

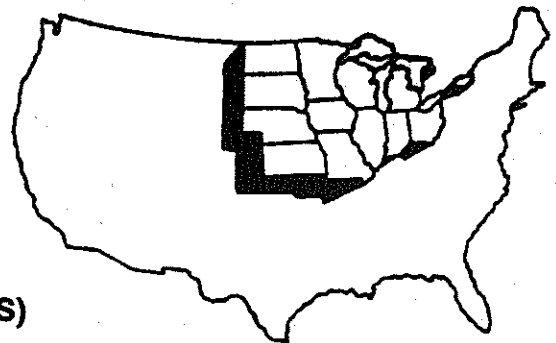
# A Decade of Housing Research in the North Central Region

A Compilation of Abstracts of Research: 1973–1983

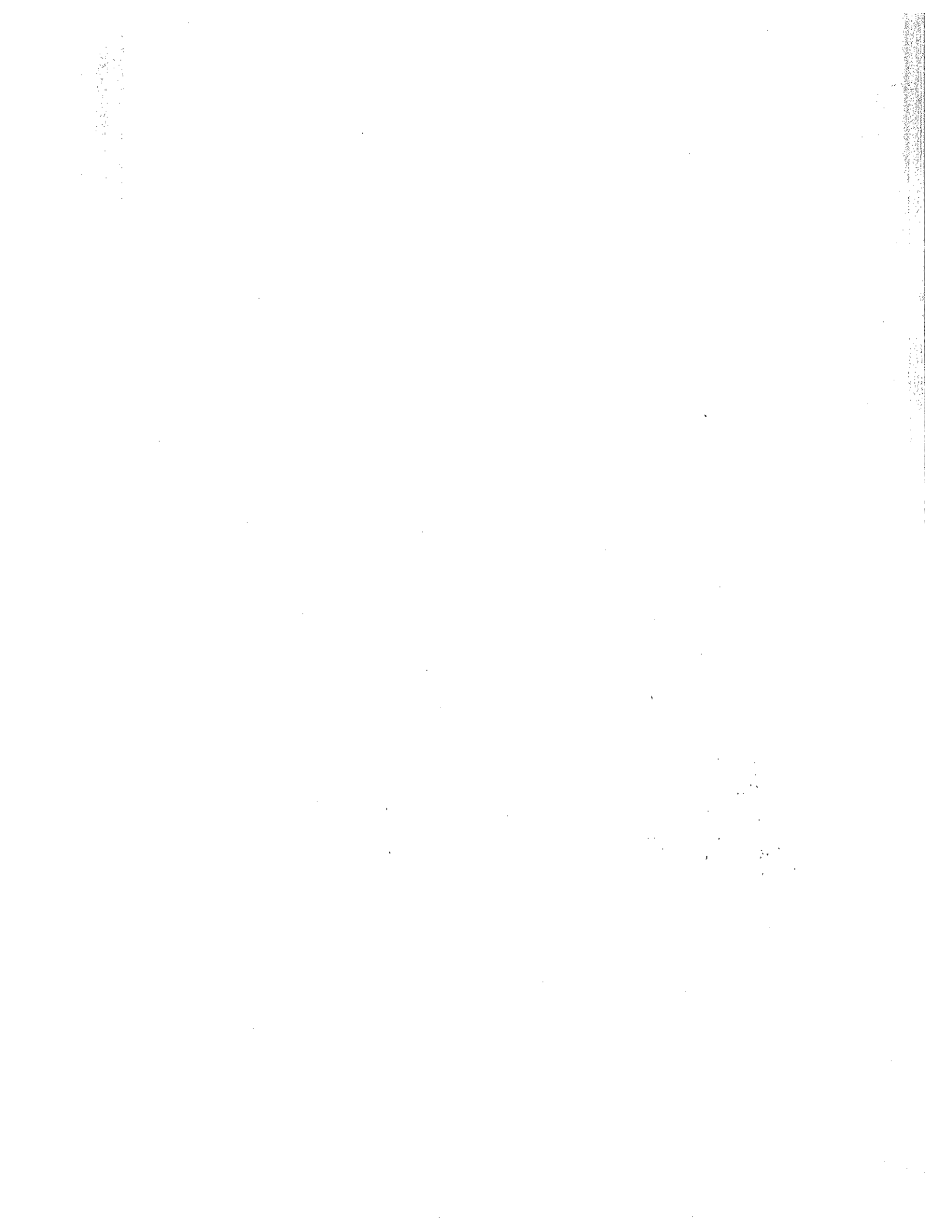
Economic, Aesthetic and Environmental Aspects of Family Housing



