

**A CASUAL MODEL OF BARRIERS AND INCENTIVES TO AFFORDABLE  
HOUSING IN SOUTHERN RURAL COMMUNITIES: AN OVERVIEW**

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**Abstract**

*The S-194 Southern Region Housing Research Project, "Barriers and Incentives to Affordable Housing," was undertaken to determine the influence of community-related variables on housing stock characteristics of small, rural communities in the South. A causal model of barriers and incentives was proposed to explain relationships and interactions among family and community variables and the housing stock of a community. Multiple regression analysis was used in testing the proposed model.*

*This manuscript presents a general overview of the conceptual foundation of the study and briefly describes research methodologies employed in conducting the study.*

**Introduction**

Over the past twelve years, the Southern Region Housing Research Technical Committee has studied housing problems and needs of low-and moderate-income households in the South. Initially, concerns focused on housing quality issues and the delineation of familial characteristics associated with physically inadequate units. More recently, escalating housing costs, the introduction of new housing technologies, and changes in housing policy and programs suggest that housing issues transcend the economic and political wherewithal of ill-housed residents and are applicable to a broader segment of society.

Changing demographics and other social and economic characteristics of the region influence both housing supply and housing conditions. The population migration from the frostbelt to the sunbelt that began during the late 1970s and early 1980s, as well as the population growth of non-metropolitan areas during the same period (Hines, Petruilis, & Daberkow, 1986), create increased demands for housing in small rural communities.

According to Lerman (1986), as new households with higher incomes move to small-town America, shifts in the local housing market often result in greater use of lower-quality units because of increases in housing costs throughout the market area. Changes in household composition and changes in social values and lifestyles (i.e., greater participation of women in the labor force) have important implications for housing as well. Specifically, the traditional single-family unit on a private lot, the predominant housing form of the region, may no longer support the lifestyle or affordability needs of the region's population.

During the early 1980s, Lesser (1982) recognized the critical need for affordable housing in the rural South where incomes and job opportunities historically lag behind those of other regions. He defines affordable housing as "...the kind that the average person can secure for 25 to 30% of his income." Housing affordability is a complex issue, and increasing involvement of the local community, as prescribed by evolving housing policies and programs, suggest a need to explore housing affordability issues within the community context.

Innovative housing technologies offer opportunities for reducing production and occupancy costs of housing units. While emerging housing policy supports the use of technological innovations in housing construction and design, there is widespread divergence in the availability and utilization of cost-effective construction types and designs throughout the region.

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Community leaders and residents, as well as housing intermediaries (lenders, realtors, building code officials, and others involved in housing production and delivery), may be influential in determining the availability and distribution of housing at the community level. Their influence was examined in this study undertaken to determine the effect of community-related variables on housing stock characteristics of small rural communities in the South.

#### **Purpose and Objectives**

The Southern Region Housing Research Technical Committee has studied housing issues in the rural South since the late 1940s. Funded by the Agricultural Experiment Stations in the participating states, the foci of projects have included design and construction issues, as well as acceptance of alternative housing. Specific objectives of the current project, S-194, were to:

1. measure housing stock characteristics including housing affordability, quality, and diversity in small rural communities in seven Southern states;
2. assess community-related barriers and incentives to the acceptance of innovations in housing design, construction, and financing; and
3. test a proposed casual model delineating interrelationships and interactions among specific household and community characteristics on the availability and utilization of the community's housing stock.

This manuscript presents a general overview of the conceptual bases of the project and describes research procedures used in developing and testing the proposed model.

#### **Review of Relevant Research**

Literature related to social structures at the community level, decision processes, the role of community leaders in community actions, and the relationship between specific community variables and housing were explored in building the theoretical framework for the study. Diffusion of innovations as presented by Rogers (1983) addresses the importance of social systems at the community level. A social system is defined by Rogers as a "set of interrelated units that are engaged in joint problem solving to accomplish a common goal (p. 24)."

Social structure exists within all social systems. The norms of a specific system (its established behavioral patterns) are operational guides for members of the system. According to Rogers (1983), these norms may be conceptualized as either traditional or modern. The traditional system lacks a favorable orientation to change, uses less-developed technology, enforces the status quo, and has little communication with outsiders or ability to empathize with outsiders. The modern system, in contrast, has a positive attitude toward change, developed technologies, more rational social relationships, and a cosmopolitan perspective that allows for interaction with outsiders. Using this frame of reference, the S-194 study explored the relevance of a community's social system to community decisions and the degree to which systems and decisions result in the presence/absence of minimally acceptable affordable housing.

