

CONSUMER FINANCING AS A FACILITATING VARIABLE FOR  
THE ADOPTION OF SOLAR PRODUCTS

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Abstract

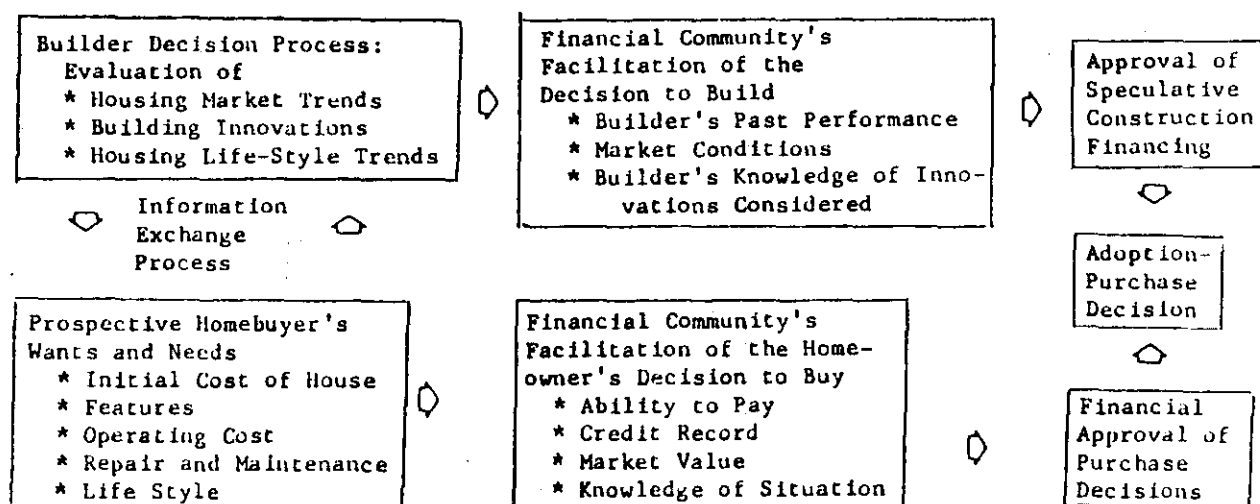
A decrease in available energy sources at acceptable societal costs has heightened the concern for speeding the adoption of products that supply or utilize alternative energy sources. Increasing the rate of product diffusion for small scale solar energy systems is an ongoing marketing problem that has been considered for durable energy related products (Pitts, 1979; Hutton and McNeil, 1979).

The Solar Decision Process

Market acceptance of solar options and housing innovations in general, usually occurs as a ratchet-type process where either the home buyer, builder, or financial institution may serve as an innovator, but is constrained by the other decision makers until they are unified in their desire for change. This self-constraining interaction slows market acceptance of housing innovations (see Figure 1).

This paper investigates the financial component of the ability to purchase construct as a media or of purchase and hence adoption of energy products.

Figure 1  
DECISION MAKER INTERACTION  
WITHIN THE SPECULATIVE HOUSING MARKET



Methodology

Within three western U.S. metro areas five focus groups were conducted using

a convenience sample of 32 financial institution administrators of upper level management ranking, including presidents, vice-presidents, and regional managers. Participants, who represented commercial banks and savings and loan institutions of independent and state-wide origin, were required to be aware of their institution's solar lending policies and instrumental in getting that policy.

### Analysis

Attitudes and opinions investigated in the focus group analyses included those related to solar lending in general, to specific lending procedures and policies, and to past solar lending activities. The specific areas of questioning included 1) the attitude of the lending institution toward financing new and retrofit solar loans, 2) impact of mortgage market on solar loans, 3) the use of payback ability, credit worthiness, and marketability as attribute for evaluating solar loans, 4) use of life cycle costing, 5) use of incentives to increase the number of solar loans.

### Summary of Focus Group Findings

Standard loan criteria are used by all lending institutions to evaluate loan applications and provide financing to the homebuyer. These loan criteria include 1) the borrower's financial ability to repay the loan, 2) the credit worthiness of the borrower, 3) the market value of the property.

The above specified mediators apply also to home improvement loans for installation of solar products. However, in this case, the cost of the improvement is first considered, followed by the borrower's financial ability. The mediating effect of credit worthiness and market value of the property is generally minimal.

Several important operational variables were reported as evaluated in the assessment of the three mediating variables. The percentage of salary allocated to payment was found to be used as a measure of financial ability to pay. Credit worthiness of the buyer was evaluated using timeliness of payments, current level of indebtedness, and a subjective evaluation of financial maturity. The market value of the property was assessed using property features that increased marketability and security such as presence of city services, conventionality of the structure, the number of rooms, type of heating system, and price of the property.

Financial institutions were found to be constrained by the requirements of the secondary mortgage markets in issuing loans. Factors critical to mortgage market acceptance of loans were essentially the same as those used to evaluate market value of the property. All of these variables may be altered for the solar equipped home.

Energy cost savings do not currently mediate the approval of home loans. This non-consideration is an inhibitor to the adoption process in that although homes with solar products cost more initially, monthly operating cost savings generally offset the high first costs in 5-7 years.

Market information about the resale value of solar equipped homes is lacking. This information gap has two effects. First, it does not allow for the effective establishment of market value for innovations in the housing market. Secondly, it does not allow for the distinction between solar and non-solar homes. This information void impacts on the builder, the lending institution, the appraiser, and the prospective homeowner, all of whom are increasingly unsure of market value, or even how to evaluate it.