North Central Regional Research Publication 328



Station Bulletin 596–1990 (Item No. AD–SB–3761–S)  
Minnesota Agricultural Experiment Station  
University of Minnesota



# **A Decade of Housing Research In the North Central Region**

**A Compilation of Abstracts of Research: 1973–1983  
Economic, Aesthetic and Environmental Aspects  
of Family Housing**

**Compiled by the Members of North Central Regional  
Research Committee NCR-54**

**(Agricultural Experiment Stations of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota,  
Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin,  
and the U.S. Department of Agriculture Cooperating)**

**North Central Regional Research Publication 328**

**Station Bulletin 596-1990 (Item No. AD-SB-3761-S)  
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# ***A Decade of Research in the North Central Region: A Compilation of Abstracts of Research 1973-1983***

## ***Historical Background of NCR-54***

NCR-54 was organized in 1966 and has met annually since that year. There have been five administrative advisors, Richard H. Bohning, Ohio Agricultural Experiment Station; T. S. Hamilton, Illinois Agricultural Experiment Station; Virginia Y. Trotter, Nebraska Agricultural Experiment Station; Arlen G. Hazen, North Dakota Agricultural Experiment Station; and the current advisor Signe T. Betsinger, Minnesota Agricultural Experiment Station.

All twelve states have been represented on the committee sometime in the past. Two dozen or more different researchers have participated during the 20 years. Members of NCR-54 have been major contributors to the literature on housing in the field of home economics and related disciplines.

## ***The Current Project***

North Central Regional Research Committee Number 54, under a project entitled "Economic, Aesthetic, and Environmental Aspects of Family Housing," meets annually. The purpose of the project is to explore, investigate and report on research relevant to the title of the project. An important related goal is to maintain a dialogue among housing researchers. Many of the housing scholars in home economics and other related disciplines are isolated in multi-faceted departments with few others available locally with similar interests. Therefore, this committee serves an important function in communicating research findings and ideas among housing researchers in Land Grant institutions.

The members of the committee meet to review, discuss, and coordinate research activities. The approach to the annual meeting is an informal one that allows for extensive, free-wheeling discussion. One of the results of the NCR 54 meetings was a proposal for the formation of a technical committee (NCT-136) to draft a proposal for a major regional project. The result was the formation of NC-178 Economic, Social, Psychological and Health Consequences of the Housing Decisions of Rural Families.

The results of that project are still emerging. As a means of setting the stage for the wave of publications that will emerge from NC-178 the NCR-54 committee launched the preparation of this publication. This is the second annotated bibliography produced by the committee. The first annotated bibliography included works from 1920 through 1970. It included work done outside the region while the present publication is limited to the North Central Region. The quantity of work has accelerated greatly and a means of limitation is needed. It is hoped that the series will continue.

It is the intent of this publication to inform all interested readers of the breadth and depth of research undertaken in the North-Central Region during the decade of 1973 to 1983. Compiling this bibliography of research studies was the mission of the representatives from the states in the North-Central region.

## ***Purpose of the Compilation***

The purpose of this publication is to provide a bibliography of abstracts of works on human housing done in the North Central region during the period 1973-1983. Publications are included if they report work done in the North Central Region or work done by researchers from the North Central Region. Much of the work reported was supported by the Experiment Stations or Cooperative Extension Services of the North Central States.

