American Council on Consumer Interests 32nd Annual Conference Proceedings,
Karen P. Schnittgrund (ed.), April 9-12, 1986.

COMMUNICATING PERFORMANCE INFORMATION TO CONSUMERS OF CLOTHING: AN ECONOMIC ANALYSIS

Wanda Sieben, University of Minnesota - Twin Cities[1]
Jean Kinsey, University of Minnesota - Twin Cities[2]

ABSTRACT

The nature of information communicated to clothing consumers is analyzed and a summary of previous findings about consumer satisfaction with clothing performance are presented. It was determined that manufacturer-to-consumer communication systems currently used by clothing manufacturers provide data, not necessarily information. Such communication systems lead to economic losses when consumers in the post-purchase situation realize utility different from that expected at purchase. A conceptual framework for measuring losses in consumer welfare from imperfect information is presented. The model is used to explain why consumers do not take remedial action when clothing is unexpectedly inferior. Implications for information policies are outlined.

INTRODUCTION

Manufacturer-to-consumer communication systems are used by manufacturers to assist the consumer in making decisions about the performance characteristics of clothing. These systems influence consumers' purchase decisions and their expectations about the utility a garment will yield. When expectations are met, satisfaction generally occurs. However, when insufficient date and/or information is communicated to clothing consumers they make errors in predicting performance utility. They obtain goods in combinations which do not maximize their satisfaction. and misallocate their resources, diminishing their well-being. Thus the market failed to serve consumers' needs for information and an economic loss is incurred. Conversely, minimizing economic loss from inaccurate information improves consumers' resource allocation, increases their well-being and helps assure repeat sales for clothing retailers. It is critical that the message communicated to consumers is accurate, complete and in a useful form. Only then can consumers evaluate their preferences for specific goods in terms of needs, and weigh the relative merits of a good for predicting satisfaction in use.

A manufacturer-to-consumer communication system is often broadly referred to as an information system. Care must be taken in using the term information; its definition varies in the literature. Dohan (1976:22) points out the need for a distinction between the terms data and information. Data consists of objective, testable facts about a product. To be informative to the ultimate consumer, data must be processed (Scammo, 1977). "An information system includes not only the production of data but also analysis and interpretation of these data in some purposeful policy decision or problem solution context" (Martin, 1977:397). Information is the end product of a process which imposes form and gives meaning to data. From a consumer point of view, data that is not in an understandable format is not considered information (Russo, 1974). Information has an explicit, easily understood meaning, in relation to garment characteristics. It does not need to be further processed to make it useful in consumer decision-making. A statement that a garment will shrink 3% is data. That it will shrink one inch in length where laundered according to instructions converts that data into information.

Most communication systems used for clothing provide data; a few provide information. Communication systems that provide only data lead consumers to encounter greater costs in consuming garments than they anticipated at the time of purchase. Before purchasing, consumers can determine the purchase price, the cost of searching for information about the characteristics of various types of garments, where to purchase them and the opportunity costs of their time. They can also estimate the post-purchase costs of maintenance such as washing and repair or if the garment does not perform as implied, the cost of early replacement or exchange. It is assumed that the purchase price is the same for all consumers but that all the other costs vary from one consumer to the next, depending on their knowledge base, experience, wage rate, preferences for certainty in decision-making and their propensity to recognize and take remedial actions when products do not perform as expected or are otherwise defective. If post-purchase costs, associated mainly with physical performance, are greater than expected, the effective price of consuming garments increases and the utility received is less than the utility expected. Consumers will have allocated to many resources to those garments and will experience an economic loss.

The design of manufacturer-to-consumer communication systems for clothing is critical because consumer satisfaction with clothing is based on two types of performance in use -- psychic performance and physical performance. The former refers to the psychological and esthetic satisfaction expected due to the fit, fashion, or color of the clothing. Physical performance refers to durability characteristics such as size or color retention. The ability to evaluate the two types of performance in clothing is not equal.

[1]Wanda Sieben is an instructor in the Department of Design, Housing, and Apparel.

[2]Jean Kinsey is an Associate Professor in the Department of Minnesota,of Agriculture and Applied Economics.

