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A multi-nomial logit model is estimated to predict the probability of falling into one of three complaint action categories when dissatisfied with professional and personal services: no action, private, or public complaints. Several demographic, attitudinal, economic, and supply side factors are significant. Results are used to predict complaint probabilities.

Sellers all over the country have begun to focus on customer service as a way to stay ahead of the competition (TARP 1985; Forum Corporation 1988; Malech 1987; SOCAP 1989). The answer to the question, "who complains?", can be used as part of a defensive marketing strategy, which describes techniques used to retain customers (Fornell and Wernerfelt 1987). But a mere description of complainers may not be enough in today's marketplace. There is a need to understand the who and why of those that don't complain. These consumers are likely to stop using a product or service when dissatisfied, either outright or by switching to the competition. In these cases, sellers often have no clues as to why business was lost. Increased knowledge about dissatisfied consumers may increase sellers' ability target the correct market, and gives an indication of how to "stay close to the consumer." Ultimately, consumers should made be better off through availability of improved quality and service. A comprehensive, integrated model of complaining behavior that can address the above issues has been called for (Andreasen 1988; Bryant 1988). This research estimates part of such a model.

#### PREVIOUS WORK

Though conceptual models of complaining have been developed, much of the empirical work has been descriptive, with focus on individual elements of the complaint process, such as post-purchase dissatisfaction or seller response to complaints (Hirschman 1970; Andreasen 1977; Day and Landon 1977; Gronhaug 1977; Cohen 1973; Day et al. 1981; Fornell and Westbrook 1984; Gilly and Gelb 1982; Grim 1987; Maleck 1987). Andreasen (1987) has characterized four major categories of consumer complaint models: cost/benefit, personality model, learning, and restraints models. Researchers using the personality, learning, and restraints models found age, education, income, wealth, community involvement, behavior attribution, and political inclination are associated with differences in complaining behavior (Valle & Walendorf 1977; Warland et al.

1984; Duhaime and Ash 1981; Beardon 1983). Researchers who implemented the cost/benefit model considered the impact of prices on complaining behavior or the costs and benefits associated with complaining (Richens 1981; Hirschman 1970; Oster 1980).

A pilot study used a binomial logit specification of a model that integrated the personality, learning, and cost/benefit models of complaint behavior to predict the probability of complaining about services (Kolodinsky 1990). A binomial characterization of complaints, however, is inadequate to describe complaint actions. This study is a step at moving this model forward by using a multinomial logit model to predict complaints.

#### AN OPERATIONAL MODEL OF CONSUMER COMPLAINING BEHAVIOR

When consumers are dissatisfied with the pre- or post-purchase buying process, there are three major categories of actions to take: public, private, or no action (Day and Landon 1977b)<sup>2</sup>. Public complaints include complaints to a store, manufacturer, government, or private agency. Private complaints include boycotts, or warning others by word-of-mouth "advertising" (Richins 1983). With private action sellers are not made directly aware of dissatisfaction.

An economic framework can be used to describe complaint action. The demand for complaints depends on "sub-optimal" rather than "optimal" levels of satisfaction. Von Weizsacker's (1971) work on endogenous changes in tastes provides the framework. A short-run utility function is maximized in each of several periods to obtain "optimal" levels of demand. After demand is ascertained in any given period, consumers may learn their behavior was "sub-optimal". Preference structures accordingly. Demand becomes a function of previous demand.

A utility function for a consumer may be written

$$(1) \quad U = v(q_{it}; P)$$

where  $q_{it}$  is consumption of good or service  $i$  in period  $t$ , ( $i=1,2,\dots,N$ ;  $t=1,2,\dots,T$ ) given preferences. A consumer's budget constraint can be written for each period:

$$(2) \quad Y_t = \sum_i P_{it} q_{it} + P_{ct} C_t$$

where  
 $Y_t$  = total income in period  $t$   
 $P_{it}$  = price of good  $i$  purchased in period  $t$   $i = 1,2,3,\dots,N$

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<sup>2</sup>Pre-purchase complaints may take place due to dissatisfaction with advertising, incomplete information, or salesperson tactics, for example.

