes toward prescription prices.
5. To investigate if any relationships exist between consumer attitudes toward "the value of prescription drugs in maintaining health," and consumer attitudes toward prescription prices.

Limitations of the Study

It must be recognized that the findings of the study may only be applicable to the community in which the study was undertaken, since the community may be unique in its effects on the variables included in the study.

Although the interviews were conducted in a uniform manner by the same interviewer, the possibility of interviewer bias does exist. The questionnaire utilized in the interviews, due to question wording and question sequence, may have affected the results. The ability of

the respondents to recall prescription purchases and expenditures may also have influenced the results.

The indices utilized in the study which were based upon characteristics of the sample may only be applicable to the specific sample drawn. In addition, the indices developed reflect only a limited number of the total factors that comprise consumer experience, consumer knowledge, consumer beliefs, and consumer values.

Finally, the results of the study concerning consumer attitudes toward prescription prices must be framed by the specific definition of an attitude utilized.

METHODOLOGY

Sample and Sampling

The study was conducted in Albany, Oregon, a community of 16, 500 residents.[1] Albany ranked ninth in the state among cities whose populations were 5, 000 or more (16). Data published by the Oregon Bureau of Business and Economic Research (1967) showed that Albany's per household income was $6, 651 with the per capita income[2] being $2, 175 (16). The per household income for Oregon was $7, 436 and the per capita income was $2, 369 while the per capita income for the United States in 1966 was $2, 584 (16). Lumber, agriculture, and metal production are the three major industries, and approximately 3, 500 persons were employed in the various plants associated with these industries. The particular dominant industries, their seasonal nature, including the recent depressed economic condition of one of the industries, could have accounted for Albany's slightly lower per capita income when compared to the state and national figures. Although data were not available concerning the age distribution of the population, there were no particular characteristics

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[1]Estimate as of July 1, 1966 by the Oregon State Center for Population Research and Census.

[2]Per capita data based on population estimates as of December 13, 1965.

of the community which indicated an unusual age distribution.

Albany is a relatively self-contained community and is not geographically associated with any metropolitan area complex. Albany is located on Interstate Highway 5, U. S. Route 99 and on U. S. Route 20 approximately 70 miles south of Portland, Oregon. The corporate city limits of Albany encompass four square miles, and in 1963 contained 238 retail establishments (16). Personal observation indicated the full range of retail establishments ranging from smaller specialty shops, such as clothing, shoe, stationary, sporting good, and toy, to four larger department stores. Observations also indicated a total of nine pharmacies served the population. There were 24 physicians serving Albany and a 107 bed general hospital was located within the community.

The population from which the sample was drawn included all families in Albany listed in the 1967-68 Albany City Directory. The family was selected as the unit of study since the family is recognized and viewed as the basic consumption unit in the economy. For the purposes of this study, a family was defined as a married couple. Only those families residing within the area specified by the 1967 Map of Albany, published by the Albany Chamber of Commerce, were

included in the sample space.[3] Since each individual listing[4] in the City Directory included address as well as marital status it was possible to determine the total number of married persons (families) residing within the sample area. There were 4, 953 families available for study and each family was consecutively numbered and a sample of 150 families was randomly selected.[5] The sample size of 150 families was determined as being sufficient to provide a minimum number of families within each defined family category to allow statistical analysis.

The wife within each family group was selected as the sample unit. This female member of the family was chosen because she is the most probable representative of the family possessing information concerning family prescription use, family prescription expenditures,

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[3]It was necessary to establish a spatial boundary on the sample since the Albany City Directory included persons who did not reside in Albany.

[4]Each individual listing included the following information: The name of husband, and wife's name and occupation if employed outside the home; the husband's occupation and name of employer; the address, the telephone number, and the names and year of birth of minor children.

[5]Dividing 4, 953 by 150 gives 33. 02. Selecting every 33rd family would result in the exclusion of three families (33 x 150 = 4, 950). Therefore, a random number between one and 36 was selected as the starting point. The number obtained from a table of random digits was eight, and beginning with the eighth family listed in the City Directory, every 33rd family was selected.

and the prices charged for prescriptions. A study conducted by McCall's magazine showed that 68.0 percent of the prescriptions brought to a pharmacy are brought by women (11). The results of a study conducted by Paul showed that "...they (women) are purchasing agents for their families when it comes to items which could be purchased in pharmacies" and that "the ratio of women to men who purchase commodities in pharmacies is almost 3:1" (18, p. 14). Braucher, Jowdy, and Tharp's study of consumer attitudes toward prescription prices showed that "there were no significant differences in the opinions expressed by males and females" (6, p. 10). Since the female member of the family is usually the family purchasing agent for prescriptions, and since available evidence would indicate the female and male members of the family do not appear to differ on their opinions regarding prescriptions, the wife within the family group was selected as the sample unit.

Data Collection

Each sample unit was contacted and interviewed by the writer. The interviews were conducted between the hours of 9:00 a.m. and 4:00 p.m. daily in March and April, 1968. If the respondent was not contacted on the first visit, a second visit was attempted on a different day and at a different time. If the respondent was not contacted on the second visit, or if the respondent refused to participate upon

contact, the next family listed in the City Directory was selected.[6]

Questionnaire

A prepared questionnaire was utilized. The questions were structured and stated in an open-ended manner. Specific questions were designed to obtain information concerning the respondent's knowledge of prescription prices and prescription pricing procedures (see Questions 1, 2, and 3, Appendix I). Additional information was obtained from questions relating to family prescription use and expenditures (see Questions 4, 5, and 6, Appendix I). Information was also obtained from questions concerning some specific beliefs of the respondent (see Questions 7, 8, 9, and 10, Appendix I). Other questions were asked to obtain information concerning occupation of the head of the household, annual family income, and respondent's age (see Questions 11, 12, and 13, Appendix I). The respondents were handed the last page of the questionnaire and asked to check the appropriate categories of age and annual family income. This was done as an attempt to insure their participation in providing the information. The desired attitudinal information was obtained by use of the semantic differential technique (see Appendix I).

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[6]There were a total of 39 nonparticipating families. There were 27 families who refused to participate and 12 families were not contacted on the second visit.

ANALYTICAL DESIGN

Semantic Differential

The semantic differential was utilized as the means of attempting to measure the degree of respondent's positive or negative affect associated with prescription prices. The semantic differential utilizes a series of seven-point, bipolar adjective rating scales on which the respondent is asked to rate a given concept or object (13). A rating is made according to the respondent's perception of the relatedness or association of the adjective scales to the concept or object being rated. The seven-point scales used in the questionnaire included the bipolar adjective scales of (1) fair-unfair, (2) good-bad, (3) low-high, and (4) valuable-worthless. Referring to the adjective scales, Miller noted that these scales measured "the individual's evaluation of the concept or object being rated, corresponding to the favorable-unfavorable dimension of more traditional attitude scales" (13, p. 268). An individual possessing a positive affect or feeling associated with some psychological object would have a favorable attitude toward the object. An individual possessing a negative affect or feeling associated with some psychological object would have an unfavorable attitude toward the object (7). The individual's evaluation of the object is the same as the individual's positive or negative affect

associated with the object or concept being rated. Once the affective response toward the object has been measured, inferences can then be made as to the individual's attitude toward the object.

The semantic differential provided a means for identifying both the direction and the intensity of an attitude. The direction of an attitude can be either positive or negative.[7] The intensity of an attitude refers to the degree of positiveness or negativeness attributed to the object. An individual evaluating the object "prescription prices in general" in "fair-unfair" terms may rate the object along a continuum comprised of polar extremes ranging from "very fair" to "very unfair." Thus, there are degrees of fairness or unfairness that may be attributed to prescription prices. The semantic differential, as noted by Mindak,

> ...is a quick, efficient means of getting in readily quantifiable form and for large samples not only the direction but intensity of opinions and attitudes toward a concept (14, p. 28).

