The Economics of Reducing Health Risk from Food

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10. Differences Between Retailer and Consumer Concerns About Seafood Safety: Evidence From Survey Data

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Per capita seafood consumption in the United States increased steadily from 10.3 pounds in 1960 to 16.1 pounds in 1987 but has been lower than 16 pounds since 1988 (National Marine Fisheries Service 1993). Such a fluctuation in per capita seafood consumption in the past several years seems inconsistent with the general expectation that seafood consumption would increase steadily because of its health benefits (Gall and O'Dierno 1995, Jacobson et al. 1991). Identification and assessment of causes for the fluctuation in seafood consumption are of great importance for the U.S. seafood industry which is currently faced with a host of challenging problems such as strong competition from less expensive imports. In 1993 more than one half of all seafood consumed in the United States was imported and such imports contributed $2.7 billion to the U.S. trade deficit (National Marine Fisheries Service 1993).

Previous studies have suggested that increasing consumer awareness about the safety of seafood might have limited both the consumption frequency and level of seafood for many consumers (e.g., Jacobson et al. 1991, Lin et al. 1991, Lin and Milon 1995). Seafood safety has emerged as a major public concern and a challenge for the seafood industry and policymakers in the United States. Although per capita consumption of seafood is much less than that of red meats and poultry, seafood has been identified as a major source of many health hazards caused by unsafe meats. For example, 56 percent of the food-poisoning outbreaks linked to meat from 1983 to 1987 were due to seafood although seafood comprised only 8 percent of the total meat consumed during the period (Jacobson et al. 1991). A recent consumer survey conducted by the Department of Food and Resource Economics at the University of Delaware shows that about 50 percent of consumers in the Northeastern region are very doubtful or somewhat doubtful about the safety of seafood sold in the market (Gempesaw et al. 1995). Major seafood safety issues include unsafe microorganisms, filth and improper cleaning, and chemicals in processing operations (Payson 1994).

As buyers from producers and sellers to consumers, seafood retailers are important players in the seafood industry. But their concerns about food safety issues and preferences toward major attributes of seafood products have not been well investigated since most seafood safety studies have focused mainly on consumers (e.g., Lin et al. 1991, Lin and Milon 1995, Gempesaw et al. 1995). One possible explanation for the exclusion of retailers in seafood safety studies is that information on consumer preferences is assumed to be transmitted efficiently and quickly to producers through retailers. Such an assumption needs to be tested because consumers and retailers are generally faced with different decision problems as well as economic restrictions. This study contributes to the food safety literature by examining the differences between consumer and retailer concerns about seafood safety using crosssectional data from consumer and retailer surveys conducted in the Northeast and Mid-Atlantic regions. Furthermore, retailer valuation of a government program for seafood inspection and grading and willingness to pay for the service are also investigated using retailer survey data. The following sections describe the consumer and retailer survey, analyze the differences between consumer and retailer concerns about seafood safety issues, and summarize major findings and their implications.

Data Sources

Data used in our analysis are directly from consumer and retailer surveys conducted by the Department of Food and Resource Economics at the University of Delaware from 1993 to 1994. The consumer survey was conducted to gather market information regarding Northeastern consumer decisions to purchase finfish products (fresh hybrid striped bass, trout, and salmon) and shellfish products (clams, mussels, and oysters) and to assess consumer perceptions about the safety of shellfish and finfish products. The survey was mailed to 5000 households in the Northeastern region and 1504 responded with complete surveys, representing roughly a 30 percent response rate. Of the 1504 respondents, 37 percent were female and 97 percent indicated that there was at least one seafood consumer in their households.