## ***Coverage of Housing Research***

No attempt has been made to include all research on human housing done in the 12 states of the North Central Region. Rather, the compilation includes work done by members of the committee, their students, and their colleagues. Generally, the work reported here was done by home economists and those in related disciplines at the Land Grant Universities.

The publications are listed in alphabetical order by type of publication. The types include (1) journal articles, (2) dissertations, (3) theses, (4) books and chapters in books, and (5) other types. There are 29 journal articles listed, 25 dissertations, 90 master's theses, 2 books, 4 chapters in books, and 15 other types of publications. There is an author and key word index giving the pages on which publications by each author appear and pages on which key words from titles appear.

The topics covered by the publications listed in this compilation include a wide range of material on housing, household equipment, interior design, and the neighborhood. The housing of various categories of households is analyzed including the poor, minorities, and the elderly. Various approaches to the understanding of housing are represented including economic, sociological, psychological, and historical approaches as well as design-oriented approaches.





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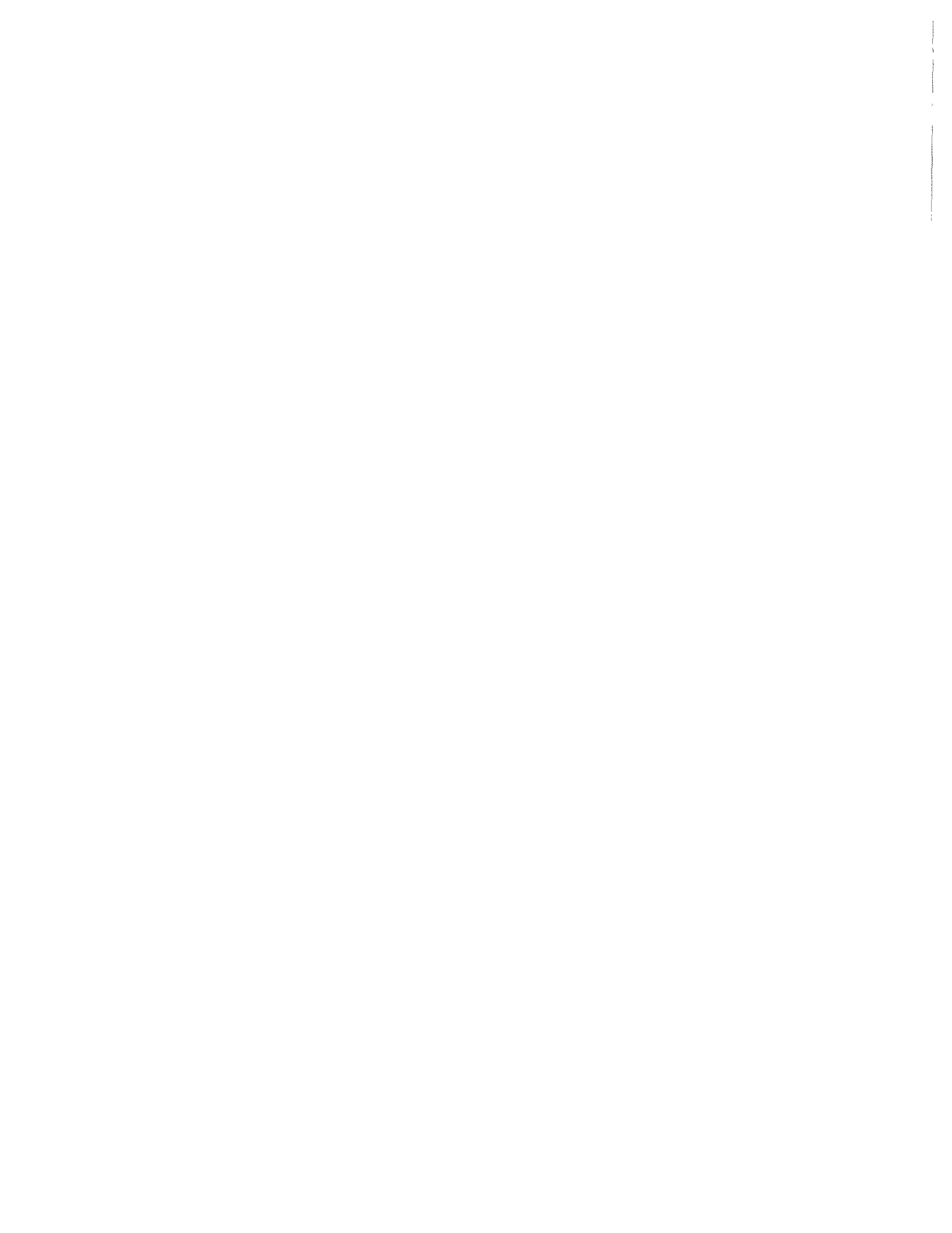
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JOURNAL ARTICLES