$q_{it}$  = quantity of good  $i$  purchased in period  $t$   
 $P_c$  = price of complaint in period  $t$   
 $C_t$  = Complaints in period  $t$ .

Obtaining information and consumer complaints may involve both time and purchased input costs. These are implicitly included in the cost of complaining,  $P_c$ .

Given (1) and (2), above, "optimal" levels of demand can be derived based on consumers' A. priori preference structures. Demand for a particular complaint action depends on satisfaction in the previous period, prices, income, and preference and productivity shifters, which include both personality characteristics, non-pecuniary, and time restraints.

#### An Application to Services

There are three categories ( $y=0,1,2$ ) of complaint action: no action, private, and public complaints. Let  $P_0$ ,  $P_1$ , and  $P_2$  be the probabilities associated with these categories. The binary forms are:

$$(3.a) \quad P_0(y=0) = \frac{1}{1 + \exp\beta_1x + \exp\beta_2x}$$

$$(3.b) \quad P_1(y=1) = \frac{\exp\beta_1x}{1 + \exp\beta_1x + \exp\beta_2x}$$

$$(3.c) \quad P_2(y=2) = \frac{\exp\beta_2x}{1 + \exp\beta_1x + \exp\beta_2x}$$

where  $\beta$  are vectors of estimated coefficients and  $x$  are vectors of exogenous variables (Maddala 1983). Subscripts have been dropped for convenience. For estimation, consider that an individual falls into one of the 3 categories with the probabilities given above. Their linear forms are:

$$(4a) \quad \log \frac{P_1}{P_0} = \alpha_1 + \beta_1X$$

$$(4b) \quad \log \frac{P_2}{P_0} = \alpha_2 + \beta_2X$$

$$(4c) \quad \log \frac{P_2}{P_1} = (\alpha_2 - \alpha_1) + (\beta_2 - \beta_1)X$$

This model is estimated using a maximum likelihood, multinomial logit procedure available in the software package LIMDEP (Green 1986).

Data were collected by a mail survey sent to a simple random sample of 1500 households in Vermont in the Spring of 1989. Questions were developed by examining surveys used by other researchers interested in consumer complaining behavior (Day and Landon 1979; Ash and Quelch 1979; Duhaime and Ash 1981; Day and Bodur 1977; Marketing Science Institute 1985; Berry, et al. 1985). The questionnaire was pre-tested using a panel of experts skilled in survey research, and by students in a university level Consumer Motivation course. Data was collected about satisfaction and complaining behavior associated with services, attitudes toward consumerism and the business community, and demographics. A

total of 509 questionnaires were returned completed. 147 (29 percent) expressed dissatisfaction with a professional or personal service<sup>3</sup>. Table 1 describes the entire sample, the portion of the sample that was dissatisfied, and the non-respondents. The subsample differs significantly from the entire sample with regard to only two variables: price of the item and number of young children. Those dissatisfied with professional and personal services spent more on the services and had fewer young children at home. Non-respondents were significantly older and fewer were employed. They had less education, fewer younger children, and were less likely to be married.