Consumers generally have the sensory capability to evaluate psychic characteristics such as fit and fashion, whereas they do not have the independent capability to evaluate physical characteristics such as shrinkage potential. Information regarding the physical performance of clothing is usually latent at the time of purchase. Consumers must, therefore, place their trust in the manufacturer and retailer, and buy on the basis of price and visually-perceivable characteristics, assuming a satisfactory level of physical utility will be forthcoming. Once the purchase is made and the garment is put into use, consumers start their own testing program of purchased garments, which reveals the true physical performance characteristics (Anon. 1973). As this evaluation is carried out, the performance utility realized may diverge in either direction from that expected.

I. CLOTHING INFORMATION SYSTEMS

Clothing product communication systems can be classified as voluntary and involuntary with the latter being dictated primarily by legislation. None of the communication systems currently used, either voluntary or legislated, provide the novice clothing consumer with accurate information about quantitative physical performance parameters to be experienced in use.

Legislated labeling of clothing came about with the Wool Products Labeling Act (WPLA) of 1939, Fur Products Labeling Act (FPLA) of 1951, and the Textile Fiber Product Identification Act (TFPIA) of 1958, which mandated objective data about fiber content and percentage.

Some consumers, however, erroneously view fiber content as information when, in fact, it is data. The clothing product is a complex system with fiber content of the fabric being only one piece of relevant data. The wide range of textile fibers available, coupled with the numerous methods of producing, finishing, and applying design to fabrics, not to mention the numerous design options and production techniques used in the fabrication of ready-to-wear garments, make it impossible for the consumer to process fiber content data into information regarding physical performance of garments (Coles 1932) or appropriate care. The physical performance of garments in wear and cleaning are latent values to the consumer, and cannot be accurately assessed visually, even by a textile expert (Laun 1969). Consequently, legislation mandating fiber content on labels may give consumers a false sense of expertise and inhibit them from seeking other relevant information (Udell 1974).

Passage of the care labeling trade regulation in 1972 helped alleviate the danger of predicting care on the basis of fiber content data by providing permanent care information. Care labels carry an implied warranty that, if the care instructions are followed, the garment will retain its appearance. Also, the care label gives the consumer an indication of the cost of maintenance. One problem with care labels has been that many instructions are overly conservative leading to the use of more expensive dry cleaning where careful home laundering would have sufficed. It will be shown later, however, that labels that do not exaggerate performance are more likely to lead to satisfied customers.

Voluntary producer-developed labeling systems include identifying the percentage of garment shrinkage with 3% being the maximum shrinkage considered tolerable. It is common knowledge in the apparel industry that 3% shrinkage will reduce a garment's dimensions by one size. However, most consumers are unaware of this guideline. Given knowledge of this guideline, consumers could process the percentage data and alter their behavior in the market. A limited number of apparel manufacturers process percentage data to provide information - such as, "Inseam will shrink one inch." Upon reading that label, consumers requiring a 29 inch inseam would most likely purchase a 30 inch inseam, ensuring fit after washing. Such information affixed to the garment enables each consumer to make an efficient choice in the market without having to know or recall the guideline. The data has been processed into information; a latent defect of this garment is no longer concealed from the consumer.

Some fiber manufacturers have tried other methods to simplify the process of supplying physical performance information to clothing consumers. For example, Celanese (a fiber manufacturer) established a performance level for each end use and required garment manufacturers to meet those standards before they were allowed to attach the Celanese hang tag to their garments. Such licensed hang tag programs are a form of image labeling which is an implied warranty that the clothing is of high quality and will perform satisfactorily. Consumers, thereby, are not given quantitative physical performance data but an assurance of performance. Such assurance adds to the product's more obvious values of fashion and price (Laun 1969).

Using brand names is another system of communicating hidden value performance to consumers. In an uninformed market where consumers have already learned they cannot rely on visual signals of quality, brand names provide consumers confidence. The consumer assumes that "no manufacturer would put his mark on shoddy or inadequate goods" (Marshall 1967:36), inasmuch as a manufacturer runs the risk of losing repeat sales if the product is unsatisfactory. Oxenfeldt (1950), however, found quality to be highly inconsistent between different lines of a given brand of the same product. This indicates consumers are not necessarily protected by brand names. "The quality of a product is determined by the producer, and he can improve or deteriorate the quality as he sees fit and still continue to use the same brand name," (Gordon 1972:345). Without precise information of an objective nature on past and current purchases, the consumer is powerless to evaluate the continuing validity of a brand name as a predictor of product quality.