As the availability of decent and affordable housing often results from circumstances or situations outside the control of families, traditional decision-making theories have particular relevance to questions of housing affordability at the community level. The central-satellite model and the chain decision process as proposed by Paolucci, Hall, and Axinn (1977) are two examples of relevant theory.

According to the Central-Satellite model, the central choice is significant, but it is linked with several minor choices that are dependent on and related to the central choice. The chain model of decision making is characterized by a straight line in which each decision in the chain is dependent on the preceding decision. When community leaders fail to seek or use opportunities to support housing programs at the community level, housing consumers are limited in opportunities to make related housing choices. Community decisions related to housing take many forms, including (1) a willingness to seek and accept available programs that build or rehabilitate units for low-income households, (2) establishment of pro-

grams or subsidies through tax breaks that encourage energy-efficient construction, resulting in reduced occupancy costs for households, and (3) allowing the introduction of new technology via building code reform. Conversely, decisions that decrease housing options to consumers may be linked to the actions or inactions of these same bodies when they fail to embrace such opportunities.

Tallman's structural-cultural theory suggests that structural arrangements, cultural beliefs, interaction variables, and personality traits are related to the effectiveness of problem-solving strategies (Klein & Hill, 1979). Collectively these studies suggest that values and attitudes within the community may act as barriers or incentives to the resolution of housing problems at the community level.

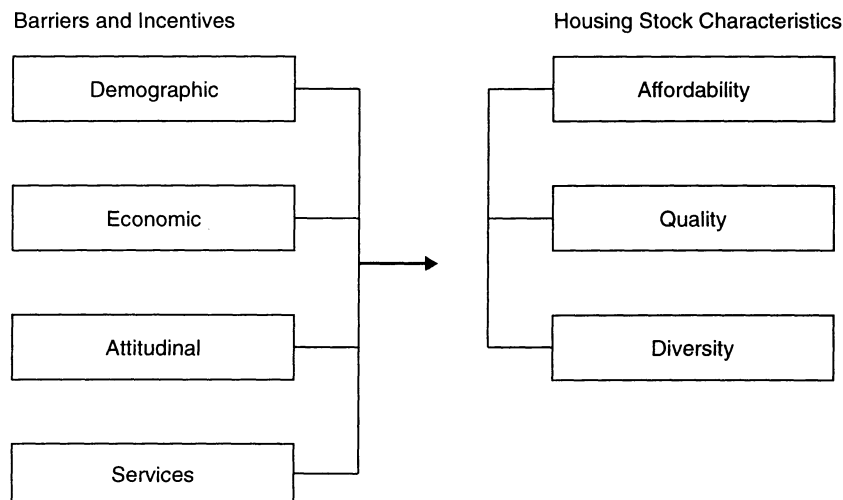
Other studies of community action support this notion. According to Shelton (1990) there is a growing body of literature on community decision-making power and social action. Based on the work of Nix (1976), she concludes that (a) social power is present and exercised in patterned ways in all social systems, including communities, (b) certain individuals play key roles in the exercise of community leadership, (c) only a very small percentage of community citizens become actively involved in the decision-making process, and (d) successful community action depends upon finding and involving key community leaders.

In addition to social systems, decision processes, and values and attitudes, the quality of life of a community and its housing have been linked to a number of other community characteristics. These include demographics (Myers, 1990), economic resources (Rainey & Rainey, 1975), and community services and programs (Brewer, McManus, Shelton, & Sweaney, 1990).

**Conceptual Framework**

Given the perspective that community structures and decision-making strategies affect housing stock characteristics, a causal model of barriers and incentives to affordable housing (Figure 1) was proposed. This model was viewed as a precursor to understanding relationships and interactions among community variables related to the housing stock characteristics of a community. For the purposes of hypothesis testing, housing stock characteristics were defined by parameters related to housing affordability, quality, and diversity. Affordability is concerned with the cost of housing in both the rental and sales markets and

Figure 1. Casual model of barriers and incentives to affordable housing.