The retailer survey was designed to examine finfish retailers' concerns about selected seafood safety issues and preferences toward major attributes of finfish products (tilapia, Atlantic salmon, rainbow trout, and catfish) in the Mid-Atlantic region. According to the listing of seafood retailers in the Mid-Atlantic region provided by a marketing company, a letter with the intent of sorting out only finfish retailers was sent to all the seafood retailers explaining our research objectives and requesting their participation in the survey. Responses were received from 86 finfish retailers and 56 of them actually participated in the survey. A major reason for the low response rate was that about half of the retailers on the original list did not purchase finfish and some others had gone out of business. A face-to-face interview technique was used to collect data from September 1993 to September 1994. Of the 56 finfish retailers, 72.5 percent were corporations, 17.6 percent were sole proprietorships, and 9.9 percent had other business structures such as a partnership; 28 percent were from Maryland, 20 percent from Delaware, 16 percent from Pennsylvania, and 36 percent from other Mid-Atlantic states; 79 percent expanded their fish purchases over the past 5 years; and most indicated freshness as the key factor for their purchases.

Differences Between Retailer and Consumer Concerns About Seafood Safety

As a major objective of the consumer and retailer surveys, we analyzed consumer and retailer preferences for major fish attributes, including safety attributes of selected fish species, using alternative econometric models such as conjoint preference and logit models (Gempesaw et al. 1995, Halbrendt et al. 1995). This chapter examines the differences between consumer and retailer concerns about some seafood safety issues. Consumer and retailer responses to selected questions and statements designed to measure their concerns about seafood safety are compared in several figures.

Figures 10.1 and 10.2 show consumer and retailer responses to a statement about the primary cause of unsafe fish. Ninety-six percent of consumers strongly agree or somewhat agree that improper handling and storage in the marketplace are a primary cause of unsafe fish, whereas 63 percent of finfish retailers strongly agree or somewhat agree that improper handling and storage after purchase by the consumer are a primary cause of unsafe fish. These results suggest that seafood retailers and consumers are blaming each other for improper handling and storage as a major cause of unsafe fish. As a possible

FIGURE 10.1 Retailer Response to the Statement That Improper Handling and Storage After Purchase by the Consumer Are a Primary Cause of Unsafe Fish