Assessment of fit is a critical factor in the consumer's decision to purchase a garment. For the purpose of communicating information about how

garments will fit a consumer's body, manufacturers supply size data. Using body measurements to designate size is more common in the menswear industry than in women's or children's clothing, where sizes are arbitrary numbers. The designer, Siruant Mellian, observed, "Numbers (sizes) don't correlate with anything. . . Those are just codes used to catalogue or stock (merchandise)," (Simmons 1982). To obtain information about garment fit, one is advised to try on every garment before purchase. Unfortunately, a concealed defect in the fabric, e.g. shrinkage, can alter the garment size after washing or dry cleaning and a satisfactory fit at purchase may not coincide with the realized fit after washing.

Neither involuntary nor voluntary information systems communicate quantitative information on the performance of textile products. "It is the hidden properties of the finished textile product which can only be determined by the consumer during wearing and cleaning that assure satisfaction" (Fortess 1971:48). Swan and Combs (1976) studied consumer satisfaction with clothing and found that poor physical utility was the primary reason given by consumers for dissatisfaction with clothing, while reports of satisfaction were generally associated with psychic utility in the pre-purchase situation. Color and style are almost the only differences between brands that consumers are capable of judging; it should not be surprising that consumers attach such importance to them. Consumers may desire serviceable products, but they select the product with the greatest aesthetic appeal if, as far as they can determine, all brands are equal in functional performance. The importance consumers attach to psychic factors apparently diminishes as they obtain information about functional attributes (Oxenfeldt 1950).

In the absence of informative labeling, price may be the more important and widely used index of quality. This assumes that price is determined by the competitive interplay of the forces of supply and demand, and there is a direct relationship between the amount of money paid and the quality of goods received (Hollander 1966). In the textile industry, debasing the quality of goods as they move to the low price end of the market is a common practice. Unfortunately for the consumer, such changes are usually not discernable visually. "In the uninformed market it is irrational to judge quality by price. When uninformed buyers tend to rely on indexes, often meaningless ones, for appraising quality and when the majority of buyers are uninformed and rely on such indexes, their opinion cease(s) to be trustworthy. Prices, therefore, which reflect the untrustworthy opinion of buyers, also become unreliable indexes of quality," (Scitvosky 1951:484-5).

Empirical evidence exists in the literature that the widely-held belief, "You get what you pay for," is not valid for clothing. Gale and Dardis (1970) assessed the price/quality relationship for men's shirts. Quality ratings were derived from both the physical tests and wearer evaluations. Findings indicated that a weak price/quality relationship existed, primarily for garment construction as opposed to fabric performance. In wearer evaluations, both price and brand names were found to be directly associated with evaluations of quality. Phelps (1944) reviewed research in the field of home economics and found a mass of evidence that price is a poor indication of quality for the durability of towels, the wearability of cotton and rayon dress fabrics, the colorfastness or shrinkage of other materials. With other products, Oxenfeldt (1950), Friedman (1967), Gardner (1971), Norton (1980), and Maynes (1976), also found the relationship between price and quality to be relatively weak. Consumers making purchase decisions by equating price and quality will often be disappointed, will misallocate their budgets, and incur economic losses.

II. ECONOMICS OF INFORMATION SYSTEMS

A review of economic literature reveals two basic conceptual treatments of the effect of misinformation on consumer demand and subsequent satisfaction or welfare. The first looks at information about product characteristics. Auld (1972) developed a theoretical model illustrating that consumers altered consumption patterns when receiving full information about the characteristics of a product. Colantoni et al. (1976) used a similar theoretical framework applying it to the problem of choosing automobile safety features. He concluded that a consumer will never be better off with less than full information.