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with the ability of residents of the community to pay these costs relative to their income. Quality of housing tends to focus on the physical aspects of the house and neighborhood. Most communities need not be concerned about affordable housing if housing quality issues are not raised. Affordability and quality must go hand in hand if low-cost, structurally sound housing is available to meet the occupancy needs of low-income residents.

Diversity in housing reflects the availability of choices to consumers. Technological innovations in housing design, materials and methods of construction, and energy alternatives provide new housing options that can reduce both initial and continuing occupancy costs to households. The availability of choices within a community provides options to residents that can alleviate housing problems. Noting the relevance of housing quality and diversity to housing affordability, the proposed model gives equal weight to the three housing stock characteristics.

Potential barriers and incentives identified include: (1) demographic characteristics of community residents; (2) economic resources available; (3) values and attitudes of housing consumers, intermediaries and leaders; and (4) community services, housing regulations, programs, and financing options.

Demographic characteristics of community residents related to housing may include household structure, age, race, and other characteristics that influence the household's ability to secure housing on the open market.

The economic base component considers the ability of rural communities to support community-based programs such as housing. The welfare of the community is an important issue requiring decisions related to the use of economic resources available to it. According to Rainey and Rainey (1975), rural local governments have special financial difficulties because their support base is comprised of small towns and sparsely settled areas. When economies of scale are considered, community service costs to rural communities exceed those of more populated areas. The economic base component of the barriers and incentives to affordable housing model considers economic resource parameters at the community level, including appraised value of real estate, user fees, and intergovernmental transfers to the community and to community residents.

The values and attitudes component included measures of general innovativeness, housing-related values of housing consumers and intermediaries, perceived barriers and incentives to affordable housing, future demand for specific housing types, and general perceptions of respondents toward community services and programs. Two additional variables, perceptions of discrimination and receptivity to specific housing programs by housing intermediaries and community leaders, were also explored.

The final model component -- community services, regulations, programs, and financing -- considers existing characteristics and/or resources available in or supported by the study community. Community services are often viewed as indicators of overall quality of life within the community as many services are essential to the maintenance of society and are also associated with the ability of community residents to obtain quality housing (Brewer et al., 1990). Services specifically related to housing include water supply and waste disposal. However, other services (i.e., educational support, police and fire protection, medical and rescue facilities, recreational and civic activities, and transportation) all contribute to the macro housing environment.

The number and type of community housing regulations provide a view of a community's response to and/or actions toward housing development. Housing regulations are needed to protect the public on matters of health and safety; however, some regulations under the control of state and local governments (such as outdated building codes, inappropriate subdivision regulations, exclusionary zoning controls, and excessive development impact fees) can needlessly drive up the cost of housing (National Housing Task Force, 1988).

Finally, housing programs and financing options for housing at the community level were included as (1) a measure of the traditional vs. innovative structure of the community and (2) as indicators of existing housing resources available to households in the community. The proposed model suggests that each model component has a direct impact on the

housing stock of a community and that the interaction or combination of specific variables may create stronger influences than when variables act independently.

**Research Procedures**

Detailed research procedures utilized in the S-194 regional project are presented in Hanna, McManus, Beamish, and Goss, (1991), as well as in numerous monographs of the Technical Committee (Beamish, McCray, Weber, & Brewer, 1989; Brewer et al., 1990; Day, Goss, Gruber, Hanna, & McCray, 1991; Gruber, Beamish, Carter, Shelton, & Weber, 1990; and Weber, Beamish, & McCray, 1989). Additionally, data reduction strategies, bivariate analyses, and regression sub-models for each of the four model components are reported in McCray and Shelton (1992). Review of these works provides a lucid view of the rigorous research methodologies employed in securing the data base on which the proposed model was tested. Only a brief overview of research procedures is presented here.

