

Palm, Risa I. and Michael E. Hodgson. *Natural Hazards in Puerto Rico: Attitudes, Experience and Behavior of Homeowners*. Boulder, Colorado: Program on Environment and Behavior, Institute of Behavioral Science, Monograph #55, 1993. 131 pp.

This monograph is a welcome applied social research study in the area of natural hazards, a phenomenon that worries Puerto Ricans from June to November during the rainy and hurricane season. The authors compare their results with findings obtained through similar studies in California.

In the first two chapters, the authors present previous studies done in California and Puerto Rico plus five guiding hypotheses as well as an overview of the political, economic and geophysical characteristics of Puerto Rico. Palm and Hodgson make the point that Puerto Rican homeowners with a mortgage do not have the option to buy earthquake hazard insurance since they are required to do so by lenders. They make no payment separately from the mortgage payment. This is unlike most California residents.

The methodology of the study is presented in chapter three. The technique of data collection was a fourteen-page questionnaire mailed to homeowners following the "total design method" of Don A. Dillman. This method increases response rate by maximizing rewards, minimizing costs and establishing trust for the potential respondent. In this case 1,334 questionnaires were mailed and 795 were returned for a final response rate of 75.1 percent. This percentage is well above the 40 percent predicted by the researchers. In a culture perceived as highly oral and greatly valuing interpersonal relations, the 75.1 percent is, no doubt, a good response rate. Homeowners, however, are not representative of the whole population.

The sample of homeowners was selected from six "municipios" that varied in the degree to which Hurricane Hugo affected them in 1989. Fajardo and Vieques represented the "municipios" most highly affected by Hugo; Bayamón and Caguas were mildly affected, while Mayagüez and San Germán were the least affected.

The monograph deals mainly with earthquakes and hurricanes.

According to the study, "More than three-fourths of the respondents in Vieques and Fajardo experienced some damage to their homes, whereas less than five percent on the eastern portion of the island experienced damage." Regarding earthquakes, virtually no respondent was a survivor of the last earthquake in Puerto Rico which occurred in 1918.

Chapter four presents findings regarding mitigation measures such as insurance, evacuation plans, food and water storage, and structural reinforcement. For the sample studied, 66 percent of the homeowners carried a mortgage on their homes. In Puerto Rico, unlike California, all homeowners with a federally-insured mortgage are required to have earthquake and windstorm insurance. However, only 73 percent of homeowners with insurance were aware that they were covered. On the other hand, 27 percent of the homeowners stated they had taken mitigation measures other than insurance for future damage from hurricanes while only two percent of the sample indicated that they took measures to protect their homes against future earthquakes. This two percent makes the authors worry that if a major earthquake does occur a large number of homeless and economically unprotected families will result since most homes in Puerto Rico are not resistant to shaking or ground failures.

Results on the attitude of homeowners toward natural hazards appears in chapter five. It is interesting that respondents expressed greater concern for damaging earthquakes than hurricanes. This chapter also deals with floods, examining the relationship between geographic knowledge of home location with respect to a flood zone, insurance subscription and mortgage status. It was found that knowledge of flood zone location does not influence insurance purchase; however, mortgage status does influence the decision to purchase insurance.

Chapter six associates economic and demographic variables of respondents, who have no mortgage, with their insurance decisions. Of the 795 respondents in the sample, 194 had no mortgage on their home. The analyses are done with this subsample, but as the authors state, it is significant that only 13 of these non-mortgagees had bought earthquake insurance. Making a caveat for the small sample, the authors venture a statistical analysis that leads them to conclude that perceived risk, though higher in Puerto Rico than in California, is not the primary distinguishing variable in buying insurance. Income, home value and educational level are.

Chapter 7 presents studies dealing with the communication and perception of risk and the results of the impacts of experience with

Hurricane Hugo on voluntary insurance adoption and the adoption of other mitigation measures. After reviewing several articles on risk, the authors conclude that “the relationship between communication of risk and society’s attention to that risk is fairly well understood, at least in the short run. This relationship can be manipulated by policy makers’ attempts to increase or lessen public concern for environmental hazards.” On the other hand, having being affected or having seen others affected by Hurricane Hugo was strongly associated with perceived vulnerability to future hurricane hazards and with inclination to adopt certain mitigation measures.

Chapter eight is the easiest to read since it summarizes the findings of the study. At the same time, in a reasoned way, it goes beyond the data to put the findings in the perspective of policy implications. The book ends by stating that Puerto Ricans have a high level of concern for natural hazards in their local areas. The authors express the hope “that this concern can be translated into a heightened degree of preparedness against the next major hurricane or earthquake to threaten the island.”

*Natural Hazards in Puerto Rico: Attitudes Experience, and Behavior of Homeowners* is a technical book written by scholars who offer concrete recommendations for action in facing the educational needs of the Puerto Rican population with relation to natural hazards. It summarizes recent relevant studies in the field of natural hazards, handles well the empirical data obtained and provides a resource for nonspecialists and decision makers interested in the social dimensions of natural disasters. Hopefully other social scientists will continue exploring this field in which the tools of the social sciences have so much to offer. After all, if human lives are not affected, there is no disaster.

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