The second basic approach is exemplified by Peltzman (1973), who analyzed the welfare effects of imperfect information by estimating the benefits of the 1962 Kefauver-Harris amendment to the Food, Drug, and Cosmetics Act. The model used consumer surplus analysis to measure the relevant costs and benefits. Kinsey, Roe and Senauer (1980) elaborated on Peltzman's model, integrating the possibility of imperfect information directly into the utility function. This model has been used to provide a monetary estimate of the private and social cost of inaccurate gasoline mileage estimates (Senauer, Kinsey and Roe 1984, 1986), and to analyze welfare effects of food labels (Sexton 1981).

Following the second approach, the impact of imperfect information on consumer costs is illustrated in Figure A. The expected utility from consuming a particular quantity of goods can be measured by the total area under the demand curve up to the quantity purchased. The market demand curve, which reflects all consumers' preferences, depicts aggregate willingness to pay different prices for different quantities of goods rather than do without them. It is assumed that all consumers pay the same market price (P_o). Those consumers who are willing to pay more than P_o receive some benefits above that for which they pay. This extra benefit is known as consumers' surplus and is represented by the area below the (original) demand curve (D_o) and above the price P_o, namely, the sum of the areas A and B in Figure A.[1] If consumers had known the garment's true characteristics and its true (higher) costs at the time of purchase, they would have been willing to

pay the purchase price (P_o) minus the extra post-purchase costs incurred (P_o-P_t). In other words, not knowing about (P_o-P_t), they paid too much for the garment. Discovering they paid too much is tantamount to discovering that the true demand curve (D_t) lies below the original demand curve (D_o). Consumers are subsequently willing to pay less than P_o for the original quantity (Q_o) or they are willing to buy fewer garments (Q_t) at the original price (P_o).[2]

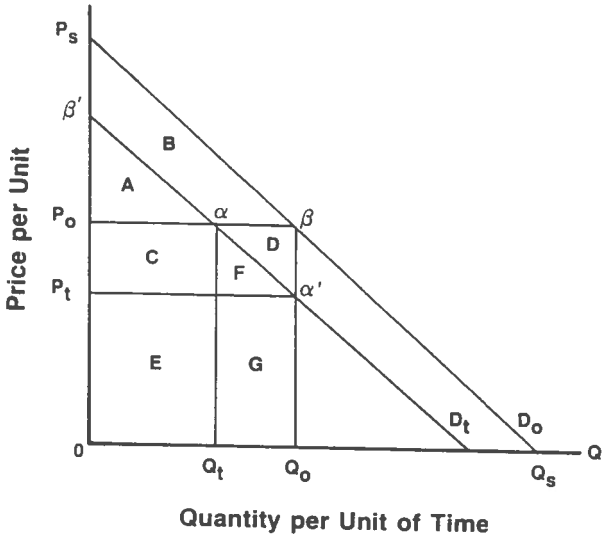

FIGURE A. True demand curve (D_t) below original demand curve (D_o).

The extra units Q_o-Q_t were, however, consumed. The true value of these units was discovered to be $\alpha\alpha' Q_o Q_t$, even though $\alpha\beta Q_o Q_t$ was paid for them. A net loss of (area D), was incurred by purchasing the extra Q_o-Q_t units.

Costs of inaccurate information can alternatively be identified by analyzing changes in consumer surplus under various conditions. Using capital letters to designate specific areas in Figure A, the total expected utility from Q_o at price (P_o) is equal to the area, A+B+C+D+E+F+G. Consumers paid area C+D+E+F+G for the goods leaving area A+B representing consumers' surplus <u>expected</u> at the time of purchase. Making a fully informed choice of only Q_t units at price P_o, the total optimal utility is represented by area A+C+E with area A being <u>optimal</u> consumer surplus.

Consumers who did not have full information and did not make the optimum choice realized utility different from what they expected and different from the optimum. The utility <u>realized</u> from the purchase of Q_o garments at price P_o is the area A+C+E+F+G. The difference between realized consumer surplus and that expected is the negative of areas (B+D). The difference between the optimal and realized consumer surplus is represented by area D, the <u>economic loss</u> suffered by consumers who misallocated their income. It represents dollars spent for garments for which no utility was received. It can also be thought of as the amount of money consumers would be willing to pay for information which would have allowed them to make an optimal choice originally.