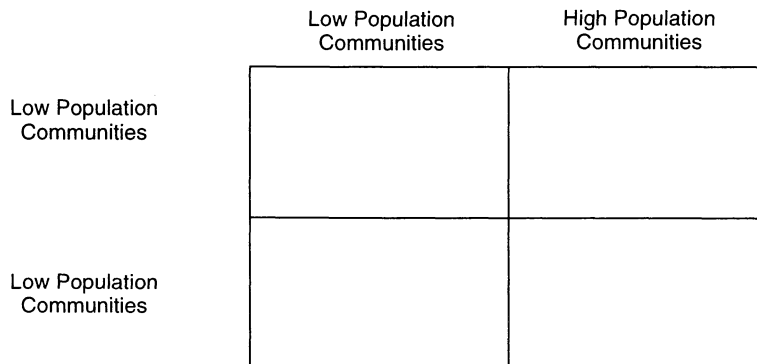
**Selection of study communities**

Initially, quantitative data were collected for 483 non-metropolitan communities with populations less than 10,000 in 1980, in seven participating states (Alabama, Arkansas, Georgia, North Carolina, Oklahoma, Tennessee, and Virginia). The population of most communities was between 2,500 and 10,000; however, smaller communities were included in the sampling pool if they were county seats and if no other community in the county had a population greater than 2,500. Using 1970 and 1980 census reports, percent change in number and type of housing units and in population between 1970 and 1980 were used to place communities in each state on a continuum from positive to negative population change. The next step in the community selection process was to assess general norms (innovative or traditional) of each community relating to its housing.

Verifying this "norm" for each eligible community was particularly difficult. Researchers first sought information from state-level agencies about housing innovations occurring at the local level. This did not yield usable results since most respondents were knowledgeable only about specific programs administered by their agency. A housing practices survey was then developed to seek input from local officials and housing intermediaries within each community regarding housing (Hanna, et al., 1991).

The housing practices questionnaire contained 36 items related to housing design, structural options, programs, regulations, and financing available in each community. The survey was mailed to six identified intermediaries (mayor/town manager, a planner, County Extension Agent, a Farmer's Home Administration Agent, a realtor, and a lender) in each

Figure 2. Population-diversity quadrants used for community selection.



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community. This approach provided data usable in developing a housing diversity scale that considered available housing programs, structural and design options, housing regulations, and available financing for housing in each community. Scale items used in developing a diversity index were analyzed for reliability and internal consistency.

Eligible communities in each state were then ranked according to respective diversity scores and associated population for 1980. A median-split for population and diversity was then used in creating a four-cell matrix that categorized all communities as either high or low on the two measures (Figure 2). Scatter diagrams were plotted, and communities with extreme scores in each quadrant were identified as potential case study communities. Further investigations were undertaken to verify community data used in developing the diversity score and to match smaller and larger communities on geographic location, industrial base, and transportation network. Four communities in each state (one from each cell of the matrix) were identified once suitable matches were found between communities with high and low diversity scores for both the high- and low-population parameters.

A case study documentation form for the 28 study communities was developed to validate housing practices data and to prepare community profiles for the selected communities. The quantitative analysis of the 28 rural communities was useful in developing a prospective view of rural housing in the states.

#### ***Data collection***

Perceptions of barriers and incentives to affordable housing were collected via systematic sampling of households and a census of housing intermediaries and leaders with mailed questionnaires. Local telephone directories were used in identifying housing intermediaries and in sampling household respondents. Community leaders were identified using a three-phase nomination process described by Powers (1965). A total of 13,977 household questionnaires were mailed and delivered in late 1987, and 5341 respondents returned usable questionnaires (response rate of 38.2%). The intermediary/leader questionnaire was mailed to 329 potential respondents, and usable forms were returned by 149 intermediaries and leaders for an overall response rate of 44%.

Responses from households, intermediaries, and community leaders were useful in determining barriers and incentives to affordable housing relating to personal innovativeness, housing values, and perceived demand for various housing forms, as well as knowledge and acceptance of newer housing forms. The questionnaires also assessed perceptions of various community characteristics and practices (i.e., services, available finances, housing regulations, general attitudes of community residents and leaders) as either barriers or incentives to affordable housing. The intermediary/leader questionnaire included additional items related to perceptions of discrimination in housing, well as personal receptivity to various housing initiatives.

Supplemental data were collected from various state agencies to complete the housing stock data and from state and other sources in creating each community's economic base measures. A telephone survey conducted with building inspectors and code and planning administrators in each of the 28 communities was completed in developing the data set on housing regulations.