Newcomb, Turner, and Converse have stated that:

> Once an attitude can be located on such a continuum, its primary description is complete. Other details may be added, but the two key properties--direction and degree (intensity) of feeling--can be economically expressed in terms of this single dimension (15, p. 50).

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[7]It should be noted that an individual can be "neutral" (neither positive nor negative) on a scale with respect to the direction of an attitude.

Calculating the mean ratings of the semantic differential scales provides (1) a measure of the direction of the attitude, (2) a measure of the intensity of the attitude, and (3) locates the attitude on a continuum (see Appendix III).

There is some empirical evidence to support these wide-ranging abilities of the semantic differential. Mehling plotted the semantic differential scale against a "certainty-in-judgement" scale and found that the semantic differential does measure both the direction and intensity of an attitude. The results also supported the assumption that the middle interval of the scales represented a neutral point with respect to an attitude (12). Osgood and Tannenbaum reported evidence to support the validity and reliability of the semantic differential. The correlations between scores of the evaluative scales of the semantic differential and scores on the Thurstone scales on attitudes toward (1) the church, (2) the Negro, and (3) capital punishment were .74, .82, and .81, respectively (17). These authors also stated that "reliability of the (semantic) differential, particularly the evaluative dimension, is reasonably high, running in the .80's and .90's in available data" (17, p. 47).

Family Socio-Economic Positions and Age Groups

A modified application of Warner's "Index of Status Characteristics" was developed as the means by which the respondents were

grouped into varying family socio-economic positions. The socio-economic positions established were based upon the occupation of the head of the household and family annual income. These were two of the "status characteristics" used by Warner in his classic work on social class (24). The occupation scale utilized by Warner with the associated ratings is shown in Table 1. The income scale with the associated ratings is shown in Table 2. The income scale was developed with seven intervals to be compatable with the seven-point occupation scale. The intervals were established so that the upper and lower class limits would be small, and increase the probability of obtaining a normal distribution of family incomes. The highest possible rating on the occupation scale was one, and the highest possible rating on the income scale was one. Conversely, the lowest possible ratings on the occupation scale and the income scale were seven. The distribution of the respondents on the occupation scale is shown in Table 3 and the distribution of the respondents on the income scale is shown in Table 4.

The occupation scale and the income scale were combined to establish a scale of family socio-economic positions. The highest possible rating on the socio-economic position scale was two, and the lowest possible rating on the socio-economic position scale was 14. The respondents were then grouped into three socio-economic positions: a "high socio-economic position," a "middle socio-economic

Table 1. Occupation scale and rating (24, p 141-142).

Rating assigned to occupation	Professionals	Proprietors and managers	Businessmen	Clerks and kindred workers, etc.	Manual workers	Protective and service workers	Farmers
1	Lawyers, doctors, dentists, engineers, judges, high-school superintendents, veterinarians, ministers (graduated from divinity school), chemists, etc. with post-graduate training, architects	Businesses valued at $75, 000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentleman farmers
2	High-school teachers, trained nurses, chiopodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate)	Businesses valued at $20, 000 to $75, 000	Assistant managers and office and department managers of large businesses, assistants to executives, etc.	Accountants, salesmen of real estate, of insurance, postmasters			Large farm owners, farm owners
3	Social workers, grade-school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers (no training)	Businesses valued at $5, 000 to $20, 000	All minor officials of businesses	Auto salesmen, bank clerks and cashiers, postal clerks, secretaries to executives, supervisors of railroad, telephone, etc., justices of the peace	Contractors		
4		Businesses valued at $2, 000 to $5, 000		Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods stores, etc.	Factory foremen, electricians (own business), plumbers (own business), carpenters (own business), watchmakers	Dry cleaners, butchers, sheriffs, railroad engineers and conductors	
5		Businesses valued at $500 to $2, 000		Dime store clerks, hardware salesmen, beauty operators, telephone operators	Carpenters, plumbers, electricians (apprentice), timekeepers, linemen, telephone or telegraph, radio repairmen, medium-skill workers	Barbers, firemen, butcher's apprentices, practical nurses, policemen, seamstresses, cooks in restaurant, bartenders	Tenant farmers
6		Business valued at less than $500			Moulders, semi-skilled workers, assistants to carpenters, etc.	Baggage men, night policemen and watchmen, taxi and truck drivers, gas station attendants, waitresses in restaurant	Small tenant farmers
7					Heavy labor, migrant work, odd-job men, miners	Janitors, scrubwomen, newsboys	Migrant farm laborers

Table 2.. Income scale and rating.

Rating Assigned to Income	Annual Family Income
1	over $16,000
2	$13,001 - $16,000
3	$ 9,001 - $13,000
4	$ 7,001 - $ 9,000
5	$ 4,001 - $ 7,000
6	$ 1,001 - $ 4,000
7	under $1,000

Table 3. Distribution of respondents by occupation scale.

Occupation Rating	1	2	3	4	5	6	7	
No. of Respondents	9	19	16	35	42	19	10	N=150

Table 4. Distribution of respondents by income scale.

Income Rating	1	2	3	4	5	6	7	
No. of Respondents	2	11	41	44	33	17	2	N=150

position," and a "low socio-economic position." The purpose of establishing these three family socio-economic positions was an attempt to provide family group homogeniety and to measure the possible effect that varying socio-economic position might have on respondent attitudes toward prescription prices. A respondent representing a family with a socio-economic position rating from two to six was placed in the "high socio-economic position." A respondent representing a family with a socio-economic position rating from seven to ten was placed in the "middle socio-economic position," and a respondent representing a family with a socio-economic position rating from 11 to 14 was placed in the "low socio-economic position."[8] The

[8]The weighted mean rating on the socio-economic position scale was calculated to be 8.2. Using this as a guide, the "middle socio-economic position" was established by including socio-economic position ratings 9 and 10 on the "low" side of the mean rating and by including socio-economic position ratings 7 and 8 on the "high" side of the mean rating.

distribution of the respondents by family socio-economic position is shown in Table 5.

Table 5. Distribution of respondents by family socio-economic position.

Socio-Economic Position	Low (11-14)	Middle (7-10)	High (2-6)	
No. of Respondents	32	84	34	N=150

Each of the three family socio-economic positions were further divided into three age groups. The young group included those families in which the respondent was under 35 years of age. The middle-aged group included those families in which the respondent's age was between 35 and 64. The elderly group included those families in which the respondent was 65 years of age and over. The segmentation of families into these age groups attempted to control and permit measuring the effect that life cycle of the family may have had upon the attitudes toward prescription prices. The age groups chosen were comparable with the age groups used by the U. S. Department of Health, Education, and Welfare in describing utilization patterns for drugs (23). The three family socio-economic position groups were combined with the three age groups to form a matrix of nine family classes and members as shown in Table 6. The nine family classes served as the units of analysis from which the objectives of the study were pursued.

Table 6. Distribution by family classes.

Age	Socio-economic Position			
	Low	Middle	High	
Young	14	27	8	
Middle-aged	11	39	23	
Elderly	7	18	3	N=150

RESULTS AND ANALYSIS

Attitudes by Family Socio-Economic Positions and Age Groups

The attitude means obtained from respondents categorized by family classes are shown in Table 7.[9] The general direction of respondent attitudes toward prescription prices among all family classes was negative. This result supports much of the evidence previously cited which suggested that consumers have negative attitudes toward prescription prices.

Within all family classes the intensity of respondent attitudes toward prescription prices was most negative on the "low-high" scales. The more negative attitudes on the "low-high" scales within all family classes tended to indicate that the respondents felt that their negative feelings toward prescription prices were more appropriately described by the "low-high" scales rather than by any other descriptive adjective scales used. It also appeared that as the respondent's age advanced the negative intensity of attitudes on the "low-high" scales increased.