Area D can be estimated by knowing the distance $\Delta P = (P_o - P_t)$, the original quantity (Q_o), and the price elasticity (ε) of the demand curve.[3]

$$\text{Area } D = \varepsilon Q_o (\Delta P)^2 / 2P_o \qquad (1)$$

Equation (1) provides a monetary measure of the difference between optimal and realized utility.[4]

Sometimes, an uninformed purchase decision reveals the true demand curve to lie to the right of the original demand curve. This happens when a product performs better than expected and the post-purchase costs of consumption are less than anticipated. Consumers may ultimately spend less time caring for garments or they may last longer than expected. In this case, consumers with full information would have been willing to spend more for the original quantity of garments, or they would have purchased more garments at the original price. Figure B illustrates this situation. Consumers paid P_o' for Q_o' garments, expecting a total utility of A+C+E under demand curve D_o. The <u>expected</u> consumer surplus was A+C. P_t'-P_o' represents the unexpected decrease in consumption costs which translates into an increased willingness to pay P_t'-P_o' more for the original quantity of garments. This reveals the true demand (D_t) where consumers making optimal decisions would have purchased Q_t' garments at price P_o'. The <u>optimal</u> consumer surplus is equal to the area A+B+C+D+F.

Having made a nonoptimal choice, consumers realized consumer surplus (utility) greater than expected by area B+D but they still suffered an economic loss from misallocating their clothing budget by area F. Area F can also be estimated with equation (1).

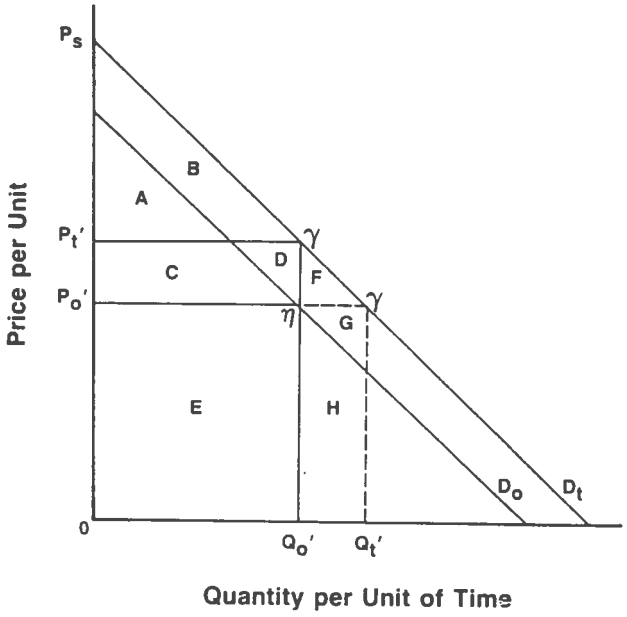

FIGURE B. True demand curve (D_t) above original demand curve (D_o).

It has been demonstrated that the economic loss, known as the allocative error, due to imperfect information can be measured by the triangular areas D and F in Figures A and B, respectively. These areas measure the difference between the utility realized from the actual purchase and the utility that would have been realized if an optimal purchase decision had been made on the basis of perfect information. However, it does measure the difference between the consumer surplus expected and the consumer surplus realized. The question remains of how these differences affect consumers' behavior and their satisfaction.

In the first case, where consumers' surplus is less by area B+D (Figure A), we would expect them to be disappointed and unsatisfied with their purchase decision (Bearden 1983). Dissatisfaction would predictably be expressed in the marketplace in the next time period by purchasing fewer of these garments. Area D is an actual monetary loss while area B is the monetary equivalent of unrealized utility and, as such, it is an appropriate (proxy) measure for the costs of disappointment borne by consumers who have chosen too many inferior garments. By simple inspection, it can be seen that area B is larger than area D, implying that the costs of unrealized utility are greater than the economic allocative loss.