Table 1. Descriptive Statistics

VARIABLE	DEFINITION	DISSATISFIED	ENTIRE	NON-
		SAMPLE	SAMPLE	RESPONSE
PRICE	Price	393.19 <sup>m</sup> (1181)	122.71 <sup>m</sup> (683)	na
INCOME	Annual income	33265 <sup>m</sup> (19607)	31857 <sup>m</sup> (20833)	na
INCAT0	Income < \$25,000	.36P	.27P	na
INCAT1	Income between \$25-50,000	.44P	.49P	na
INCAT2	Income > \$50,000	.20P	.24P	na
PART	Employed one to 30 hrs /week	.14P	.10P	.11P
FULL	Employed > 30 hours/week	.68P	.64P	.54P
YNGKIDS	Number of children under 6	.22P	.16P	.18P
SIZE	Company dissatisfied with is large	.18P	na	na
URGE	Company offers an incentive for consumer voice	.26P	na	na
AGE	Age of respondent	45 <sup>m</sup> (13)	48 <sup>m</sup> (15)	50 <sup>m</sup> (16)
COLL	Completed college	.60P	.59P	.23P
PREPUR	Dissatisfaction before purchase	.49P	na	na
DISAT	Respondent was very dissatisfied	.32P	na	na
FEMALE	Respondent is female	.46P	.45P	.48P
MARRIED	Respondent is married	.83P	.75P	.69P
RURAL	Respondent resides in a rural area	.46P	.38P	.38P
CONSUMER	Index: do sellers care about consumers	0 <sup>F</sup>	na	na
CONSPER	Index: Respondent is interested in consumerism	0	na	na
		N=147	N=509	N=100

<sup>m</sup>Mean value is given

<sup>F</sup>Created using Factor Analysis

<sup>P</sup>Proportion of the sample is given

Standard deviations are given in parentheses

<sup>3</sup> 100 non-respondents were contacted to identify whether they differed from those who completed the survey in any systematic way. Only one non-respondent indicated dissatisfaction with a professional or personal service.

Several independent variables are expected to influence the probability of either public or private complaining, compared to taking no action. Economic influences include price of the service (PRICE), and family income (INCAT1, INCAT2). PRICE is expected to have a positive influence on complaints. A more expensive item represents more of a loss to a consumer if there is a problem with it. The effect of INCAT1 and INCAT2 will indicate if complaints are normal goods.

Employment of a respondent outside the home (PARTIME, FULLTIME) and the presence of children under the age of six (YNGKIDS) measure time constraints. These variables are expected to have a negative influence on complaints since market work and presence of young children compete for available time.

Dealing with companies perceived to be large (SIZE) and whether the company offered some sort of outward customer service (URGE), such as toll-free telephone numbers to attract consumer comments, or offered a warranty, guarantee, or service contract, measure a possible softening of constraints. Based on previous research, SIZE is expected to have a negative influence on complaints, as consumers may feel that their complaints will not make a difference (Day and Ash 1979). URGE should exert a positive influence on complaints (Kendall and Russ 1975).

Learning is measured by age of respondent (AGE), and whether or not a college education was completed (COLL). Persons with a college degree may be better at problem solving, while older consumers may be more experienced at problem solving due to increased experience, or may have decreased abilities, due to old age. Previous research found ambiguous effects of age (Mason and Beardon 1981).

Attitudes are measured by two factors extracted from 21 different statements using Analysis (Appendix B). These are CONSPER, a measure of consumer attitudes toward business, and CONSUMER, a measure of consumer attitudes toward consumerism (Warland, Herrmann, and Moore 1984). CONSPER should impact negatively on public complaints because the factor is framed in terms of negative perceptions of business' willingness to respond favorably to consumers. CONSUMER should impact positively on complaints because consumers interested in the consumer movement may take steps to advance it forward.

Five additional variables are included in the analysis: the stage of the buying process dissatisfaction occurred (PREPUR), the level of dissatisfaction (DISAT), gender (FEMALE), marital status (MARRIED), and region (RURAL). Little is known about complaining before purchase. Inclusion of PREPUR may give insight into what happens when dissatisfaction occurs before actual purchase. If a consumer is very dissatisfied (DISAT), the probability of taking some type of complaint action should increase (Richins 1983). Previous research has found that, for some items, men complain more (Duhaime and Ash 1981). The

items, however, included only those previously associated with male purchases, such as automobiles and financial services. Thus, no prediction is made as to the expected effect of FEMALE. Marital status (MARRIED) was included to test the hypothesis that married persons may complain more to each other in the form of private complaints. Research has found that rural consumers tend to be more satisfied with their buying experiences (Leisfeld 1981). However, little is known about differences in the way rural consumers behave if they are dissatisfied.