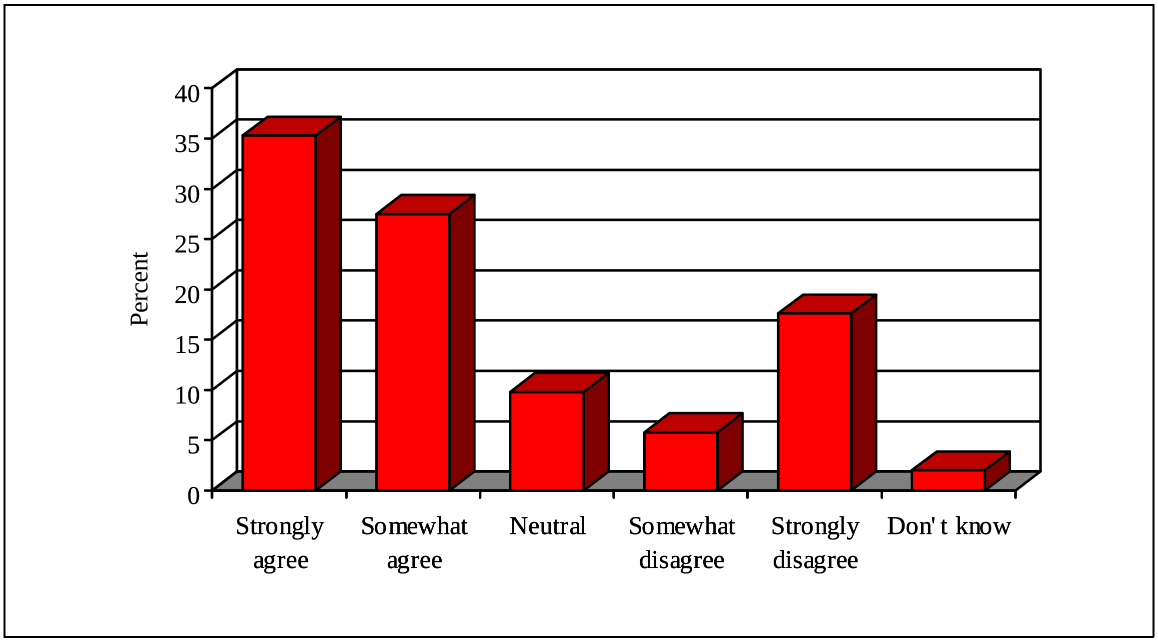
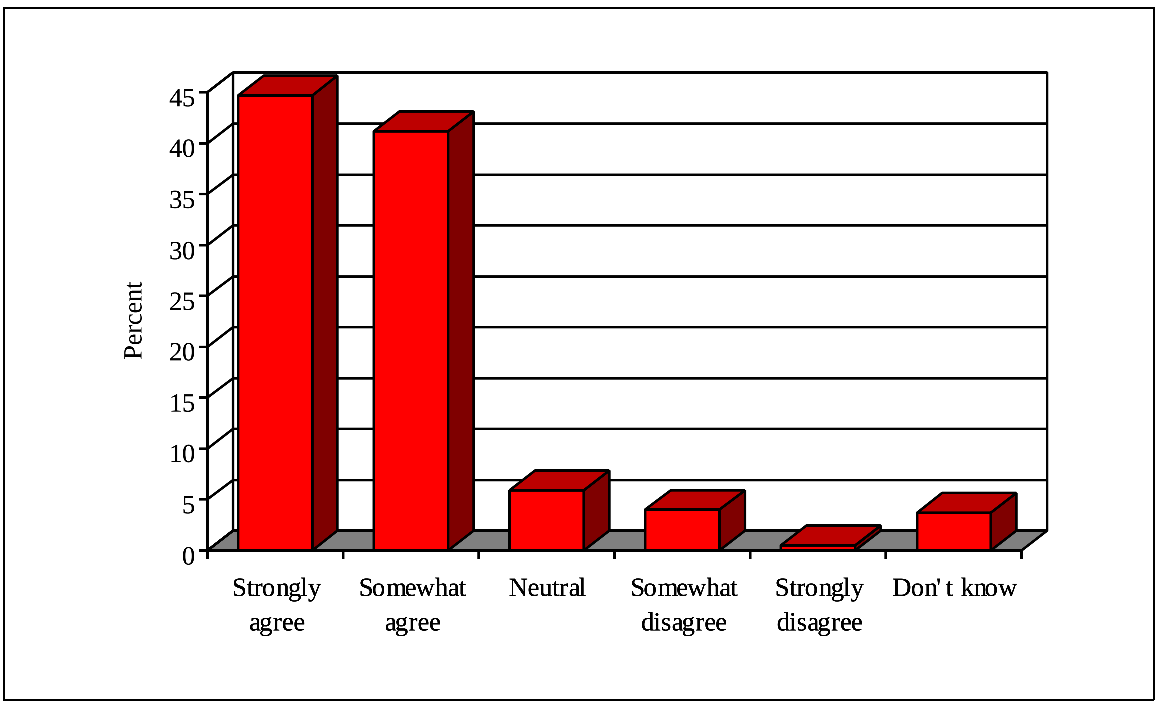


FIGURE 10.2 Consumer Response to the Statement That Improper Handling and Storage in the Marketplace Are a Primary Cause of Unsafe Fish



consequence of such a significant difference between consumer and retailer concerns about the cause of unsafe fish, both consumers and retailers may expect each other to be responsible for improving the safety of seafood.

Figures 10.3 and 10.4 present the results of consumer and retailer responses to two questions regarding the acknowledgement of harvesting date and location. Figure 10.3 shows that more than 80 percent of consumers and retailers are interested in knowing, at the time of purchase, when the fish were harvested. Such a strong interest in the harvesting date for both consumers and retailers may reflect preferences for fresh fish and perceptions that there is a correlation between freshness and the harvest date.