#### ***Preliminary analysis of data***

Appropriate variables and measures for each component of the proposed model were created using various data reduction measures following the various phases of data collection. As noted in McCray and Shelton (1992), numerous statistical procedures (factor analysis, Pearson correlation, and multiple regression) were employed in both identifying barriers and incentives to affordable housing and assessing interrelationships and interactions among and between various barriers and incentives. Factor analysis was used primarily in developing scales from items included in the household and intermediary/leader questionnaires (Beamish et al., 1989; Brewer et al., 1990; Gruber, et al., 1990; Day et al., 1991). Pearson correlation coefficients were calculated pairing each variable with all other variables in order to identify potential problems of multi-collinearity in subsequent analyses. Following preliminary analyses, the variable sets described in Figure 3 were retained for use in testing the proposed model.

Figure 3. Description of variable sets and measures.

<b>HOUSING STOCK DEPENDENT VARIABLES</b>
<b>Affordability</b>
Percentage of families with maximum allowable incomes to qualify for a home mortgage from each state's housing finance agency (Case study)
Percentage of families who pay more than 30% of income for rent (Household questionnaire)
<b>Quality</b>
Percentage of units built before 1959 (1980 census)
Percentage of units with plumbing and crowding deficiencies (1980 census)
<b>Diversity</b>
Percentage of non-single family units (1980 census)
Housing type diversity score (Housing practices survey)
<b>MODEL COMPONENTS AND INDEPENDENT VARIABLES</b>
<b>Demographics</b>
Number of families (1980 census)
Median family income (1980 census)
Median age (1980 census)
Percentage white (1980 census)
Number of families below poverty (1980 census)
<b>Economic Base</b>
Percentage change in unemployment 1970-1980 (1970 and 1980 census)
Percentile range of school children below poverty (Case study)
District expenditure per student (Case study)
Total market value of real estate (Case study)
Turnback funds per 100 population (Case study)
<b>Values/Attitudes</b>
(Household and/or Intermediary/Leader Questionnaire)
Household perceptions of barriers and incentives -
Building regulations
Housing affordability
Lenders' attitudes
Land-use regulations
Housing production
Acceptance of housing alternatives
Household disposition toward innovativeness -
Overall innovativeness
Receptiveness to new housing ideas
Work with things and ideas
Innovative attitudes toward housing improvement
Household ranking of housing values -
Family values
Social values
Personal values
Household perceptions of -
Attitudes toward lenders
Availability of affordable housing
Community concern for housing
Adequacy of housing programs
Personal concern for housing
Adequacy of community services
Household perception demand for -
Single family housing
Mobile homes
Apartments/multi-family

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Figure 3 continued.

Intermediary perceptions of barriers and incentives -
Building regulations
Lenders' attitudes
Housing production
Housing affordability
Housing availability
Acceptance of housing types
Natural environment
Mobile homes
Intermediary disposition toward innovativeness -
Receptiveness to new housing ideas
Work with things and ideas
Innovative attitude toward housing improvement
Intermediary receptivity to support -
Programs for rental units
Loan programs for housing
Adequacy of community services
Homeownership programs
Housing programs from local budget
Zoning to support housing
Intermediary perception of demand for -
Single family housing
Mobile homes
Apartments/multi-family
Intermediary perception of discrimination against -
Elderly, handicapped, single parents, etc.
Racial and ethnic groups
<b>Housing Practices/Regulations/Community Services</b>
Summary of housing practices (Housing practices survey)
Housing finance score
Housing regulations score
Housing programs score
Community service scores (Case study)
Overall community service
Water
Garbage and sewage
Shopping and transit
Police and crime rate
Fire
Rescue service
Medical service
Education
Community club/media
Recreation
Number of housing-related regulations (regulations questionnaire)
Land use regulations

The various independent variable sets (model components) were used in developing a series of multi-variate sub-models for each housing stock dependent variable (housing affordability, quality, and diversity). Significant variables from all sub-models were then combined into an overall model of barriers and incentives.

Subsequent manuscripts in this issue (1) present procedures used in developing measures for the housing stock variables; (2) provide a general overview of barriers and incentives to housing affordability, quality, and diversity throughout the region; and (3) report research procedures and findings associated with testing the multi-variate sub-models. More detailed research procedures and results obtained when the overall model was subjected to regression analysis are presented in McCray and Shelton (1992).

The analysis provides some evidence to support a range of factors affecting the three dependent variables. Although some demographic, economic, and community factors affected the housing environments in the study communities, many of the significant variables

were related to residents' and intermediaries' values and attitudes. The direction of these findings suggests that many housing problems in communities can be impacted by addressing perceptions of various housing choices and developing options to meet a variety of needs.

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