## RESULTS

Results are presented in Table 2. The coefficients represent a change in the log odds of private or public complaints, compared to taking no action. Many of the included variables are significant and of the expected sign.

Table 2. Estimated Results

VARIABLE NAME	PRIVATE COMPLAINTS	PUBLIC COMPLAINTS
INTERCEPT	4.19 (2.08)**	4.34 (2.19)**
PRICE	.0025 (.0013)**	.0034 (.0013)***
INCAT1	1.51 (.70)**	.54 (.66)
INCAT2	-.64 (.83)	-1.38 (.85)*
PART	.44 (.94)	-.52 (1.04)
FULL	-.63 (.88)	-.26 (.90)
YNGKIDS	1.18 (.56)**	-1.45 (.61)**
SIZE	-1.44 (.83)*	-3.05 (.99)***
URGE	.052 (.62)	.378 (.61)
AGE	-.06 (.02)**	-.07 (.03)**
COLL	-.51 (.60)	-.12 (.58)
CONSPER	.52 (.30)*	-.002 (.28)
CONSUMER	-.53 (.29)*	.50 (.31)*
PREPUR	1.6 (.58)***	-1.79 (.58)***
DISAT	2.89 (.72)***	1.61 (.75)**
FEMALE	-1.09 (.62)*	-1.02 (.64)
MARRIED	-1.58 (.81)**	-.001 (.86)
RURAL	.25 (.56)	-.89 (.59)

N=147 Log Likelihood -106.76

\* Significant at the .10 level

\*\* Significant at the .05 level

\*\*\* Significant at the .01 level

Clearly the above results may be useful to sellers of professional and personal services. A trend in providing quality service is emerging on the supply side of the market (Forum Corporation 1988; Grim 1987; Maleck 1987). By identifying characteristics of consumers who are more or less likely to complain, or to use a particular channel of complaint action, sellers can target programs to reach consumers who do not voice their complaints or do so in ways that do not reach the seller. Demographically, younger families and those without young children are more likely to use public means to voice their dissatisfaction, while older or higher income families are less likely to use public voice. Middle income households are more likely to engage in private complaints, while being older, having young children, being married, or being female decrease the likelihood of engaging in private complaints about personal and professional services.

One supply side factor was significant. If a consumer perceives a seller to be large, both the log odds of private and public complaints decrease. The effect is greater for public complaints.

Increases in age are significant and negatively associated with both private and public complaints. Older persons may be less efficient in their interactions with the marketplace. They may have fewer available resources, feel that they are unimportant, or it just may take them longer to complete an action.

If a consumer has a negative attitude toward business, (CONSPER) the log odds of private complaints increase significantly, but public complaints are not affected. On the other hand, if a consumer is interested in consumerism (CONSUMER), the log odds of private complaints decrease and public complaints increase.

The effect of dissatisfaction occurring before purchase significantly and negatively affects of the log odds of both private and public complaints. Perhaps consumers do not know of the proper channels to take when dissatisfied with some aspect of the buying process that occurs before purchase. As expected, if a consumer is very dissatisfied with a service, the log odds of both private and public complaints increase significantly. The effect on private complaints, however, is greater. This reinforces previous findings (Richens 1983).

Being female or married only affects private complaints, and both are negative. Many items mentioned by respondents were not those traditionally purchased by males, making this result puzzling. The stereotype of females talking more to friends than males about different subjects does not fit this finding. Finally being married exerts a significant and negative effect on private complaints. One interpretation is that respondents did not consider spouses as "friends or relatives" when asked about private complaints.

The effect of economic variables is mixed. Price

is significant and positive. The more expensive the professional service, the higher the monetary loss involved. Consumers may also be more involved with the purchase. The effect of income is not straightforward. An annual income between \$25,000 and \$50,000 increases the log odds of private complaints, but is not significant in increasing public complaints. An annual income of over \$50,000 significantly decreases the log odds of public complaints, but does not significantly decrease the log odds of private complaints. The effect of income is not linear. One might conclude that for middle incomes private complaints are normal, while for high incomes public complaints are inferior.