An additional contribution offered by this model, not previously explored, is that it helps explain why many consumers do not take remedial action when a product is unexpectedly inferior (Beardon 1983). Remedial action by the consumer involves the costs of "... his/her time and trouble experimenting with the article, wrapping it up and taking it back, hunting around for a satisfactory substitute," (Chase 1931:251), plus transportation costs. With apparel, the consumer has often purchased matching coordinates or accessories that further increase the monetary loss in the event that a suitable replacement cannot be found. Remedial action then only further increases the post-purchase costs (P_o-P_t, Figure 1) pushing D_t farther down and to the left, increasing the size of areas D and B, exacerbating the economic loss and the costs of disappointment. Minimizing P_o-P_t minimizes the difference between expected and realized utility. It is, therefore, rational for consumers to expend as little time and money as possible to remedy unexpected flaws in merchandise already purchased, unless they can expect to recoup a substantial portion of their losses at minimal cost and/or that loss is a nontrivial portion of their total budget.

With respect to disappointment costs, no one likes to admit they have judged a product incorrectly and were wrong; therefore, they may prefer to remain silent. Even when remedial action is taken and the purchase price is refunded, the retailer may impress upon the consumer that the product was used or cared for incorrectly. Consequently, the consumer suffers psychological loss (Chase 1931). Consumers who prefer to avoid situations of conflict and who value their leisure time would also be expected to minimize their economic losses and their disappointment costs by avoiding remedial action.[5] One strategy for avoiding hassles with returns of defective merchandise is to shop at retail outlets with liberal return policies.

Consumer expectations regarding garment performance are influenced by the retail price. The higher the price paid for an item, the more nearly perfect it is expected to perform. When a raincoat shrank and discolored at the cleaners, the consumer stated, "A raincoat that cost $275 should not shrink or discolor," (Anon. 1976). She sued for one million dollars when the store failed to keep its promise to testify that its garment was of high quality in a legal proceeding against a cleaner. Although such remedial action is not a common occurence, this situation exemplifies expectations relative to purchase price which may lead consumers to exercise their rights. The majority of apparel, however, is moderately priced and losses incurred by individuals are relatively small. In the aggregate, the magnitude of a large number of small losses absorbed by consumers is an unknown entity.

In the case where consumers realize more utility than expected, area B (Figure B) can again serve as a monetary measure of the unexpected difference in expected and realized utility. Its size is determined by the unexpected increase in willingness-to-pay (P_t-P_o) for a superior garment. Area B represents 'bonus' utility which, by inspection, is far greater than the economic loss due to buying too few of these garments. Consumers, in this case, would certainly be expected to be satisfied with their purchase, and their unexpected increase in utility would lead to an increased sense of well-being. The behavioral incentive is simply to purchase more of this type of garment in the next time period.

If unexpected increases and decreases in utility and costs were equally likely, consumers should be willing to spend an amount equal to that represented by area D or area F to obtain information that would permit them to purchase the optimum number of garments. Consumers would not, however, be expected to be equally willing to search and pay for information that would eliminate the loss of unrealized utility (area B in Figure A) and an unexpected gain of utility (area B in Figure B). There exists an asymmetry in the differences between realized and expected utility when consumers incur unexpected costs and unexpected savings. In the former case, consumers are worse off than expected, disappointed, and have rational disincentives to correct their error. In the case of unexpected increases in utility, they are better off than expected and, in spite of allocative mistakes they very likely feel satisfied with their choice.

III. IMPLICATIONS FOR INFORMATION POLICIES

Increased information about physical performance on clothing labels would enable consumers to choose garments that will bring them satisfaction and would lead to a more efficient allocation of consumers' clothing budgets. The difference between consumers who are satisfied and the consumers who are disappointed, lies in the direction of the

difference between realized and expected utility. Inflating consumers' expected utility with optimistic advertising or labeling can lead to disappointment and to extra monetary costs. Consumers should be willing to pay manufacturers not to overstate the performance of their garments. Theoretically, they should be equally willing to pay for information leading to the purchase of an optimal number of superior garments. If information cannot be complete, a slight understatement about performance appears to be preferable, even though it is still inefficient.

An important implication for apparel manufacturers is that the voluntary use of informative physical performance labels becomes a viable choice criteria in the purchase decision. It is possible that the demand for some merchandise will decrease if the label carries information which reveals negative physical performance to the consumer and the price is not concomitantly lowered. However, if the consumers are not subsequently disappointed, they can be expected to be repeat customers. Recognization of the utility value of performance information to consumers could stimulate increased communication between the textile and apparel industry. The textile-apparel interface communication might be improved so that retailers, apparel manufacturers and fabric suppliers work from garment specifications and the communication problems as they now exist may be dissipated. Only then may the "full commercial benefit ... of the technological knowledge that is ... available" be realized (Urguhart 1965).