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[9]The attitude means toward prescription prices on the "valuable-worthless" scale were eliminated from the analysis since more than 90.0 percent of the respondents indicated that scale was not applicable to prescription prices by responding on the "neutral or not related" interval of the scale.

Table 7 . Mean attitudes of respondents toward "prescription prices in general" by family classes.

AGE		SOCIO-ECONOMIC POSITION LOW	MIDDLE	HIGH
		n = 14	n = 27	n = 8
YOUNG	fair-unfair	-0.14	-0.11	-1.00
	good-bad	-0.43	-0.07	-0.75
	low-high	-1.14	-1.25	-2.36
		n = 11	n = 39	n = 23
MIDDLE-AGED	fair-unfair	-1.18	-0.48	-0.30
	good-bad	-1.27	-0.75	-0.22
	low-high	-2.00	-1.65	-1.60
		n = 7	n = 18	n = 3
ELDERLY	fair-unfair	-0.86	-0.95	-1.33
	good-bad	-0.57	-0.61	-0.66
	low-high	-2.30	-2.40	-1.67

The attitudes of respondents within each elderly age group were more intensely negative on the "fair-unfair" scales than they were on the "good-bad" scales. Since this pattern was not demonstrated by respondents within other age groups it might suggest that the elderly respondents most frequently associated "high" prescription prices with "unfair" prescription prices.

Attitudes by Family Prescription Experience

To investigate the possible relationships which may exist between consumer prescription experience and consumer attitudes toward prescription prices, the respondents were dichotomized into (1) those respondents representing families who had "prescription experience" and (2) those respondents representing families who had no "prescription experience." Prescription experience was defined as the act, by the respondent or any member of the family, of having a prescription dispensed or redispensed during the past six months[10] (see Table 8). The respondents were asked to recall (1) the number of prescriptions the family had dispensed or redispensed during the past six months and (2) the amount of family expenditures for those prescriptions (see Tables 9 and 10).

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[10]The time period chosen was restricted to six months as the ability of recall diminishes with time.

Table 8. Percentage of families with prescription experience by family class.

Age	Socio-economic Position		
	Low	Middle	High
Young	93.0	93.0	100.0
Middle-aged	91.0	85.0	78.0
Elderly	100.0	94.0	100.0

Table 9. Median number of prescriptions obtained per family class during past six months.[11]

Age	Socio-economic Position		
	Low	Middle	High
Young	6.0	6.0	14.0
Middle-aged	8.0	6.0	10.0
Elderly	4.0	11.0	9.0

Table 10. Median expenditures ($) per family class for prescriptions during past six months.

Age	Socio-economic Position		
	Low	Middle	High
Young	$17.00	$22.00	$37.00
Middle-aged	30.00	24.00	50.00
Elderly	15.00	45.00	45.00

[11]Includes only those families with prescription experience.

Table 9 shows the number of prescriptions obtained per family class increased with rising socio-economic position. Table 10 shows the median amount spent for prescriptions per family class tended to increase with rising socio-economic position as well as with advancing age.

To determine if the frequency of family experience with prescriptions affected respondent attitudes toward prescription prices, an index of consumer experience was developed. The respondents representing families who had prescription experience were dichotomized into (1) respondents representing families with "above average prescription experience" and (2) respondents representing families with "below average prescription experience."[12] The respondent attitudes toward prescription prices by family prescription experience are shown in Table 11. The results indicated the general direction of respondent attitudes among all family classes was again negative with the intensity on the "low-high" scales being greater within each family class. A T-test (see Appendix II) was used to determine if any significant differences existed between the attitude means of respondents representing families with above and below average

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[12]"Average prescription experience" was determined by a median value calculated for each family class by combining the number of prescriptions dispensed or redispensed and the prescription expenditures during the past six months. The median value was utilized because the skewing effect of extreme measurements is minimized.

Table 11. Attitudes toward "prescription prices in general" by family prescription experience.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n = 3 above aver. experience	n = 4 below aver. experience	n = 7 above aver. experience	n = 8 below aver. experience	n = 4 above aver. experience	n = 4 below aver. experience
YOUNG	fair-unfair	-0.33[c]	+0.50	0.00[c]	-0.25	-0.25	-1.75[a]
	good-bad	-0.33[c]	-0.50	+0.14[c]	-0.12	0.00	-1.50[a]
	low-high	-1.00[c]	-1.00	-1.28[c]	-1.00	-2.50[c]	-2.25
		n = 4 above aver. experience	n = 3 below aver. experience	n = 12 above aver. experience	n = 11 below aver. experience	n = 4 above aver. experience	n = 8 below aver. experience
MIDDLE-AGED	fair-unfair	-2.25[a]	+0.33	+0.08[c]	-0.09	+1.00	-0.62[a]
	good-bad	-2.25[a]	0.00	-0.50[c]	-0.36	-0.25[c]	-0.50
	low-high	-2.75[a]	-0.66	-1.75[c]	-1.64	-1.75[c]	-1.75
		x	x	n = 6 above aver. experience	n = 5 below aver. experience	x	x
ELDERLY	fair-unfair			-1.16[c]	-1.40		
	good-bad			-0.33[c]	-0.40		
	low-high			-2.16[c]	-2.40		

[a]Significant difference, $t_{.025(n_1 + n_2 - 2)}$, 95 percent confidence level.

[c]No significant difference.

[x]Insufficient sample size for statistical analysis.

prescription experience. Except for the "Low/Middle-aged" family class the results of the test indicated there were no significant differences ($t_{.025}$, $t_{.050}$) in the attitude means compared. The results suggested that varying family prescription experience designated by frequency and expenditures did not significantly affect respondent attitudes toward prescription prices. This finding was not without precedent. Braucher, Jowdy, and Tharp concluded "there there is no significant relationship between the respondent's opinion of prescription drug prices and their reported frequency of prescription service" (6, p. 11). Thus, respondent attitudes toward prescription prices did not appear to differ significantly when relating respondent attitudes to prescription experience.

The number of respondents representing families with no prescription experience totaled about 10.0 percent of all the respondents, and the resulting samples in each family class were too small to statistically analyze.

Attitudes by Respondent Knowledge

To investigate the possible relationships which may exist between consumer knowledge and consumer attitudes toward prescription prices, three questions were asked each respondent. The purpose being to discover select knowledge possessed by each respondent concerning prescription prices and prescription pricing procedures

that might affect respondent attitudes (see Questions 1, 2, and 3, Appendix I). The answers received and their distributions are shown in Tables 12, 13, and 14.

The distribution of responses in Table 12 would suggest that respondents of higher socio-economic positions more readily admitted limited knowledge. The results also indicated that elderly respondents were the least frequent of all respondents to state that prescription prices have remained unchanged. An important observation from Table 12 was that only one respondent (0.6 percent) answered prescription prices are decreasing while 68.0 percent of the respondents answered prescription prices were increasing.