The effects of time constraints are mixed. Employment, does not effect complaint behavior. The presence of young children significantly decreases both private and public complaints.

Attitudes are also important. Respondents who perceive that a seller is just "out to make a buck" are more likely to use word of mouth advertising to voice complaints to friends and relatives. A seller may want to use a public relations strategy to change consumers' perceptions. On the other hand, consumers concerned with consumerism are more likely to use public voice. Perhaps sellers should sell a little consumerism along with their services. It might help them in the long run. It also appears that consumers may not know correct channels to take if dissatisfaction occurs at the pre-purchase stage of buying. If dissatisfaction at this stage leads to consumers not purchasing a service, perhaps sellers should make clear a policy that includes channels for consumer voice.

On the supply side, it appears that, for professional and personal services, supplying the usual incentives for consumers to voice their opinions, including toll-free telephone numbers, guarantees and warranties, does not encourage voice. Perhaps money spent is wasted on these efforts for this category or services, or consumers are not aware of when and how to use the incentives. In addition, large companies seem to scare consumers away. In addition, if a seller has an "image" problem in which a consumer believes he/she is only out to make a buck, private complaints increase, while public complaints do not change. Perhaps a new public relations strategy is necessary for these sellers.

While the above discussion can be useful, a more direct interpretation of the results can indicate exactly how changes in certain characteristics effect the probability that a consumer will engage in public or private complaints, or take no action. Predications of probabilities using means and modes of the data as starting points indicate that, for professional and personal services, the probability of private complaints is .035, the probability of public complaints is .229, and the probability of taking no action is .784. One can change the "average" consumer and the circumstances surrounding dissatisfaction with a professional service to examine what happens to the probabilities. Interpretation of

the values is as follows: what is the effect on the probability of a particular complaint action if the variable of interest changes and all other variables remain constant? Table 3 reveals that relatively large decreases in the probability of taking no action occur if dissatisfaction occurs post-purchase, if a consumer is relatively young or male, if a household has no young children, or if the service price was high. The probability of taking no action increases by a relatively high percentage if the company dissatisfied with is large or a household makes over \$50,000 per year.

Table 3. Predictions of Complaint Action

VARIABLE	VALUE	PREDICTED PROBABILITIES		
		NO ACTION	PRIVATE COMPLAINT	PUBLIC COMPLAINT
PREPUR	0*	.785	.035	.18
	1	.955	.0084	.036
DISAT	0*	.785	.035	.18
	1	.337	.276	.385
AGE	33 <sup>a</sup>	.623	.058	.317
	45*	.785	.035	.18
	57 <sup>a</sup>	.889	.02	.091
FEMALE	0*	.785	.035	.18
	1	.911	.014	.075
MARRIED	0	.69	.152	.158
	1*	.785	.035	.1
SIZE	0*	.785	.035	.18
	1	.978	.011	.011
YNGKIDS	0*	.785	.035	.18
	1	.937	.013	.051
PRICE	0 <sup>a</sup>	.934	.018	.053
	393	.785	.035	.18
	1574 <sup>a</sup>	.071	.070	.857
CATINC	<25,000	.874	.009	.117
	25-50,000*	.785	.035	.18
	>50,000	.962	.006	.032

\*Represents values of an "average" consumer: male, age 45, college educated, married, no young children, employed full time, annual income between \$25 and \$50,000, not rural, not very dissatisfied with purchase from a small or medium sized company that did not give an incentive for consumer voice. <sup>a</sup>Values reported are one standard deviation from the mean value. Probabilities may not sum to exactly one due to rounding.

Relatively large decreases in the probability of taking no action occur if consumers are very dissatisfied with a service, if dissatisfaction occurs after actual purchase, and if a consumer is married. Large increases in the probability of taking no action occur if the price of the service is high. The probability of public complaints increases by a relatively large amount

if a consumer is very dissatisfied with a service actually purchased and the price of the service is high. A relatively large decrease occurs if a consumer has young children, a consumer is older, the service has no cost, and income levels are above \$50,000.