Figure 10.4 indicates that more than 55 percent of consumers and about 75 percent of retailers want to know where the fish was harvested when they purchase fish. Both consumers and retailers may have a perception linking fish quality and safety with the location where it was harvested.

Figures 10.5 and 10.6 present the results of two questions regarding consumer and retailer perceptions about farm-raised versus wild-harvested fish. Figure 10.5 shows that more than one-half of the surveyed consumers and retailers strongly agree or somewhat agree that water pollution is more likely to create a problem for wild-harvested than farm-raised fish. Figure 10.6 presents the results of consumer and retailer responses to the statement that farm-raised fish are safer than wild-harvested fish. About one-half of the consumers and 60 percent of retailers strongly agree or somewhat agree with the statement. Retailer and consumer responses are quite similar except that a relatively larger proportion of consumers (24 percent) do not know whether farm-raised fish are safer than wild- harvested fish. Aquaculture has emerged as the fastest growing agricultural industry in the U.S. in recent years (USDA). The positive perception of both retailers and consumers about the safety of aquaculture (farm-raised) products may be a key factor that has contributed to the rapid growth of the aquaculture industry.

Figures 10.7 and 10.8 show the results of retailer responses to some questions regarding a government program for seafood grading and inspection. As shown in Figure 10.7, a majority of retailers believe that such a program would increase consumer confidence in seafood safety and retail sales. Figure 10.8 suggests that about 70 percent of retailers would support the program but only 30 percent of them are willing to pay for the service (5 cents or more per pound). As a result of the growing consumer awareness about the safety of seafood, a program instituted by the USDA or other government agency for the grading and inspection of seafood, similar to those for poultry and pork, has been proposed by U.S. policymakers. Results from our retailer survey indicate that most retailers would support the program because it is expected to increase consumer confidence and their sales, but only a small proportion of retailers are willing to pay for the program.

Summary and Conclusions

This study examines the differences between retailer and consumer concerns about some important seafood safety issues using data from consumer and retailer surveys conducted in the Northeastern and Mid-Atlantic regions. Results suggest several interesting conclusions: 1) both consumers and retailers have shown great concern about seafood safety, but their responses are significantly different regarding many issues such as the primary cause of unsafe fish; 2) about 50 percent of consumers are very doubtful or somewhat doubtful about the safety of finfish sold in the U.S.; 3) about 70 percent of the surveyed retailers would support a government program for the grading and inspection of seafood but only 30 percent of them are willing to pay for the service; 4) freshness and price are the key factors affecting both retailer and consumer purchasing decisions about seafood; 5) both retailers and consumers have shown significant preferences for farm-raised over wild-harvested fish due to safety concerns and such preferences may be a source of continuing growth for the aquaculture industry; 6) seafood labeling such

FIGURE 10.3 Consumer and Retailer Responses to the Statement That It Is Important to Indicate the Date When the Fish Was Harvested