The distribution of responses in Table 13 regarding knowledge about who is responsible for determining prescription prices indicated 34.0 percent of the respondents did not know while 32.0 percent of the respondents thought it was the pharmacist. Only 18.0 percent of the respondents thought the pharmacist and the drug manufacturer were involved in determining the prescription price. Respondents representing high socio-economic position families appeared to be more knowledgeable about this matter than respondents representing low socio-economic position families. Young respondents most frequently thought only the pharmacist was involved in determining the prescription price while the elderly least frequently thought only the pharmacist was involved. Middle-aged respondents most frequently thought

Table 12. Distribution of responses to question 1 concerning prescription price changes.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	increasing	9	64.0	14	52.0	6	75.0
	decreasing	0	0.0	0	0.0	0	0.0
	unchanged	3	22.0	7	26.0	0	0.0
	don't know	2	14.0	6	22.0	2	25.0
MIDDLE-AGED	increasing	9	82.0	30	77.0	13	57.0
	decreasing	0	0.0	0	0.0	0	0.0
	unchanged	1	9.0	4	10.0	4	17.0
	don't know	1	9.0	5	13.0	6	26.0
ELDERLY	increasing	5	72.0	14	78.0	2	67.0
	decreasing	1	14.0	0	0.0	0	0.0
	unchanged	0	0.0	0	0.0	0	0.0
	don't know	1	14.0	4	22.0	1	33.0

Table 13. Distribution of responses to question 2 concerning who determines prescription price.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	pharmacist	5	36.0	11	41.0	4	50.0
	pharmacist & drug mfg.	1	7.0	3	11.0	0	0.0
	don't know	5	36.0	10	37.0	1	13.0
	other	3	31.0	3	11.0	3	37.0
MIDDLE-AGED	pharmacist	3	27.0	16	41.0	4	17.0
	pharmacist & drug mfg.	2	18.0	6	15.0	11	48.0
	don't know	5	46.0	13	34.0	6	26.0
	other	1	9.0	4	20.0	2	9.0
ELDERLY	pharmacist	0	0.0	5	28.0	0	0.0
	pharmacist & drug mfg.	1	14.0	2	11.0	1	33.0
	don't know	5	72.0	4	22.0	1	33.0
	other	1	14.0	7	39.0	1	33.0

Table 14. Distribution of responses to question 3 concerning how prescription price is determined.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	cost + markup	1	7.0	7	26.0	6	75.0
	don't know	7	50.0	15	56.0	1	12.0
	other	6	43.0	5	18.0	1	12.0
MIDDLE-AGED	cost + markup	2	18.0	10	26.0	7	30.0
	don't know	9	82.0	21	54.0	11	48.0
	other	0	0.0	8	20.0	5	22.0
ELDERLY	cost + markup	1	14.0	5	28.0	1	33.0
	don't know	4	57.0	10	55.0	1	33.0
	other	2	29.0	3	17.0	1	33.0

the pharmacist and the drug manufacturer were involved in determining the prescription price.

The distribution of responses in Table 14 regarding knowledge concerning how the prescription price is determined indicated that 53.0 percent of the respondents did not know while 26.0 percent of the respondents stated that it is determined by the cost of the drug plus a markup. Respondents representing high socio-economic position families appeared to be more knowledgeable about this matter than respondents representing low socio-economic position families. Respondents representing low socio-economic position families answered they did not know more frequently than respondents representing high socio-economic position families. There were no apparent patterns of the responses with respect to varying age groups.

An index of respondent knowledge was calculated by grading respondents as to their performance on the three questions. There were appropriate answers for each question. For example, the correct answer to Question 1 was "increasing," the correct answer to Question 2 was "the pharmacist and the drug manufacturer," and the correct answer to Question 3 was "cost of drug plus a markup or fee." Any other answer, except for a "don't know" response, was considered incorrect. A correct answer received a score of plus one, an incorrect answer received a score of minus one, and a "don't know" answer received a score of zero. The answers were tabulated and

respondents were dichotomized into (1) respondents with basically a correct knowledge, and (2) respondents with basically an incorrect knowledge about these facts. A respondent with a total score of plus one and above was considered to have basically a correct knowledge and a respondent with a total score of minus one and below was considered to have basically an incorrect knowledge. The scores indicated the direction of the knowledge and thus served the purpose of establishing an index of respondent knowledge. However, the scores did not indicate a relative intensity of knowledge.

The attitude means for respondents with basically a correct and basically an incorrect knowledge are shown in Table 15. The direction of the attitudes for respondents with basically a correct knowledge was rather intensely negative within all family classes represented while the direction and intensity of the attitudes for respondents with basically an incorrect knowledge varied. A T-test was utilized to determine if there were any significant differences between the attitude means of respondents with basically correct knowledge and respondents with basically an incorrect knowledge. There were significant differences ($t_{.025}$) between the attitude means compared. In all instances except one, respondents with basically a correct knowledge had significantly more negative attitudes toward prescription prices than respondents with basically an incorrect knowledge. The results would tend to indicate that respondents,

Table 15. Attitudes toward "prescription prices in general" by select respondent knowledge.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		correct knowledge n = 4	incorrect knowledge n = 6	correct knowledge n = 7	incorrect knowledge n = 12	x	x
YOUNG	fair-unfair	-2.00[a]	+0.33	-1.86[a]	+0.42		
	good-bad	-2.00[a]	-0.33	-1.57[a]	+0.42		
	low-high	-2.25[a]	-1.00	-2.14[a]	-1.00		
		correct knowledge n = 7	incorrect knowledge n = 4	correct knowledge n = 17	incorrect knowledge n = 9	correct knowledge n = 11	incorrect knowledge n = 8
MIDDLE-AGED	fair-unfair	-2.14[a]	+0.50	-0.91[a]	+0.22	-1.00[a]	-0.12
	good-bad	-2.14[a]	+0.25	-1.30[a]	0.00	-1.27[a]	+0.25
	low-high	-2.71[a]	-0.75	-1.82[c]	-1.66	-2.00[a]	-1.00
		x	x	correct knowledge n = 9	incorrect knowledge n = 4	x	x
ELDERLY	fair-unfair			-1.00[a]	+0.50		
	good-bad			-1.00[a]	+0.50		
	low-high			-2.67[a]	-1.00		

[a]Significant difference, t .025 ($n_1 + n_2 - 2$), 95 percent confidence level.

[c]No significant difference.

[x]Insufficient sample size for statistical analysis.

regardless of family class, who know that prescription prices are increasing, or that the pharmacist and the drug manufacturer are involved in determining the prescription price, or that the prescription price is determined by the cost of the drug plus a markup or fee, or a combination of such knowledge, have significantly more negative attitudes toward prescription prices than respondents who do not possess these facts.

Attitudes by Respondent Beliefs

To investigate the possible relationships which may exist between specific consumer beliefs and consumer attitudes toward prescription prices, four questions were utilized. The purpose being to discover if specific beliefs relating to prescription prices, pharmacy profits, pharmacist salaries, and physician rebates were accepted or not accepted by the respondents (see Questions 7, 8, 9, and 10, Appendix I).

Table 16 shows the responses and their distribution by family class to the question concerning the belief that pharmacists make large salaries. This belief was accepted more frequently by respondents representing the low socio-economic position families than it was by respondents representing the high socio-economic position families. This result may indicate that respondents representing the low socio-economic position families perceived the pharmacist as

Table 16. Distribution of responses to belief that pharmacists make large salaries.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	yes	11	79.0	8	29.0	4	50.0
	no	3	21.0	11	41.0	3	38.0
	don't know	0	0.0	8	29.0	1	12.0
MIDDLE-AGED	yes	6	55.0	13	33.0	4	17.0
	no	4	36.0	22	57.0	13	57.0
	don't know	1	9.0	4	10.0	6	26.0
ELDERLY	yes	3	43.0	6	33.0	1	33.0
	no	2	28.0	5	28.0	2	67.0
	don't know	2	28.0	7	39.0	0	0.0

being superior to them in terms of economic position while the respondents representing the high socio-economic position families perceived the pharmacist as being more their equal in terms of economic position. There were no observed patterns in the responses when comparing them by varying age groups.

Respondents were dichotomized into respondents who believed that pharmacists make large salaries and respondents who did not believe pharmacists make large salaries. The attitude means for each group are shown by family classes in Table 17. The direction of the attitudes for respondents who accepted the belief that pharmacists make large salaries was negative within all family classes represented while the direction of the attitudes for respondents who did not accept the belief varied. A T-test was utilized to determine if there were any significant differences between the attitude means of respondents who accepted, and respondents who did not accept the belief that pharmacists make large salaries. There were no significant differences ($t_{.025}$, $t_{.050}$) between the attitude means compared on the "good-bad" and "fair-unfair" scales. There were significant differences ($t_{.025}$, $t_{.050}$) between the attitude means compared on the "low-high" scales. The overall results would tend to suggest that, regardless of family class, the belief that pharmacists make large salaries did not generally affect attitudes toward prescription prices.