The above results suggest strategies which might be helpful in designing a successful customer service campaign that aids consumers:

1. Inform consumers that the seller is interested in providing complete satisfaction, regardless of product price;
2. Provide educational materials to lower-income, and aged households as to how to contact a seller when dissatisfied;
3. Promote the notion that sellers are aware that customer voice is an important aspect of improving market transactions and that even large sellers are consumer oriented;
4. Outline a specific policy dealing with dissatisfaction that occurs pre-purchase, including dissatisfaction with advertising or sales persons; and
5. Promote relatively efficient ways of voicing dissatisfaction, to encourage public voice from households faced with time constraints (however, for professional and personal services supplying toll-free telephone numbers does not effect complaint action).

Many of these defensive marketing strategies are already used by sellers of services. The results indicate that they appear to be useful to those sellers and might prove useful to others who have not yet implemented them. Strategy 3 is often avoided by sellers. Perhaps public relations campaigns promoting consumerism may actually help sellers in retaining customers and attracting others.

#### DISCUSSION

The model estimated in this study is a step forward in predicting consumer complaint action. Because it includes those who take no action or private action as well as those who use public action, the results can be useful in developing defensive marketing strategies. The model is relatively simple to estimate and calculated probabilities are easily interpreted. Further simulations can paint a picture of how complaint actions change as scenarios change. However, there are several limitations to the study that warrant future research.

First, the data included only professional and personal services. Little is known about the complaint action of consumers who are dissatisfied with other services. Others should be examined to see if consumers behave differently depending on service category. Second, a complete model of the complaint process should include resolution of complaints and future demand. The model proposed can be expanded to include these because it includes the passage of

time. Empirically, this suggests a recursive model. Dissatisfaction leads to complaints which lead to some sort of problem resolution which can affect future demand. Third, the model included supply side factors as exogenous. It is probably the case that supply and demand side factors are determined simultaneously. An extension of the model might not only include a recursive specification, but one that is block recursive. That is, complaints and resolutions might be simultaneously determined, while initial complaints and subsequent demand enter the system recursively. One major problem with such a model is the fact that limited dependent variable recursive models are currently developed for the two choice case only. Complaint actions include at least three choices. This causes problems in empirical estimation.