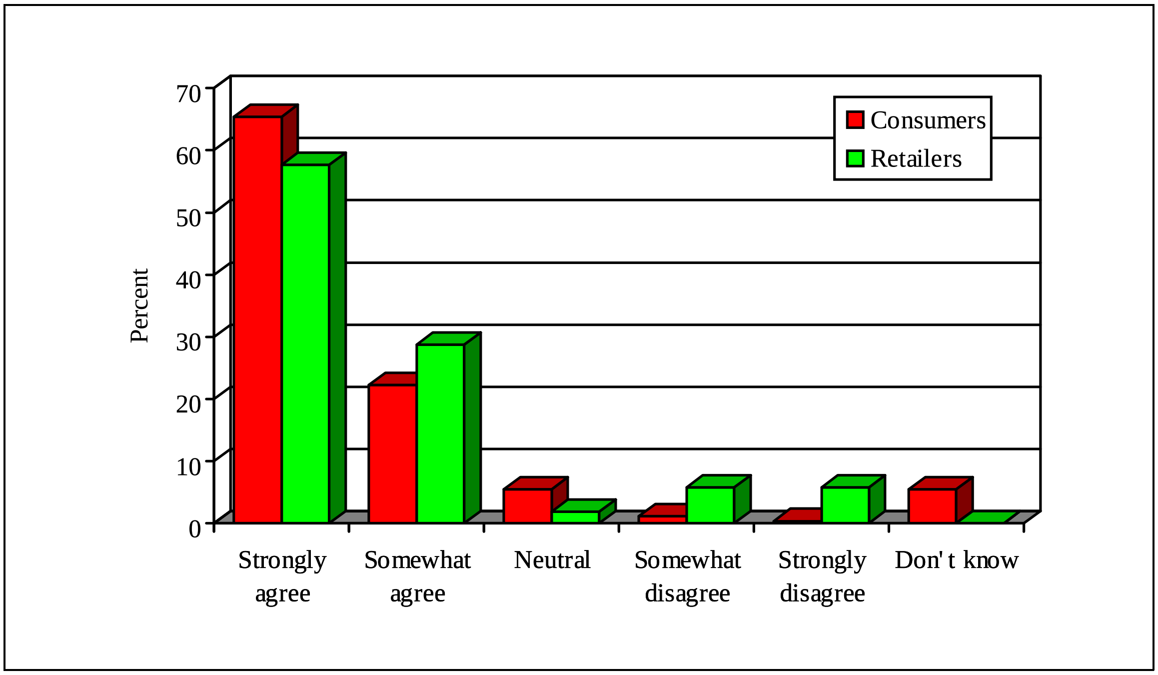


FIGURE 10.4 Consumer and Retailer Responses to the Statement That It Is Important to Know Where the Fish Was Harvested

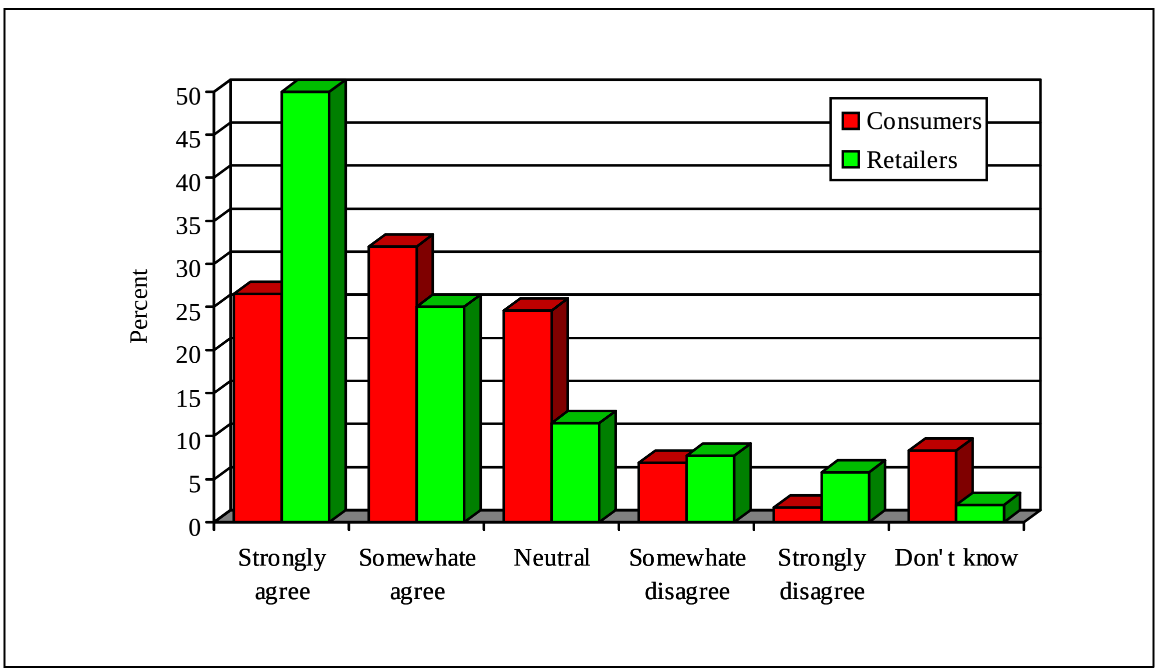


FIGURE 10.5 Consumer and Retailer Responses to the Statement That Water Pollution Is More Likely to Create a Problem for Wild-Harvested Than for Farm-Raised Fish