Table 17. Attitudes toward "prescription prices in general" by acceptors and non-acceptors of belief that pharmacists, on the average, make large salaries.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		acceptors n = 11	non-acceptors n = 3	acceptors n = 8	non-acceptors n = 11	acceptors n = 4	non-acceptors n = 3
YOUNG	fair-unfair	-0.18[c]	0.00	-0.50[c]	+0.54	-1.00[c]	-0.66
	good-bad	-0.54[c]	+0.23	-0.25[c]	+0.27	-1.00[c]	-0.33
	low-high	-1.55[b]	-0.33	-1.62[a]	-0.54	-3.00[a]	-1.66
		acceptors n - 6	non-acceptors n = 4	acceptors n = 13	non-acceptors n = 22	acceptors n = 4	non-acceptors n = 13
MIDDLE-AGED	fair-unfair	-1.67[c]	-1.00	-1.08[c]	-0.39	-0.75[c]	-0.54
	good-bad	-1.67[c]	-1.25	-1.15[c]	-0.54	-0.50[c]	-0.23
	low-high	-2.50[a]	-1.00	-1.92[a]	-1.00	-1.50[c]	-1.61
		x	x	acceptors n = 6	non-acceptors n = 5	x	x
ELDERLY	fair-unfair			-0.50[c]	-0.40		
	good-bad			-0.50[c]	+0.40		
	low-high			-2.83[a]	-1.60		

[a]Significant difference, t .025($n_1 + n_2 - 2$), 95 percent confidence level.

[b]Significant difference, t .050($n_1 + n_2 - 2$), 90 percent confidence level.

[c]No significant difference.

[x]Insufficient sample size for statistical analysis.

Table 18 shows the median values calculated from the responses to the question concerning respondents' belief as to the average prescription price. The results indicated that respondents representing high socio-economic position families believed the average prescription price was higher than respondents representing low socio-economic position families. There was no such pattern apparent by age groups.

Table 18. Median values of respondents' belief as to the average prescription price.

	Socio-economic Position		
Age	Low	Middle	High
Young	$3.00	$4.00	$5.00
Middle-aged	5.00	5.00	5.75
Elderly	4.00	5.00	5.50

The respondents were dichotomized into respondents who believed the average prescription price was "high" and respondents who believed the average prescription price was "low." Those who believed the average prescription price was "high" consisted of those respondents whose responses indicated a value above the calculated median value, and those who believed the average prescription price was "low" consisted of those respondents whose responses indicated a value below the calculated median value.

The attitude means for respondents who believed the average prescription price was "high" and respondents who believed the average prescription price was "low" are shown in Table 19. The direction of the attitudes for those who believed the average prescription price was "high" was negative within all family classes represented, while the direction of the attitudes for those who believed the average prescription price was "low" varied. A T-test was utilized to determine if there were any significant differences between the attitude means of respondents who believed the average prescription price was "high" and respondents who believed the average prescription price was "low." There were significant differences ($t_{.025}$, $t_{.050}$) between the attitude means compared on the "fair-unfair" and "good-bad" scales. On all the "fair-unfair" and "good-bad" scales except two, respondents who believed the average prescription price was "high" had significantly more negative attitudes toward prescription prices than respondents who believed the average prescription price was "low." There were no significant differences ($t_{.025}$) between the attitude means of the two groups when compared on the "low-high" scales, although the attitude means for both groups on these scales were rather intensely negative. The overall results would tend to suggest that, regardless of family class, respondents who believed the average prescription price was "high" had significantly more negative attitudes toward prescription prices than respondents who

Table 19. Attitudes toward "prescription prices in general" by belief concerning the average prescription price.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		average prescription price high n = 3	average prescription price low n = 6	average prescription price high n = 7	average prescription price low n = 5	x	x
YOUNG	fair-unfair	-2.00[a]	+0.33	-1.43[a]	-0.40		
	good-bad	-2.00[a]	-0.33	-1.43[a]	-0.20		
	low-high	-1.67[c]	-1.16	-1.86[c]	-1.40		
		average prescription price high n = 4	average prescription price low n = 4	average prescription price high n = 13	average prescription price low n = 7	average prescription price high n = 7	average prescription price low n = 7
MIDDLE-AGED	fair-unfair	-2.00[a]	0.00	-1.00[b]	+0.14	-0.14[c]	-0.43
	good-bad	-2.00[a]	0.00	-1.70[a]	-0.57	-0.28[c]	-0.14
	low-high	-2.75[b]	-1.25	-1.77[c]	-1.57	-1.57[c]	-2.00
		x	x	average prescription price high n = 3	average prescription price low n = 3	x	x
ELDERLY	fair-unfair			-1.67[a]	+0.33		
	good-bad			-2.00[a]	+0.33		
	low-high			-2.67[c]	-2.33		

[a]Significant difference, t $.025(n_1 + n_2 - 2)$, 95 percent confidence level.

[b]Significant difference, t $.050(n_1 + n_2 - 2)$, 90 percent confidence level.

[c]No significant difference.

[x]Insufficient sample size for statistical analysis.

believed the average prescription price was "low."

Table 20 shows the responses and their distribution by family class to the question concerning the belief that the physician receives a rebate on the prescription price. This belief was accepted more frequently by respondents representing the low socio-economic position families than it is by respondents representing the high socio-economic position families. This may indicate that respondents representing the high socio-economic position families are less likely to perceive that there is a relationship between pharmacist and physician when considering the prescription price. The belief was also accepted more frequently by elderly respondents. This would tend to suggest that the belief is disappearing as younger respondents less frequently accepted the belief.

Respondents were dichotomized into those who believed that the physician receives a rebate and those who did not believe the physician receives a rebate. The attitude means for each group are shown by family classes in Table 21. The direction of the attitudes for respondents who accepted the belief that the physician receives a rebate was negative within all family classes represented, while the direction of the attitudes for respondents who did not accept the belief varied. A T-test was utilized to determine if there were any significant differences between the attitude means of respondents who accepted and respondents who did not accept the belief that the physician

Table 20. Distribution of responses to belief that the physician receives a rebate on the prescription price.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	yes	2	14.0	2	7.0	1	12.0
	no	12	86.0	25	93.0	4	50.0
	don't know	0	0.0	0	0.0	3	38.0
MIDDLE-AGED	yes	4	36.0	9	23.0	6	26.0
	no	4	36.0	24	62.0	15	65.0
	don't know	3	28.0	6	15.0	2	9.0
ELDERLY	yes	4	57.0	6	33.0	0	0.0
	no	3	43.0	4	22.0	0	0.0
	don't know	0	0.0	8	45.0	3	100.0

Table 21. Attitudes toward "prescription prices in general" by acceptors and non-acceptors of belief that the physician receives a rebate on the prescription price.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		x	x	x	x	x	x
YOUNG	fair-unfair						
	good-bad						
	low-high						
		acceptors n = 4	non-acceptors n = 4	acceptors n = 9	non-acceptors n = 24	acceptors n = 6	non-acceptors n = 15
MIDDLE-AGED	fair-unfair	-2.75[a]	+0.50	-1.38[b]	-0.38	-1.67[a]	-0.07
	good-bad	-2.75[a]	+0.25	-1.56[b]	-0.42	-1.17[a]	0.00
	low-high	-3.00[a]	-0.75	-1.78[c]	-1.54	-2.50[a]	-1.06
		acceptors n = 4	non-acceptors n = 3	acceptors n = 6	non-acceptors n = 4	x	x
ELDERLY	fair-unfair	-1.75[a]	+0.33	-1.50[a]	+0.50		
	good-bad	-1.75[a]	-0.33	-1.00[a]	+0.50		
	low-high	-2.50[c]	-2.00	-2.16[c]	-2.00		

[a] Significant difference, $t_{.025(n_1 + n_2 - 2)}$, 95 percent confidence level.