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Alexander, H. H. & Alexander, M. A. 1975. Heuristic implications of a coding system for a universe of the near environment. *Journal of Interior Design Education and Research*, 1(1), 3-27.

The environment sustains civilized humans in an infinitely complex world composed of a variety of substances molded into an endless number of objects, man-made and natural. Categorizing is one method that identifies and/or systematically describes a particular assemblage of substances. The purpose of this study is to obtain empirically, from a group of experts, the descriptive information necessary for the establishment of a categorical code that identifies a component of the near environment. The chair, a common object of furniture that can be found in every period and style and which most people will be forced to make a decision about sometime in their life, was chosen as that component. The coding system developed from the data collected in this study provides a quick objective method of identification of all chairs within the 540 possible categories and is applicable to other components of the near environment.

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Alexander, H. H., Alexander, M. A., & Tzeng, O. C. S. 1978. Identification of consumer behavior patterns through the analysis of variable responses. *Journal of Interior Design Education and Research*, 2(2), 55-70.

Values, the fundamental beliefs that affect interests and attitudes, have long been a well-spring for study and investigation. During the last thirty years, an increased emphasis upon the environment has stimulated behaviorists, educators, and designers to study the interaction between human behavior and the environment. It can be assumed that values play a large role in this interaction. This study explores and attempts to answer two questions: 1. Can we identify some values that the consumer feels are most important in making decisions about the near environment, more specifically, furniture? and 2. Can we demographically identify consumer behavior patterns from an analysis of the unidimensional variable responses?

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Alexander, H. H., Alexander, M. A., & Tseng, O. D. S. 1978. Designing semantic differential scales for a universe of the near environment--chairs. *Home Economics Research Journal*, 6(4), 293-304.

Individual decision making under current social and cultural constraints can be exercised most effectively within the arena of the near environment, and more specifically, the home. Using a component of the home environment, the universe of chairs, an SD measuring instrument was designed that will reveal aspects of the human-environment interface. This paper describes the method by which a set of bi-polar scales was selected for a group of consumers. Seventy subjects in three groups with different levels of formal educational experiences in art and design were asked to make free associational qualifier responses to slides of 60

representative chairs. Intergroup correlations reduced the number of 67 representative qualifiers that express the concept-domain relevant traits actually used in common communications about the chairs. Thirty bi-polar scales were obtained after opposite elicitation. These scales plus 10 Osgood American indigenous affective markers comprise the SD measuring instrument.

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Banner, M. G., Berheide, C., White, G., & Ross, F. 1983. Housing preferences in Louisville: A feminist critique of the suburban environment. *Housing and Society*, 9 (2), 95-110.

The research focuses on the housing preferences of 362 home buyers in the Louisville, KY metropolitan area and addresses three questions. First, what are the housing preferences (such as type of neighborhood, cost, distance from job and services) of home purchasers? Second, do housing preferences differ by family type (such as married couples, or single adults)? Third, what are the implications of these preferences for government officials, private builders, urban planners, and others. The findings indicate that housing preferences associated with children, wife's employment, and proximity to family and friends differ significantly.