Implications for educational programs are that they can effectively serve consumers' interests by developing consumers' general skills in analyzing care labels and an awareness of the limitation of labels currently provided. Labels providing information as opposed to data would change the focus of consumer education programs. Emphasis would move to the understanding and application of information on the clothing label as opposed to an interpretation of data made available.

Implications for public policy include mandating informative labels that minimize the surprises experienced by clothing consumers as they wear and care for their garments. Research that establishes the correlation between labels' information, performance utility, price, and consumers' satisfaction will foster efficient allocation of resources and increased consumer well-being.

NOTES

[1]For a discussion about rigorous measures of consumers' surplus, see Willig (1973); Chipman and Moore (1980); Hausman (1981); and Currie, et.al. (1971).

[2]Consumers' willingness to pay P_o for Q_o garments incorporates their known search costs and their expected post-purchase costs of consumption.

[3]Three simplifying assumptions for this estimating model are: (a) a linear demand curve, (b) parallel shift in demand, i.e., new information did not change the price elasticity of demand, and (c) there exists some price for which demand is zero.

[4]By definition, price elasticity $= \varepsilon \frac{\Delta Q/Q_0}{\Delta P/P_0}$

Solving for ΔQ gives: $\Delta Q = \varepsilon(\Delta P/P_o)Q_o$. Thus, Area $D = 1/2\,\Delta P \Delta Q = \varepsilon Q_o(\Delta P)^2/2P_o$.

[5]Differences between consumers who complain and those who do not may be explained largely by the value of their time and by what brings them peace of mind (Laird 1977; Russo 1979; Day 1977). Some view filing complaints as a public duty, realizing the public good. If continued use of an inferior product is particularly irritating, satisfaction may be found by attempting to exchange a product for its purchase price. The same situation would exist if the purchase price were a large share of the consumers' total budget.

REFERENCES

Anon. "Boys' Knit Shirts: What You Can't Find Out." Consumer Reports 38 (November 1973): 674.

Anon. "Raincoat Shrinks; she asks $1 million." St. Paul Pioneer Press, June 10, 1976.

Auld, Douglas. "Imperfect Knowledge and the New Theory of Demand." Journal of Political Economy 80 (November 1972): 1287-1294.

Bearden, William O. "Profiling Consumers Who Register Complaints Against Auto Repair Services." The Journal of Consumer Affairs 17 (Winter 1983): 315-335.

Chase, Stuart, and Schlink, F.J. Your Money's Worth: A Study in the Waste of the Consumer's Dollar. New York: The Macmillan Co., 1931.

Chipman, John S., and Moore, James C. "Compensating Variation, Consumer's Surplus and Welfare." The American Economic Review 70 (December 1980): 933-949.

Colantoni, Claude E., Davis, Otto A., and Swaminuthan, Malati. "Imperfect Consumers and Welfare Comparisons of Policies Concerning Information and Regulation." The Bell Journal of Economics 7 (Autumn 1976): 602-615.

Coles, Jessie U. Standardization of Consumers' Goods. New York: The Ronald Press Co., 1932.

Currie, John Martin, Murphy, John A., and Andrew Schmitz. "The Concept of Economics Surplus and Its Uses in Economic Analysis." Economic Journal 81 (1971): 741-799.

Day, R.L. "Extending the Concept of Consumer Satisfaction." Advances in Consumer Research. Atlanta: Assoc. for Consumer Research 4 (1977): 149-154.

Dohan, Michael R. "Cost Maximization and Buyer Dependence on Seller Provided Information." Journal of Economic Issues 10 (June 1976): 430-452.

Fortess, Fred. "Consumerism and the Textile Industry." Textile Chemist and Colorist 3 (May 1971): 47-50.

Friedman, Monroe Peter. "Quality and Price Considerations in Rational Consumer Decision Making." Journal of Consumer Affairs 1 (September 1967): 13-23.