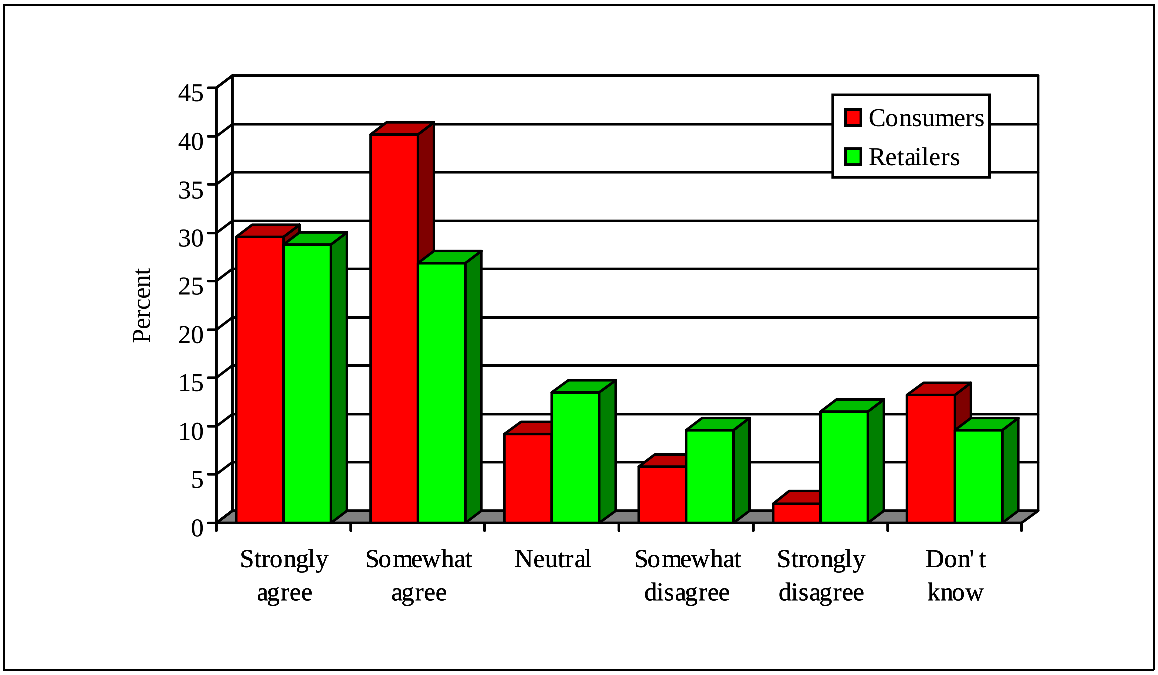


FIGURE 10.6 Consumer and Retailer Responses to the Statement That Farm-Raised Fish Are Safer Than Wild-Harvested Fish