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Brent, E., Brent, R., Franklin, E. 1979. Smallest space analysis: A method for relating empirical observations of use of space to housing design. *Home Economics Research Journal*, 8(2), 110-117.

Smallest space analysis, a statistical technique for creating a spatial representation of data, is examined to assess its usefulness for analyzing use-of-space data. Smallest space analysis is found to be a promising technique for analyzing use-of-space data, leading to direct implications for housing design. In addition, this technique is useful in analyzing a wide variety of data in other fields of home economics.

Brent, R. S. 1982. Community and institutional public social spaces. *Therapeutic Reaction Journal*, 16, 41-48.

Public social spaces may act as support systems for the elderly in that they may anchor a person's identity and provide physical and/or emotional support. Declining health has an important impact on "shrinking" the outside world and diminishing the number of community public social spaces used. However, deteriorating health may not diminish the elderly person's need to receive social, emotional, and psychological support. This paper reports the findings from two studies on non-institutionalized and institutionalized elderly and their use of public social spaces. Structured interviews, observations, key informants, photography, and available data were used for quantitative and qualitative data analyses. The findings from the study point to the need for the nursing home recreation coordinator to facilitate the continued use of public social spaces by residents within the nursing home setting.

Brent, R. S. & Ginthner, D. 1979. Designing for the elderly: Sense or common errors? *Housing and Society*, 6, 97-101.

The objective of this paper is to help identify common misconceptions of the design needs for the elderly. A questionnaire focusing on home furnishings, structural design, and the social processes related to housing for the elderly was administered to all students enrolled in design courses at one mid-western university. Neither the number of previous design courses, age of respondent, major (interior design, housing, or other), nor contact with elderly persons (relative, other, or both) accounted for the difference in total number of correct responses.

Casto, M. D., Day, S. S. & Schwab, L. O. 1977. Adjusting the environment for the elderly and the handicapped. *Journal of Home Economics*, 69(3).

For the handicapped, restrictive housing environments may seriously limit total life space. Elderly individuals may decide it is easier to stay put than to venture out into the community. These actions may result in withdrawal from active participation in daily activities. Home Economists can now assess the needs of the handicapped and the elderly.

Combs, E. R., & Tremblay, K. R., Jr. 1981. Residential solar policies: Extent of public support. *Housing and Society*, 1(2), 99-107.

Data, collected in 1981 from a random sample of 912 Nebraska households, was analyzed to discover the extent of support for six residential solar energy policies. Pearson correlation was used to assess the association between support of policies and socioeconomic characteristics. Multiple regression was used to assess the relative and cumulative explanatory power of the

socioeconomic characteristics in predicting policy support. The findings indicate support of government involvement in encouraging the wide spread use of solar energy for residential heating purposes. Such support is particularly strong for information-based programs and derives from all segments of the population.

Combs, E. R., & Madden, C. S. 1983. Compatibility of solar home heating systems with values, felt needs and past experiences of households. *Home Economics Research Journal*, March.

A state-wide survey was conducted to determine: 1. the perceived compatibility of solar systems to values, felt needs, and past experiences of households; 2. how perceptions of compatibility relate to the adoption of solar heating systems for the home and 3. how various segments of the population differ in their evaluation of the compatibility of solar systems. Analysis of variance, with the Least Significant Difference Test, was used to analyze the responses from 912 households within the general population and 105 solar home owners. The findings show that people tend to find solar systems more compatible in meeting broad societal needs than their individual housing needs. A relationship between perceptions of compatibility of solar systems to the adoption of these systems was strongly indicated. Certain segments of the population (those who are younger, highly educated, work in managerial or professional positions, and live in a household of three or more members) find solar systems more compatible than others.