[b] Significant difference, $t_{.050(n_1 + n_2 - 2)}$, 90 percent confidence level.

[c] No significant difference.

[x] Insufficient sample size for statistical analysis.

receives a rebate. There were significant differences ($t_{.025}$, $t_{.050}$) between the attitude means compared on the "fair-unfair" and "good-bad" scales. On these scales, respondents who accepted the belief had significantly more negative attitudes toward prescription prices than respondents who did not accept the belief. With two exceptions, there were no significant differences ($t_{.025}$, $t_{.050}$) between the attitude means of the two groups compared on the "low-high" scales. However, the attitude means for both groups were rather intensely negative. The overall results would tend to suggest that, regardless of family class, respondents who believed the physician receives a rebate have significantly more negative attitudes toward prescription prices than respondents who did not believe the physician receives a rebate.

Table 22 shows the responses and their distribution by family class to the question concerning the belief that pharmacies make large, average, or small profits. The belief that pharmacies make large profits was accepted more frequently by respondents representing high socio-economic position families than by respondents representing low socio-economic position families. The respondents representing low socio-economic position families most frequently accepted the belief that pharmacies make average profits. This might indicate that high socio-economic position respondents perceived the pharmacy as a highly profitable retail establishment. The

Table 22. Distribution of responses to belief that pharmacies make large, average, or small profits.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		n	Percent	n	Percent	n	Percent
YOUNG	large	3	21.0	7	26.0	5	63.0
	average	7	50.0	15	56.0	3	36.0
	small	0	0.0	2	7.0	0	0.0
	don't know	4	29.0	3	11.0	0	0.0
MIDDLE-AGED	large	5	45.0	19	49.0	14	61.0
	average	5	45.0	15	38.0	4	17.0
	small	0	0.0	1	3.0	0	0.0
	don't know	1	9.0	4	10.0	5	22.0
ELDERLY	large	3	43.0	11	61.0	2	67.0
	average	3	43.0	3	17.0	0	0.0
	small	0	0.0	0	0.0	0	0.0
	don't know	1	14.0	4	22.0	1	33.0

belief that pharmacies make large profits was accepted more frequently by elderly respondents than it was by young respondents. There was only one respondent who accepted the belief that pharmacies make small profits.

Respondents were dichotomized into those who believed that pharmacies make large profits and those who believed that pharmacies make average profits. The attitude means for both groups are shown by family classes in Table 23. The direction of the attitudes for respondents who believed that pharmacies make large profits was negative within all family classes, while the direction of the attitudes for respondents who believed that pharmacies make average profits varied. A T-test was utilized to determine if there were any significant differences between the attitude means of respondents who believed pharmacies make large profits and respondents who believed pharmacies make average profits. There were significant differences ($t_{.025}$, $t_{.050}$) between the attitude means compared on all sets of scales. In all instances except one, respondents who believed pharmacies make large profits had significantly more negative attitudes toward prescription prices than respondents who believed pharmacies make average profits. This result was present regardless of family class.

Table 23. Attitudes toward "prescription prices in general" by the belief that pharmacies, on the average, make large or average profits.

AGE		SOCIO-ECONOMIC POSITION					
		LOW		MIDDLE		HIGH	
		large profits n = 3	average profits n = 7	large profits n = 7	average profits n = 15	x	x
YOUNG	fair-unfair	-1.00[a]	+ 0.40	-0.86[b]	+0.27		
	good-bad	-1.30[b]	-0.30	-0.81[b]	0.00		
	low-high	-2.00[a]	-0.75	-2.25[a]	-1.00		
		large profits n = 5	average profits n = 5	large profits n = 19	average profits n = 15	large profits n = 14	average profits n = 4
MIDDLE-AGED	fair-unfair	-2.20[a]	+ 0.20	-1.25[a]	+0.31	-1.36[a]	-0.25
	good-bad	-2.20[a]	0.00	-1.21[a]	+0.33	-1.36[a]	+0.25
	low-high	-2.80[a]	-1.00	-2.05[a]	-1.03	-1.93[a]	-0.65
		x	x	large profits n = 11	average profits n = 3	x	x
ELDERLY	fair-unfair			-1.30[a]	0.00		
	good-bad			-1.18[a]	+0.67		
	low-high			-2.55[c]	-2.00		

[a]Significant difference, $t_{.025(n_1 + n_2 - 2)}$, 95 percent confidence level.

[b]Significant difference, $t_{.050(n_1 + n_2 - 2)}$, 90 percent confidence level.

[c]No significant difference.

[x]Insufficient sample size for statistical analysis.

Attitudes by Respondent Values Toward Prescription Drugs

To investigate the possible relationships which may exist between consumer values and consumer attitudes toward prescription prices, the respondents were asked to rate the phrase "the value of prescription drugs in maintaining health" on the semantic differential scales (see Appendix I). Only the "high-low" and "valuable-worthless" scales were utilized for the analysis. The respondents indicated that the other adjective scales included were not related to the phrase being rated. The attitude means are shown by family classes in Table 24. The direction of the attitudes toward the value of prescription drugs in maintaining health was intensely positive for all family classes. The intensity of the attitudes among the young respondents increased slightly with rising socio-economic position. However, the intensity of the attitudes among the middle-aged respondents decreased slightly with rising socio-economic position. There were no observed patterns discernible among the attitudes when compared by varying age groups. The results suggest that respondents, regardless of family class, have intensely positive attitudes toward the value of prescription drugs in maintaining health.

The intensely positive direction of the attitudes made it impossible to meaningfully divide the respondents by their varying attitudes toward the value of prescription drugs. Thus, it was not

Table 24. Attitudes toward the "value of prescription drugs in maintaining health".

AGE		SOCIO-ECONOMIC POSITION		
		LOW	MIDDLE	HIGH
YOUNG	high-low	+1.43	+2.00	+2.50
	valuable-worthless	+2.21	+2.30	+2.75
MIDDLE-AGED	high-low	+2.64	+1.97	+1.83
	valuable-worthless	+2.63	+2.03	+2.17
ELDERLY	high-low	+2.00	+1.78	+3.00
	valuable-worthless	+2.43	+2.11	+3.00

possible to pursue any investigation of the relationship between consumer values and consumer attitudes toward prescription prices.

SUMMARY AND CONCLUSIONS

The objectives of the study were to identify the direction and intensity of consumer attitudes toward prescription prices by varying socio-economic positions and age groups, and to investigate potential relationships between consumer attitudes toward prescription prices and (1) consumer prescription experience, (2) select consumer knowledge, (3) select consumer beliefs, and (4) a consumer value.

A random sample of 150 families was selected from a community of 4, 953 families. The wife within each family was interviewed utilizing a prepared questionnaire. From the data collected, the respondents were grouped into nine family classes by varying socio-economic positions and age groups. Respondents within the family classes were dichotomized according to varying family prescription experience, select respondent knowledge, and select respondent beliefs. The potential relationships between these variables and respondent attitudes toward prescription prices were investigated by statistically testing for significant differences between attitude means obtained from the semantic differential.

The basic purpose of the study was to provide new and additional knowledge of consumer attitudes toward prescription prices by identifying consumer attitudes toward prescription prices by selected consumer characteristics. A second purpose was to identify the

attitudes toward prescription prices of consumers residing in a selected community whose demographic characteristics were basically similar to numerous other communities within American society.