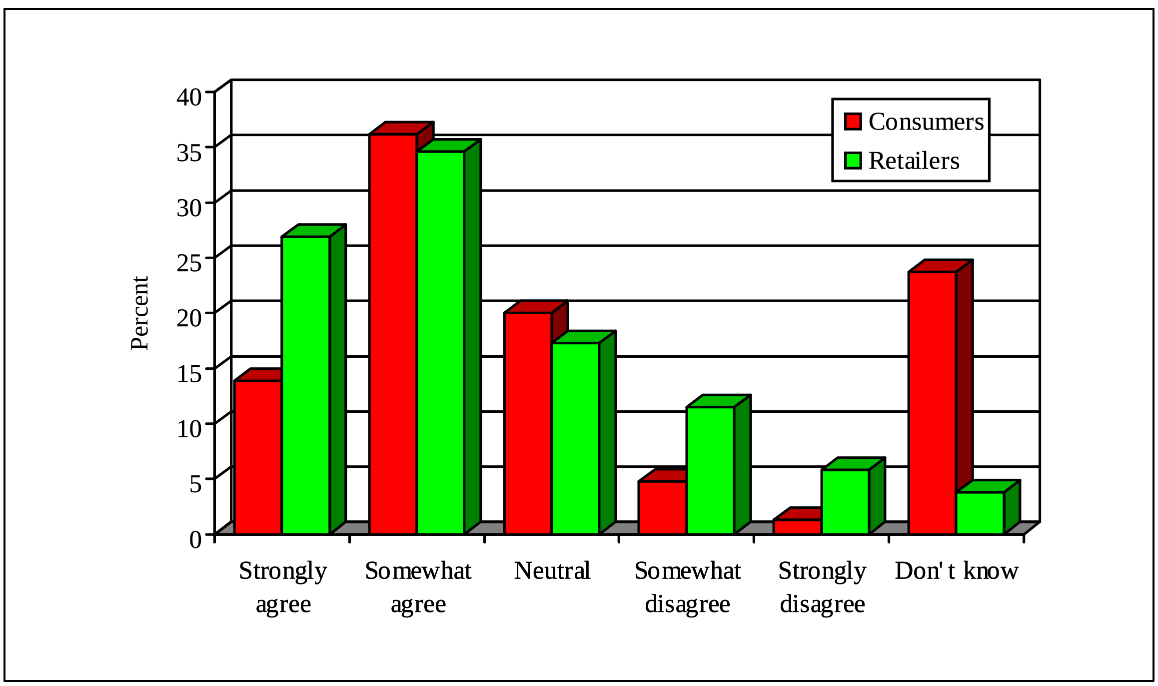


FIGURE 10.7 Retailer Valuation of a Government Program for Seafood Grading and Inspection