Combs, E. R., & Tremblay, K. R., Jr. 1982. Cost and appearance deemed important considerations in design of solar homes. Dimensions: *Journal for Architecture and Planning*, 3(4), 10-11.

Data from a random sample of 912 Nebraska households were analyzed to understand why people are not using solar energy to heat their homes and water. Most had a favorable attitude toward the use of solar energy but few were seriously thinking about obtaining a solar system. The conclusions are that architects and planners need to design solar homes as inexpensively as possible and that the solar homes be designed to resemble the traditional single family home.

Flannery, B., Morris, E. W., Carey, S., & Eichner, M. L. 1983. Attitudinal and behavioral responses to drought-induced water rationing. *Housing and Society*, 10(1).

Water-usage data from ninety-eight households in Ames, Iowa were obtained for the years preceding, during, and succeeding a year of short water supplies. While huge reductions were made in water consumption during the drought year, an attitude survey indicates that the reductions made were a response to an emergency situation and a municipal water-rationing policy rather than to long-term attitudes toward conservation. The findings reported here closely parallel those reported in the energy literature.

Graff, C. L. 1976. Appropriation of space: A concept applied to the study of the home. *Housing Educators Journal* 3(4), 39-42.

The appropriation of space was the theme for the Third International Architectural Psychology Conference held June 21-25, 1976, in Strasbourg, France. Plenary session and seminars were addressed to the task of defining this concept and suggesting how it can be applied in the study of the built environment. I will report here some definitions and descriptions of appropriation of space, its relation to other concepts used in environmental research, and suggested dimensions for classification of spaces relevant for the study of appropriate space in the home.

Graff, C. L. 1977. Toward a social psychology of housing. *Housing Educators Journal*, 4(3), 2-6.

In the brief paper, I have attempted to introduce the rudiments of a broad conceptual framework integrating empirical findings and theories toward the development of a social psychology of housing. To illustrate how concepts from the proposed typology can be investigated and developed empirically, papers included in this issue report research on aspects of meaning (Hayward), organization and social control (Koob and Fish), and spatial distribution (Graff and Inman). Borden et al. consider the interrelationship of certain life system indicators and attitudes toward the environment. In the final paper, Miller et al. suggest the use of paradigms from two specific theories in social psychology, i.e., the drive theory of social facilitation, and learned helplessness, to attain greater precision in the analysis of problems of control within particular environments.

Graff, C. L., & Inman, M. A. 1977. Housing choice and distance moved: an ecological model. *Housing Educators Journal* 4(3), 1928.

For consideration of population shifts, intraurban compared to interurban, we propose a model based on an ecological framework of population, organization, environment and technology (a macro approach) with

temporal and spatial dimensions affecting satisfaction of needs in the household (a microsystem). Multiple regression using aggregate data from the U.S. Census for eight Standard Metropolitan Statistical Areas in the North Central Region supports the hypothesis that interurban movers settle in established areas of owner occupied housing in which an urban life system for families with children and employed females can be supported.

Graff, C. L. 1982. Employment of women, suburban and house styles. *Housing and Society*, 4:(2), pg. 111-117.

This paper suggests that modifications in house design occurring with suburbanization are among the structural conditions that accompany the employment of women. Shifts in design arising out of the expression of values through housing choices have produced differences in the "user efficiency" of houses. To consider the hypothesis that house styles differing in exterior appearance and interior organization distinguish among life systems varying in location and employment status of the wife, 8 visible features were rated. Discriminant analysis performed on a probability sample (N=102) distinguished first between features of suburban and traditional locations ( $R=.54, p<.0001$ ) and second, between houses of employed and nonemployed wives ( $R=.40, p<.02$ ).

Graff, C. L. 1976. Alienation or identification: A function of space in the home, in P. Korosec-Serfaty (ed.), *Appropriation of Space*. Brussels: NEUF (English and French editions), 291-299.