The respondents were grouped by varying socio-economic positions and age in an attempt to provide family group homogeneity and to permit measuring the possible effect that varying socio-economic position and life cycle of the family might have on respondent attitudes toward prescription prices. This procedure was based upon the assumption that attitudes would be affected by socio-economic position and age group.

The results indicated that the general direction of respondent attitudes toward prescription prices was negative in all family classes regardless of socio-economic position. However, the intensity of the negative attitudes was seemingly unaffected by varying socio-economic position. Three possible explanations were indicated. The first being that differences in attitude intensity were not related to socio-economic position. The second possible explanation was that the particular family's style of life characteristic of varying socio-economic position did not influence the attitudes of the respondent representing the family. The third possible explanation was that the family classes established did not sufficiently differentiate socio-economic position. However, the consistency of attitude intensity among family socio-economic positions would tend to indicate that the

first explanation would be appropriate. These findings suggested that other influences may be more significant in affecting the intensity of attitudes toward prescription prices.

The results also indicated that the general direction of respondent attitudes toward prescription prices was negative regardless of age group. The intensity of the negative attitudes appeared to increase with advancing age. This result might be explained by the findings that elderly respondents more frequently accepted beliefs regarding physician rebates and pharmacy profits. Accepting these beliefs was shown to intensify the negativeness of attitudes toward prescription prices.

One influence expected to affect respondent attitudes toward prescription prices was the extent of family prescription experience. It was expected that above average family prescription experience in terms of frequency and expenditures would negatively affect respondent attitudes especially among the families where frequency and expenditures were high and where incomes were low. However, the findings did not confirm this assumption. The results were determined as showing no significant differences between attitude means of respondents representing families with above and below average prescription experience. This finding was generally indicated regardless of the family class observed. Thus, respondents representing low socio-economic position families with above average prescription

experience did not have significantly different attitudes than respondents representing high socio-economic position families with below average prescription experience. This finding might be explained when considering that respondents of all family classes had intensely positive attitudes toward the value of prescription drugs in maintaining health. The finding that prescription drugs were highly valued by respondents may have diminished the negative feelings toward the prescription price which may have resulted from frequent prescription purchases and high expenditures.

The study attempted to determine if there were significant differences between attitude means of respondents with basically a correct knowledge and basically an incorrect knowledge of prescription prices and pricing procedures. The results were determined as showing that respondents with basically a correct knowledge of prescription prices and prescription pricing procedures had significantly more negative attitudes toward prescription prices than respondents with basically an incorrect knowledge. This finding was also indicated regardless of the family class observed. This finding suggested that a basically correct respondent knowledge about (1) prescription prices, (2) who is involved in determining the prescription price, and (3) how the prescription price is determined, increased the negativeness of respondent attitudes toward prescription prices. This may suggest that knowledgeable respondents felt that the "highness,"

"unfairness," and "badness" of prescription prices were attributed to the fact that prescription prices are increasing, that the pharmacist and the drug manufacturer are involved in determining the prescription price, and that the prescription price is determined by the cost of the drug plus a markup. Thus, knowledgeable respondents may have felt that prescription prices and prescription pricing procedures were not appropriate.

The study attempted to determine if there were significant differences between attitudes of respondents who accepted and who did not accept certain selected beliefs. The results were determined as showing significant differences between the attitudes of respondents who believed and respondents who did not believe that (1) physicians receive rebates, (2) the average prescription price is high, and (3) pharmacies make large profits. These findings were also indicated regardless of the family class observed. These findings suggested that respondents who accepted these beliefs generally had significantly more negative attitudes toward prescription prices than respondents who did not accept these beliefs. This may suggest that respondents who accepted these beliefs felt that the "highness," "unfairness," and "badness" of prescription prices were attributed to their beliefs in physician rebates, a high average prescription price, and large pharmacy profits.

The study attempted to determine if there were significant

differences between the attitudes of respondents who had varying attitudes as to the value of prescription drugs in maintaining health. Due to the intensely positive direction of the attitudes of respondents toward the value of prescription drugs it was not possible to further explore the potential relationship between this consumer value and consumer attitudes toward prescription prices. However, the intensely positive direction of respondent attitudes toward the value of prescription drugs in maintaining health along with the negative direction of respondent attitudes toward prescription prices might suggest that the consumer is faced with a frustrating situation. The consumer may tend to attribute a high value to prescription drugs yet have negative feelings associated with the price which must be paid to obtain the prescription drug. This situation could have contributed to the pervasive negativeness of attitudes toward prescription prices.

If consumers, regardless of socio-economic position or age group, possess negative attitudes toward prescription prices there are potential ramifications as to the effects upon behavior. These ramifications relate to the potential effects that negative attitudes toward prescription prices may have upon behavior relating to the use of prescription drugs. Although the relationship between positive and negative attitudes and specific behavior toward an object is not fully established, certain relationships between attitude direction and behavior may exist. For example, if consumer attitudes toward

prescription prices are negative the expected behavior of the consumer relating to the proper use of prescribed drugs may be less than optimal. Conversely, if consumer attitudes toward prescription prices are positive the expected behavior of the consumer relating to the proper use of prescribed drugs may be more optimal than if the attitudes toward prescription prices were negative. The relationship between consumer attitudes toward prescription prices and consumer behavior relating to the proper use of prescribed drugs needs to be investigated to establish if more optimal behavior relating to the use of drugs can result from attitude change. If positive attitudes can be shown to effect an optimal behavior in terms of drug use, it would be constructive to attempt to change attitudes toward prescription prices to positive attitudes.

The mechanism for changing attitudes is communications, and the results of this study have indicated a number of areas for potential research in communications theory. For example, the results of the study indicated that respondents with basically a correct knowledge about prescription prices and prescription pricing procedures had significantly more negative attitudes toward prescription prices than respondents with basically an incorrect knowledge. However, the study did not answer the question relating to the source of the respondent's knowledge. The source of the respondent's knowledge may be an influencing factor on the attitudes of respondents toward

prescription prices. If the source of the respondent's knowledge can be identified then the potential relationship between the source of the knowledge, the attitudes toward prescription prices, and ultimately, the resulting behavior, can be investigated. In addition, since this study limited consumer knowledge to select facts concerning prescription prices and prescription pricing procedures, and since these facts significantly affected attitudes, there needs to be additional investigation to determine if more complete knowledge encompassing other pertinent facts may have an affect upon consumer attitudes, and ultimately, consumer behavior.

The results of this study indicated that the acceptance of certain specific beliefs was related to negative attitudes toward prescription prices. This finding suggests that if positive attitudes can be shown to result in more optimal behavior, the development of communication channels to properly present factual information concerning specific beliefs may result in more optimal behavior relating to the use of prescribed drugs. For example, the average prescription price is approximately $3.60, yet more than 60.0 percent of the respondents believed it was $5.00 or more. This belief may be changed with properly presented factual information, and as a result attitudes as well as behavior may be changed. In addition, since this study included select consumer beliefs which significantly affected attitudes, there needs to be additional investigation to establish the

presence of other beliefs and their potential affect upon consumer attitudes toward prescription prices and ultimately consumer behavior relating to the use of prescribed drugs.

The study has attempted to increase the basic knowledge and understanding of consumer attitudes toward prescription prices by identifying and investigating consumer attitudes toward prescription prices by selected consumer characteristics. In addition, this study was an initial approach to understanding and predicting consumer drug use behavior. To achieve understanding and prediction of consumer drug use behavior it is recognized that additional research is necessary. The measurement of consumer attitudes toward other medical care objects, and identifying other factors that may influence consumer attitudes and consumer behavior, as well as expanding the present type of study are areas which are suggested for future research.