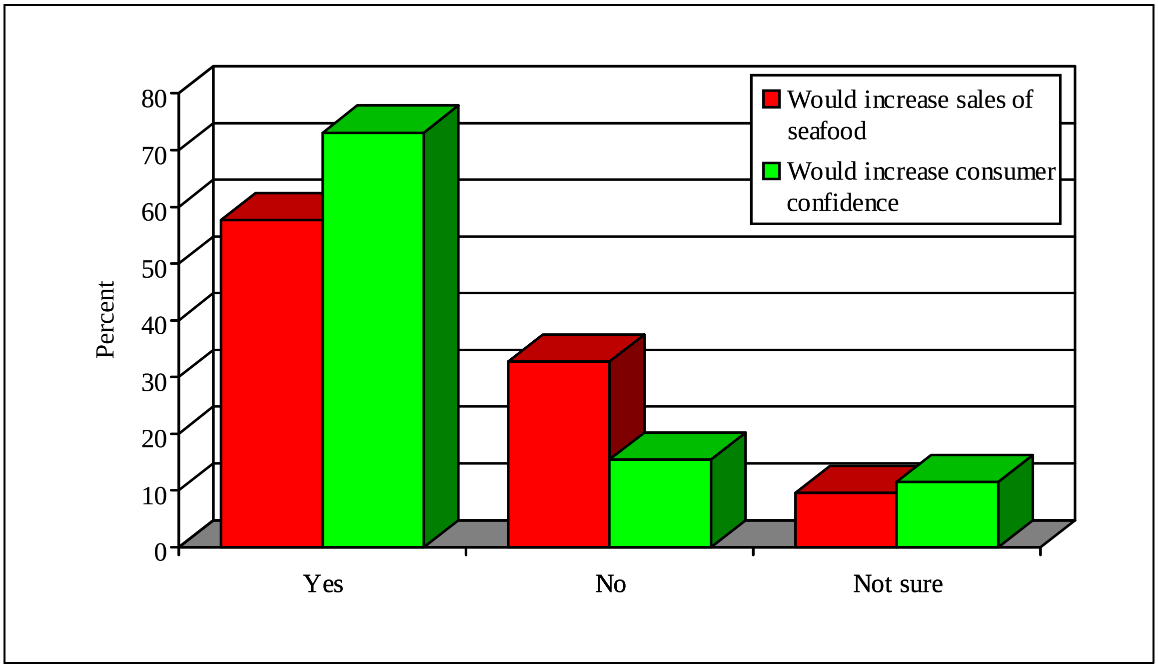
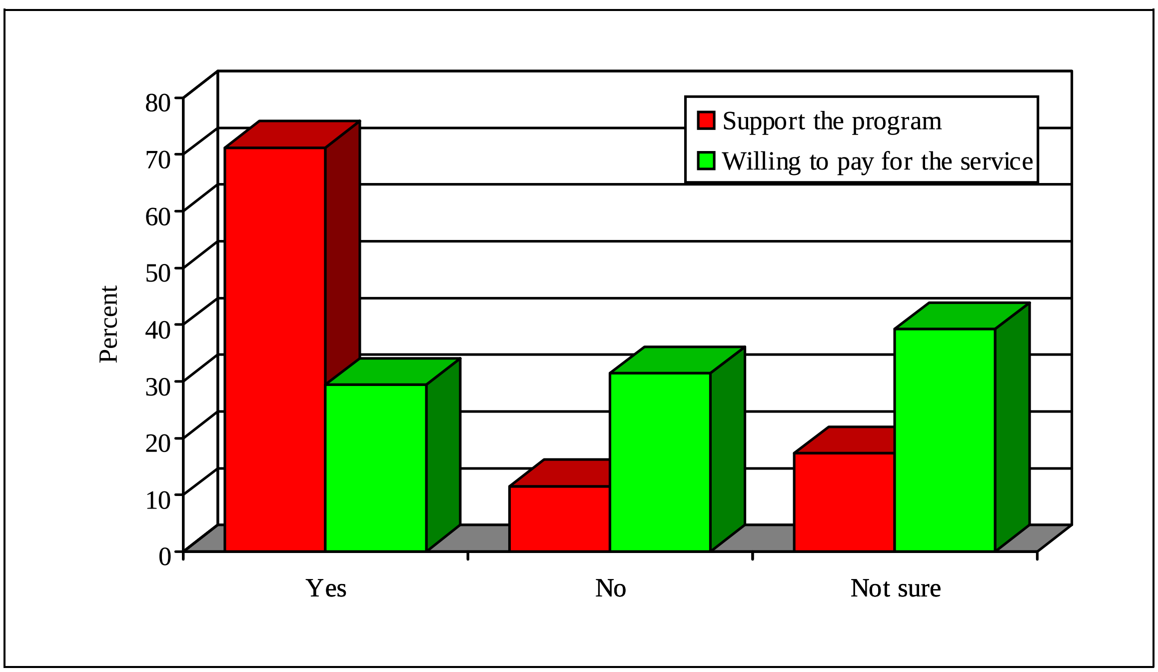


FIGURE 10.8 Retailer Concerns About a Government Program for Seafood Grading and Inspection and Willingness to Pay for the Service



as where and when the fish were harvested may increase consumer and retailer confidence in the safety of seafood and therefore increase purchases; and 7) educational and promotional programs are needed for both consumers and retailers to promote seafood consumption.

Note

[1]Qingbin Wang is Research Assistant Professor and Catherine Halbrendt is Professor in the Department of Community Development and Applied Economics at the University of Vermont, and Nieves Caron is a graduate student in the Department of Food and Resource Economics at the University of Delaware. The authors wish to thank Valerie Mamara for her editorial assistance and the Northeast Regional Aquaculture Center for its funding support of this study. This research was conducted while Halbrendt and Wang were employees of the University of Delaware.

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