Social behaviors and resulting feelings are fostered or limited by available spaces which in the family home can be described by three overlapping dimensions (public-private, front-back and formal-informal). The hypothesis studied states that persons expressing high identification with their family home will have more spaces available than persons reporting alienation for: (1) interaction with the family; (3) activities with outsiders; and (4) both special and everyday uses (i.e., public, front, formal and informal areas). A quasi-experimental design was used in which college students responding to a survey who reported extreme feelings of alienation (n=96) were matched with respondents indicating high identification (n=96) and both groups were compared with a control group (n=160) by analysis of variance. The findings support the hypothesis with more space reported in public areas ( $p=.002$ ), front areas ( $p=.003$ ), formal areas ( $p=.05$ ) and informal areas ( $p=.02$ ) by the group expressing identification. As expected, private and back areas were not significantly related to feelings of alienation or identification.

Graff, C. L., & Inman, M. A. 1975. Chairs: Perceptions of suitability for privacy and interaction. *Housing Educators Journal*, 2(2), 16-24.

It was hypothesized that soft, supportive, and flexible chairs are perceived as comfortable and suitable for private activities. Hard, nonsupportive, and rigid chairs are not perceived as comfortable, but are appropriate for public activities. One-hundred-four students were interviewed and analysis of variance results supported the hypothesis.

Hassoun, V., & Hunt, F. E. 1980. Electric energy usage in the home: A predictive model. *Home Economics Research Journal*, 8(4), 252-20.

A predictive model was developed to assess the total direct electric energy in kilowatt hours used in household operation, based upon survey information on ownership of selected electric equipment and selected characteristics of families. The number of major appliances owned, electric water heater, household size, and hours the home manager was employed outside the home were significant.

Hinkle, R. F., & Combs, E. R. 1983. Lifestyle sacrifices and the home purchase decision. *Housing and Society*, 10(1), 1-10.

Changing conditions in the housing market have raised concerns about the consequences of home ownership for households. During the Spring of 1982, a telephone survey was used to measure the extent of specific lifestyle sacrifices reported by 152 recent home buyers in a midwest community. Data were analyzed using the Chi Square and Gamma statistics, and the analysis of variance with the Least Significant Difference Test. The findings indicate that the purchase of a home alters the lifestyle of households, particularly in types of expenditures often made with discretionary income. In general, extent of lifestyle sacrifices are greater for younger home owners, for home buyers with less income and for home buyers purchasing a first home.

Hogan, M. & Paolucci, B. 1979. Energy conservation: Family values, household practices and contextual variables. *Home Economics Research Journal*, 7(4), 210-218.

No abstract available.

Inman, M. A. 1978. Use of residential space by blue and white collar families. *Housing and Society*, 5(3), 14-19.

The objective of this study was to examine the use of the home by blue collar and white collar families to discover if use differences exist. Interviews with 100 families showed the only differences existed in the use of the living room for leisure activities.

Inman, M. A. 1978. Family social climate and attitudes toward living space in four stages of family life cycle. *Housing and Society*, 5(4), 74-76.

This study found the four stages of the life cycle to significantly differ in certain areas of their family social climate and in their attitudes toward their dwelling unit.

Inman, M. A., & Graff, C. L. 1976. Ecological theory and activity area analysis: A technique for studying residential behavior settings. *Housing Educators Journal*, 3(4), 52-61.

The purpose of this paper is to introduce a technique based on ecological theory which, if adopted by researchers working with activity data in residential settings, would make results of various studies readily comparable. Three families, all in the peak stage of family life, were studied and the results show that behavior patterns of families can be observed through the adoption of Barker's behavior setting theory which includes occurrence, duration, population, occupancy time.

Kempton, W., & Montgomery, L. 1982. Folk quantification of energy. *Energy*, 7(10), 817-827  
Michigan State University: East Lansing, MI.