#### REFERENCES

- Andreasen, Alan, (1977), "A Taxonomy of Consumer Satisfaction/Dissatisfaction Measures," Journal of Consumer Affairs, 11(2) Winter, pp. 11-23.
- Andreasen, Alan, (1988), "Consumer Complaints and Redress: What We Know and What We Don't Know," in The Frontier of Research in the Consumer Interest, E. Scott Maynes and the ACCI Research Committee, eds., American Council on Consumer Interests, 1988, pp. 675-722.
- Ash, Steven, and John Quelch, (1979), "Consumer Satisfaction, Dissatisfaction and Complaining Behavior: A Comprehensive Study of Rentals, Public Transportation, and Utilities," in Day and Hunt, New Dimensions of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, Indiana University School of Business, 120-130.
- Beardon, William, (1983), "Profiling Consumers Who Register Complaints Against Auto Repair Services," Journal of Consumer Affairs, 17(2), Winter, pp. 315-335.
- Bryant, W. Keith, (1988), "Consumer Complaints and Redress: Some Directions for Future Research," in The Frontier of Research in the Consumer Interest, E. Scott Maynes and the ACCI Research Committee, eds., American Council on Consumer Interests, 1988, pp. 723-726.
- Cohen, David, (1973), "How Product Complaints Help Improve Performance," Management Review, July, pp. 9-16.
- Day, Ralph, and Steven Ash, (1979), "Comparison of Patterns of Satisfaction/Dissatisfaction and Complaining Behavior for Durables, Nondurables, and Services," in Day and Hunt, eds. New Dimensions of Consumer Satisfaction, Dissatisfaction, and Complaining Behavior, 190-195.
- Day, Ralph, and Muzaffer Bodur (1977b), "A Comprehensive Study of Satisfaction with Consumer Services," in Day, Ralph, ed. Consumer Satisfaction, Dissatisfaction, and Complaining Behavior, Indiana University School of Business, 64-74.
- Day, Ralph, and E. Laird Landon, (1977), "Toward A Theory of Consumer Complaining Behavior," in Woodside A., J. Sheth, and P. Bennett, Consumer and Industrial Buying Behavior, New York: North-Holland, pp.425-437.
- Day, Ralph, and E. Laird Landon, (1977), "Collecting Comprehensive Complaint Data By Survey Research," in Day, ed. Consumer Satisfaction, Dissatisfaction, and Complaining Behavior, Indiana University School of Business, 263-268.
- Day, Ralph, Thomas Schaeztle, Klaus Grabicke, and Fritz Staubach, (1981), "The Hidden Agenda of Consumer Complaining," Journal of Retailing, 57(3), Fall, pp. 86-106.
- Duhaime, Carole, and Stephen Ash, (1981), "Satisfaction, Dissatisfaction and Complaining Behavior: A Comparison of Male and Female Consumers," in Day and Hunt, editors, Refining Concepts and Measures of Consumer Satisfaction and Complaining Behavior, Bloomington, IN: School of Business, Indiana University, pp. 102-111.
- Fornell, Claus, (1978), "Economic Constraints on Consumer Complaining Behavior," in Olsen, Jerry, editor, Advances in Consumer Research: Proceedings of the Association for Consumer Research, Tenth Annual Conference, pp. 318-323.
- Fornell, Claus, and Birger Wernerfelt, (1987), "Defensive Marketing Strategy by Customer Complaint Management: A Theoretical Analysis," Journal of Marketing Research, 24 (November) 337-46.
- , and Robert Westbrook, (1984), "The Vicious Circle of Consumer Complaints," Journal of Marketing, 48(Summer), pp. 68-78.
- The Forum Corporation (1988), "Consumer Focus Research," Alexandria, VA.
- Gilly, Mary, and Betsy Gelb, (1982), "Post-purchase Consumer Processes and the Complaining Consumer," Journal of Consumer Research, 9(December), pp. 323-328.
- Green, William, (1986), Limdep, variable equations.
- Grim, Cynthia, (1987), "Understanding and Reaching the Consumer: A Summary of Research. Part I - Consumer Complaint Behavior," Mobius, Spring, pp. 14-19.
- (1987), "Understanding and Reaching the Consumer: A Summary of Recent Research. Part II - Complaint Response Satisfaction and Market Impact," Mobius, Fall, pp. 18-25.
- Gronhaug, Kjell, (1977), "Exploring Consumer Complaining Behavior: A Model and Some Empirical Results," in Advances in Consumer Research, Vol IV. William Perrault, Jr., editor. Chicago: Association for Consumer Research. pp. 159-165.
- Hirshman, A.O., (1970), Exit, Voice, and Loyalty: Responses to Declines in Firms, Organizations, and States, Cambridge, MA: Harvard University Press.
- Kolodinsky, Jane, (1990), "An Integrated Model of Consumer Complaint Action Applied to Services: A Pilot Study," The Journal of Satisfaction, Dissatisfaction, and Complaining Behavior, Vol. 3 pp. 61-70.
- Lawther, Karen, S, Krishnan, and Valerie Valle, (1978), "The Consumer Complaint Process:

- Directions for Theoretical Development," in Keith Hunt, Consumer Satisfaction and Complaining Behavior, Bloomington, IN: School of Business, Indiana University), pp. 10-14.
- Leisfeld, John, (1981), "Urban/Rural Consumer Expectations and Evaluations of the Consumer Realities," in Day and Hunt, editors, Refining Concepts and Measures of Consumer Satisfaction and Complaining Behavior, Bloomington, IN: School of Business, Indiana University, pp. 102-111.
- Maddala, G.S. (1983), Limited Dependent and Qualitative Variables in Econometrics, (Cambridge: Cambridge University Press).
- Maleck, Arlene, (1987), "The Changing Complaint Handling Environment: Implications for the Consumer," in Proceedings of the 33rd Annual Conference of the American Council on Consumer Interests, Vickie Hampton, editor, pp. 1-7.
- Marketing Science Institute, "Consumer Attitude Questionnaire," Cambridge, MA.
- Mason, J. Barry, and William O. Beardon, (1981), "Consumer Satisfaction and Elderly Shopping Behavior," in Day and Hunt, editors, Refining Concepts and Measures of Consumer Satisfaction and Complaining Behavior, Bloomington, IN: School of Business, Indiana University, pp. 102-111.
- Oster, Sharon, (1980), "The Determination of Consumer Complaints," Review of Economics and Statistics, 62(4), 603-609.
- Richins, Marsha (1981), "Consumer Perceptions of Costs and Benefits Associated with Complaining," in Hunt and Day, editors, Refining Concepts and Measures of Consumer Satisfaction, Dissatisfaction, and Complaining Behavior, Bloomington IN: School of Business, Indiana University, pp. 50-56.
- , (1983), "Negative Word-of-Mouth by Dissatisfied Consumers: A Pilot Study," Journal of Marketing, 47(Winter), pp. 68-78.
- SOCAP, (1989), "1988 Award Winning Programs", Mobius, 7(1), Winter, pp. 13-21.
- TARP, (1986), Consumer Complaint Handling in America: An Update Study Parts I-II.
- Valle, Valerie, and Melanie Walendorf, (1977), "Consumer Attributions of the Cause of Their Product Satisfaction and Dissatisfaction," in R. L. Day, editor, Consumer Satisfaction and Complaining Behavior, Bloomington, IN: School of Business, Indiana University.
- von Weizsacker, Carl C. (1971), "Notes on Endogenous Changes in Tastes," Journal of Economic Theory, Vol 3. pp. 345-72.
- Warland, Rex, Robert Herrman, and Dan Moore, (1984), "Consumer Complaining and Community Involvement: An Exploration of Their Theoretical and Empirical Linkages," Journal of Consumer Affairs, 18(1), Summer, pp. 64-78.
- Warland, Rex, Robert Herrman, and Jane Willits, (1975), "Dissatisfied Consumers: Who Gets Upset and Who Takes Action?" Journal of Consumer Affairs, Vol. 9, pp. 148-163.

#### APPENDIX A: Professional and Personal Services

lawyers	veterinarians
home security services	private detectives
architects	employment agencies
travel agencies	barber shops/beauty
salons/spas	
nursing or rest homes	real estate brokers
dentists or technicians	income tax preparers
computer dating	medical doctors/nurses
psychologists	physical therapists
optometrists or ophthalmologists	

#### APPENDIX B: Factor Analysis - Attitudes

Respondents were asked to indicate whether they agreed or disagreed (using a five point Likert scale) with fifteen statements about consumer interaction with the marketplace. Factor Analysis using Varimax rotation was used to identify two factors that explained 89 percent of variation in the data. These factors were called CONSPER and CONSUMER. CONSPER is a measure of consumer attitudes toward business. Statements that received high positive factor loading on the first factor included: "If people have problems or complaints about things they buy, it is often difficult for them to get corrected," "Most companies are so concerned about making a profit, they don't care about quality," "Most manufacturers don't really care about giving consumers a fair deal," "Most stores don't care about giving consumers a fair deal," and "'Let the Buyer Beware' is the motto of most stores." The statement "In general, manufacturers try to design products/services to fit the needs of the consumer," and "Over the past five years the quality of most products/services has improved" received a high negative factor loading for the first factor. CONSUMER measures a consumer's attitudes toward consumerism. High positive factor loadings for the second factor included the statements: "There is a need for consumers in this country to get together to protect their interests," "I often read Consumer Reports before I buy an item," and "I often discuss the need for better consumer protection with family and friends. Factor one and two are used in the logit analysis as measures of how attitudes affect complaint action.