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Understanding Informational Regulation

Informational Approaches to Regulation By Wesley A. Magat and W. Kip Viscusi. Cambridge, MA: MIT Press, 1992, 274 pages, \$32.50

Reviewed by Jean C. Buzby

The U.S. Government's increasing involvement with informational provision programs is geared toward helping consumers make decisions on risky products and activities. Some of these programs have successfully helped reduce consumption of risky products (e.g., saccharin-based drinks, tobacco) while others have had little impact in modifying economic behavior (e.g., mandatory seat-belt campaigns). Wide variations in program effectiveness raise questions about risk communication and invite new design strategies for informational programs. The new food labels, mandatory after May 8, 1994, are the latest informational programs relating to agriculture.

Accurately expressing risk in informational programs is difficult and may be the largest hurdle to successful implementation. Risk-based literature in disciplines such as decision sciences, economics, marketing, and psychology recognize that consumers have trouble understanding risk concepts and incorporating risk into decisionmaking. Magat and Viscusi chisel away at the unknowns surrounding risk by setting up experiments that control the amount and type of risk information conveyed in different formats. They uncover striking variation in consumer behavior in response to different risk information and make inroads in understanding how risk communication, altruism, and demographic variables help explain this variability. Most importantly, the findings provide a valuable foundation for effectively communicating risk and other information, and will facilitate future work on modeling consumer behavior. This book is the 19th in the Regulation of Economic Activity series.

Private sector and government readers involved in designing, implementing, and evaluating informational labels will benefit most from the book. Survey practitioners who implement risk-based or information-based surveys will benefit from the detailed descriptions of the survey methods and from the sample surveys provided in the Appendixes. The book's extensive survey details document their findings in a compelling manner.

However, lay readers may prefer to skip the technical sections to find the nuggets of insight on consumer decision making and risk perception.

Focusing on hazard warnings (labeling for carcinogens in California food, home chemical use of a toilet bowl cleaner and pesticide) and benefit-cost reports (home energy efficiency ratings), three case studies depict how consumers respond to risk and other information. The hazard warning studies observed how different individuals notice, recall, and intend to act upon hazard warnings. The home energy efficiency study flooded participants with benefit and cost information on items such as insulation, attic ventilation, and replacement furnaces to analyze responses from complicated nonrisk decisions.

The first study showed participants hazard-warnings labels for either a toilet bowl cleaner or an outdoor insect spray to determine how different labels affect precautionary behavior and consumers' valuations for injuries that would be prevented. The labeled chemical containers were similar to their commercially available counterparts. Some labels used the Environmental Protection Agency's (EPA) current hazard warnings while others reflected a series of incremental redesign changes. Participants were asked to read the labels and then answer questions on demographics, purchasing intentions, and their willingness to pay for a safer product.

One portion of the survey focused on the consumers' valuation of reducing acute morbidity losses from four minor hazards, child poisoning, eyeburns, inhalation, and skin poisoning. Each participant was given a description of two of the four hazards, depending on which chemical they had been given and whether they had children under the age of five. The mean value placed on a statistical injury reduction from the insecticide ranged from \$1,233 to \$2,860 while the value for the toilet bowl cleaner ranged from \$612 to \$1,010. For both products, participants valued child poisoning injuries higher than the adult injuries (i.e., parental altruism).

Magat and Viscusi addressed the issue of private valuation of risk versus social valuation of risk. Altruism to other members of the same state was greater than private risk valuations and altruism to out-of-state people. The authors speculate that this limit on altruism may reflect closer familial ties within a state and a willingness to pay for

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altruism that diminishes with the level of total risk reduction expenditures

Magat and Viscusi found that consumers have a positive yet diminishing valuation for increasing levels of risk reduction with the exception of the point where the risk is completely eliminated (i.e., zero risk). For the complete elimination of risks, people will pay extremely large "certainty" premiums relative to the premiums they would pay for other risk reductions of equal magnitude. Consumers have a better understanding of the meaning of "zero risk" than other risk levels and this certainty reduces anxiety and other decision-making costs.

Respondents were asked to value risk increases and decreases. Many would not accept any risk increase, even if the product was discounted. The authors suggest, consumers may perceive risk increases and decreases of comparable magnitudes differently.

Magat and Viscusi use a memory recall technique that prompts participants to mention everything they can remember about the label (i.e., open-ended). While difficult to code and interpret, the authors feel the insights gleaned are superior. They found this technique assesses the label information absorbed by the participant and determines the prominence, ordering, and linkages of this information in the participant's memory. Assumptions are that greater recall about the products' risk and the "do's" and "don'ts" when handling the product leads to greater precautionary behavior and that participants do not follow all the averting behavior they remember. Magat and Viscusi use the memory recall technique as a refined experiment to test the impact of "information overload" which is a phenomena where too much information reduces the amount that people remember. Results revealed that although hazard warnings substantially affect precautionary intentions, too much information decreased the effectiveness of hazard warnings.

The other hazard warning study examined the labeling requirements of carcinogenic food products mandated by California's Proposition 65. The objectives were to observe how the warnings affected consumers' willingness to pay for the product and to determine how accurately the risk information was expressed to consumers. Consumers' interpretations of the risks tended to overstate actual risks.

The energy audit study provided consumers with cost and benefit information about available energy conservation investments for their homes

and evaluated whether consumers made better energy choices. The authors consider budget constraints because some renters and low-income homeowners did not have a sufficient cash flow to make energy saving investments. Again, the structure and format of the information influenced the program's effectiveness.

The book concludes with guidelines for selecting among the different types of informational provision instruments (e.g., warning labels, benefit-cost reports) for the greatest impact on consumer response. Magat and Viscusi's belief that careful design and implementation are essential for success is displayed by their attention to specific nuances such as the arrangement of information and print, size on the labels. Designing and implementing a successful informational program is not a trivial endeavor and they warn against simply using a successful program as a model for all circumstances.

Magat and Viscusi also establish guidelines for evaluating informational regulations. The guidelines incorporate consumers' limitations about risk processing and quantity of information that they can absorb.

Informational Approaches to Regulation provides a synthesis of existing literature on informational regulations while making several important contributions to the design and evaluation of such regulations. Providing this strong foundation invites future work on modeling consumer behavior. I recommend the book to those working in the area of informational regulations and to those curious about consumers' reactions to risk.

The book features **Hazardous Chemical Product Labeling: Methodology**—"Methodology for the Consumer Surveys," **Hazardous Chemical Product Labeling: Risk Valuation**—"Risk Valuations and the Rationality of Consumer Behavior" with Joel Huber, "Altruistic and Private Components of Risk Valuation" with Anne Forrest, **Hazardous Chemical Product Labeling: Cognitive Processes and Behavior**—"Consumer Responses to Risk Information" with Joel Huber, "Effects of the Format of Labels on Consumer Responses to Labels" with Joel Huber, "The Correspondence between Actual and Experimental Behavior," **Two Studies of Other Applications of Informational Regulation**—"Home Energy Audits" with Peter F. Brucato, Jr., and John W. Payne, "Predicting the Effects of Food Cancer Risk Warnings on Consumers," "Implications for Information Provision Policies." Twelve appendixes supply added information and examples of the surveys.