Gale, Arlee, and Dardis, Rachel. "Predicting

Product Performance by Price." Textile Chemist and Colorist 2 (May 1970): 159-163.
Gardner, David M. "Is There a Generalized Price-Quality Relationship?" Journal of Marketing Research 8 (May 1971): 241-243.
Gordon, Leland J., and Lee, Steward M. Economics for Consumers. 6th ed. New York: Van Nostrand Co., 1972.
Hausman, Jerry A. "Exact Consumer's Surplus and Deadweight Loss." The American Economic Review 2 (September 1981): 662-676.
Hollander, Stanley C. "Customary Prices." Business Topics 14 (Summer 1966): 45-56.
Kinsey, Jean, Roe, Terry, and Senauer, Ben. "Imperfect Information, Consumer Theory, and Allocative Error in Consumption." Univ. of Minnesota, Dept. of Agricultural and Applied Economics. Staff Paper Series (April 1980): 80-88.
Laird, Landon E. "A Model of Consumer Complaint Behavior." Consumer Satisfaction, Dissatisfaction and Complaining Behavior, Edited by R.L. Day. Bloomington, Indiana: Bureau of Business Research (1977):31-35.
Laun, Louis. "Wanted: Educated Consumers and a Consumer-Educated Industry." America's Textile Reporter 83 (February 1969): 10-11,39.
Marshall, Thomas M. "How Trademarks Serve the Consumer." American Dyestuff Reporter 56 (January 1967): 33-36.
Martin, Lee, ed. A Survey of Agricultural Economics Literature. Volume 2. Minneapolis: University of Minnesota Press, 1977.
Maynes, E. Scott. Decision-Making for Consumers, New York: MacMillan Publishing Co., Inc., 1976.
Norton, Marjorie J.T. "The Assessment of the Flammability Hazard and Its Relationship to Price for a Set of Women's Nightgowns." Ph.D. dissertation, University of Minnesota, 1980.
Oxenfeldt, Alfred R. "Consumer Knowledge: Its Measurement and Extent." Review of Economics and Statistics 32 (1950): 300-314.
Peltzman, Sam. "An Evaluation of Consumer Protection Legislation: The 1962 Drug Amendments." Journal of Political Economics 81 (September/October 1973): 1049-1089.
Phelps, Ethel L. "Benefits to the Nation's Families Through Research in Textiles and Clothing." Journal of Home Economics 36 (September 1944): 423-427.
Russo, J. Edward. "The Value of Unit Price Information." Journal of Marketing Research 14 (1977): 193-201.
Russo, J. Edward. "Consumer Satisfaction: An Outsider's View." Advances in Consumer Research 6 (1979): 453-455.
Scammon, Debra L. "Information Load and Consumers." The Journal of Consumer Research 4 (December 1977): 148-155.
Scitovsky, Tibor. Welfare and Competition. Chicago: Richard D. Irwin, Inc., 1951.
Senauer, Ben, Kinsey, Jean, and Roe, Terry. "The Cost of Inaccurate Consumer Information: The Case of the EPA Mileage Figures." Journal of Consumer Affairs 18 (Winter 1984): 193-212.
Senauer, Ben, Kinsey, Jean, and Roe, Terry. "Imperfect Mileage Information and Changing Utility; A Model and Survey Results." Journal of Consumer Affairs 20 (Winter 1986).
Sexton, Richard. "Welfare Loss from Inaccurate Information: An Economic Model with Application to Food Labels." Journal of Consumer Affairs 15 (Winter 1981): 214-231.
Simmons, Charitey. "Women's Clothes Need Sizing Up." St. Paul Dispatch, July 6, 1982, p. 11A.
Swan, John E., and Combs, Linda Jones. "Product Performance and Consumer Satisfaction: A New Concept." Journal of Marketing 40 (April 1976): 25-33.
Udell, Gerlad G. "The Consumer's Right to Consumer Education: A Rejoiner." Journal of Consumer Affairs 8 (Summer 1974): 86-92.
Urguhart, A.R. "Performance Priorities of Textiles for Garment Manufacturers." Textile Institute and Industry 3 (1965): 5-7.
Willig, Robert. "Consumer's Surplus: A Rigorous Cookbook." Technical Report No. 98. Stanford, CA: Stanford University, Institute for Mathematical Studies in the Social Sciences, (May 1973).