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APPENDICES

APPENDIX I

QUESTIONNAIRE

1. From what you know about prices charged for prescriptions in general, have they been
   ☐ increasing, ☐ decreasing, or have they remained ☐ unchanged over the past five years?
   ☐ don't know.

2. Who is involved in determining the prescription price you pay?
   ☐ the pharmacist
   ☐ the drug manufacturer
   ☐ the physician
   ☐ the pharmacist and the drug manufacturer
   ☐ the physician and the drug manufacturer
   ☐ the pharmacist, the physician, and the drug manufacturer
   ☐ the pharmacist and the physician
   ☐ other, specify_____
   ☐ don't know.

3. As far as you know, how is the price you pay for a prescription determined?
   ☐ cost of drug plus a percent markup
   ☐ cost of drug plus a service charge (fee)
   ☐ same price on all prescriptions
   ☐ depends on who the patient is
   ☐ other, specify_____
   ☐ don't know.

4. Have you or a member of your family had a prescription filled within the past six months?
   ☐ yes — Go to questions 5 and 6
   ☐ no — Go to semantic differential
   ☐ don't know — Go to semantic differential

5. How many prescriptions including refills has your family had filled within the past six months?
   1 2 3 4 5 6 7 8 9 10 11 12
   13 14 15 16 17 18 19 20 other_____ don't know ☐

6. How much has your family spent on prescriptions including the refills during the past six months?
   $1 $2 $3 $4 $5 $6 $7 $8 $9 $10 $11 $12 $13
   $14 $15 $16 $17 $18 $19 $20 $21 $22 $23 $24 $25 $26
   $27 $28 $29 $30 other_____ don't know ☐

On each page that follows you will find a different statement to be judged, and beneath it a set of scales. You will be asked to rate the statements on each of the scales. In taking this test, please make your judgements on the basis of what these statements mean to you.

Here is how you are to use these scales: If you feel that the statement at the top of the page is very closely related to one end of the scale, you should place your check mark as follows:

FAIR__X__:_____:_____:_____:_____:_____:_____UNFAIR
very

or

FAIR_____:_____:_____:_____:_____:_____:__X__UNFAIR
very

If you feel that the statement is quite closely related to one end of the scale (but not extremely) you should place your check mark as follows:

GOOD_____:__X__:_____:_____:_____:_____:_____BAD
quite

or

GOOD_____:_____:_____:_____:_____:__X__:_____BAD
quite

If you feel that the statement is only slightly related to one end of the scale (but is not really neutral) you should place your check mark as follows:

LOW_____:_____:__X__:_____:_____:_____:_____HIGH
slightly

or

LOW_____:_____:_____:_____:__X__:_____:_____HIGH
slightly

The direction toward which you check depends upon which of the two ends of the scale seem most characteristic of the statement you are judging.

If you feel that the statement is neutral on the scale, both sides of the scale are equally associated with the statement, or if the scale is not related to the statement, then place your check in the middle space:

VALUABLE_____:_____:_____:__X__:_____:_____:_____WORTHLESS
neutral
or not
related

IMPORTANT: Place your check marks in the middle of the spaces. Be sure that you check every scale for every statement. Please do not put more than one check mark on a single scale. Make each item a single and independent judgment. It is your first impressions, the first "feelings" that you have about the statements, that we want.

EXAMPLE:

Income taxes in general

FAIR	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ UNFAIR
	very	quite	slightly	neutral or not related	slightly	quite	very
GOOD	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ BAD
	very	quite	slightly	neutral or not related	slightly	quite	very
LOW	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ HIGH
	very	quite	slightly	neutral or not related	slightly	quite	very
VALUABLE	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ WORTHLESS
	very	quite	slightly	neutral or not related	slightly	quite	very

Prescription prices in general

FAIR	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ UNFAIR
	very	quite	slightly	neutral or not related	slightly	quite	very
GOOD	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ BAD
	very	quite	slightly	neutral or not related	slightly	quite	very
LOW	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ HIGH
	very	quite	slightly	neutral or not related	slightly	quite	very
VALUABLE	_____ :	_____ :	_____ :	_____ :	_____ :	_____ :	_____ WORTHLESS
	very	quite	slightly	neutral or not related	slightly	quite	very

The value of prescription drugs in maintaining health

FAIR	very	quite	slightly	neutral or not related	slightly	quite	very UNFAIR
GOOD	very	quite	slightly	neutral or not related	slightly	quite	very BAD
HIGH	very	quite	slightly	neutral or not related	slightly	quite	very LOW
VALUABLE	very	quite	slightly	neutral or not related	slightly	quite	very WORTHLESS

7. Do you believe that pharmacists, on the average, make large salaries?
   ☐ yes ☐ no ☐ don't know.

8. What do you believe to be the average price charged for all prescriptions?
   $1 $2 $3 $4 $5 $6 $7 $8 $9 $10 other___ don't know ☐

9. Do you believe that the doctor receives a "kickback" on the prescription price you pay?
   ☐ yes ☐ no ☐ don't know

10. Do you believe that pharmacies, on the average, make ☐ large, ☐ average, or ☐ small profits when compared to other retail businesses? ☐ don't know

11. What is the occupation of the head of your family?

    _____

    Be specific, and get as much information concerning the occupation as possible.

    Comments:

Would you please check the following questions. We need this information for classification purposes only, and you can be sure that the information will remain confidential.

12. What is your age?

- ☐ under 25
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 - 64
- ☐ 65 - 74
- ☐ 75 and over
- ☐ don't know

13. What is the approximate annual income of your family?

- ☐ below $1, 000
- ☐ $1, 001 to $4, 000
- ☐ $4, 001 to $7, 000
- ☐ $7, 001 to $9, 000
- ☐ $9, 001 to $11, 000
- ☐ $11, 001 to $13, 000
- ☐ $13, 001 to $16, 000
- ☐ $16, 001 to $20, 000
- ☐ over $20, 000
- ☐ don't know

APPENDIX II

STATISTICAL TEST

The Student's t test was utilized to determine if there were significant differences between the attitude means of respondents dichotomized by selected variables.

To test the significance of differences between the attitude means, a null hypothesis (Ho) and an alternate hypothesis (Ha) were constructed as follows:

$$Ho : \overline{X} = \overline{Y}$$

$$Ha : \overline{X} \neq \overline{Y}$$

The formula for the test statistic (T) included:

$$T = \frac{\overline{X} - \overline{Y} - o}{S^2p(\frac{1}{n_1} + \frac{1}{n_2})}$$

$$S^2p = \frac{\Sigma (x_i - \overline{X})^2 + \Sigma (y_i - \overline{Y})^2}{n_1 + n_2 - 2}$$

The test was "two-tailed" and if the calculated T value was greater than the positive t value or less than the negative t value listed in a table at 95.0 or 90.0 percent levels of confidence the null hypothesis (Ho) was rejected and the alternate hypothesis (Ha) was accepted.

The meanings of the formula symbols are as follows:

$\overline{X}$ = attitude mean for respondent group 1
$\overline{Y}$ = attitude mean for respondent group 2
n_1 = sample size for respondent group 1
n_2 = sample size for respondent group 2
x_i = attitude score per respondent in group 1
y_i = attitude score per respondent in group 2

APPENDIX III

ATTITUDE MEANS

Each interval on the seven-point adjective scales was assigned ratings ranging from plus three to minus three.

Example:

Object Being Rated

fair	+3	: +2	: +1	: 0	: -1	: -2	: -3	unfair
	very	quite	slightly	neutral or not related	slightly	quite	very	

The attitude means of the respondents were then calculated from the ratings recorded on each semantic differential scale. The attitude means were calculated as follows:

$$\overline{X} \text{ (attitude mean)} = \frac{\sum_{i=1}^{n} x_i}{n} \quad \begin{matrix} \text{(sum of respondent ratings)} \\ \text{(sample size)} \end{matrix}$$