Consumers use simplified measurements as a basis for residential energy decisions. We analyze their measurements of monthly consumption, changes through time, comparison of appliances, and length of pay back period. Because of systematic errors in quantification, consumers choose ineffective energy conservation actions, and under-estimate the benefits of previous actions. These errors do not result solely from lack of information because they are made even by consumers who understand technical energy measurement. To explain the persistence of a seemingly disadvantageous system, we show that consumer methods are cognitively efficient. They are easy to learn and use and are compatible with general-purpose budgeting tasks. They lead to higher energy use than would be economically optimal for either the individual or the nation.

Meeks, C. B. and Firebaugh, F. M. 1974. Home maintenance and improvement behavior of owners. *Home Economics Research Journal*, 4(2), 114-129.

No abstract available.



Morris, E. W. and Winter, M. 1975. A theory of family housing adjustment. *Journal of Marriage and the Family*, Vol. 37, pp. 79-88.

The paper presents a conceptual and theoretical framework for the study of the housing adjustment behavior of families. Families are viewed as evaluating their housing in terms of cultural norms and family norms. When their housing does not meet the norms, it tends to give rise to dissatisfaction, producing a propensity to reduce the normative deficit. Residential mobility, residential adaptation, and family adaptation are the modes of adjustment used to reduce such deficits, and are undertaken when the constraints on the behavior can be overcome.

Morris, E. W. 1976. Mobility, fertility and residential crowding. *Sociology and Social Research*, 61, 363-379.

Regression analyses predicting fertility and mobility in a sample of a metropolitan county in New York State indicate that residential mobility serves to release the negative pressure that residential crowding might exert on fertility behavior. The indication is that if increased family size were to threaten to produce crowding the most likely response is mobility rather than limitation of births.

Morris, E. W., Crull, S. R. & Winter, M. 1976. Housing norms, housing satisfaction and the propensity to move. *Journal of Marriage and the Family*, 38, pp. 309-320.

Normative housing deficits are introduced into an analysis of the propensity to move as intervening variables between socioeconomic and demographic characteristics and satisfaction. The findings support the use of residential satisfaction and normative housing deficits as predictors of the propensity to move. The results indicate that the propensity to move is a response to housing satisfaction which, in turn, is a response to discrepancies between achieved and normatively prescribed housing.

Morris, E. W. & Winter, M. 1976. Housing and occupational subcultures. *Housing Educators Journal*, 3(3), 2-16.

The purpose of the research is to test the proposition that blue collar household heads living in a small city in Iowa State have different standards and aspirations for home ownership and the single family dwelling than those with white collar occupations. The data are based on a stratified random sample of a small city in Iowa. The analysis uses on 372 households. Cross tabulations, and regression analysis were used to analyze data. The major conclusion from the study is that the differences in achieved housing in the present sample cannot be attributed to differences in norms between blue and white collar households. Rather they are due to differences in original housing conditions and

the operation of constraints in relation to conformance to the norms.

Morrison, B. M., Gladhart, P. J., Zuiches, J. A., Keith, D. K., Keefe, D., Long, B. B. 1979. Energy and families: The crisis and response. *Journal of Home Economics*, 70(5), 18-21.

Objectives: How families have responded to increased energy costs between 1974 and 1976. Method: Survey (N=216, 1974; N=263, 1976) Survey of energy providers. Analysis: Mixture of methods. Findings: A slight decrease from 1974 to 1976 for belief in the energy crisis; an increase of behaviors reflecting awareness and conservation and consumption decreased by 6.3 percent from 1974 to 1976. Implications: higher energy prices have produced a positive impact towards conservation.

Peters, C. A. & Hunt, F. E. 1977. Heat distribution and heating efficiency in selected pans on conventional and glass/ceramic surfaced electric range units. *Home Economics Research Journal*, 5(3), 176-189.

No abstract available.

Rudd, N. M. 1978. Energy use: The need for research. *Journal of Home Economics*, 70(3), 24-26.

No abstract available.

Rudd, N. M. & Longstreth, M. 1978. Strategies for energy conservation. *Journal of Home Economics*, 70(3), 40-43

No abstract available.

Schilling, G. L., Combs, E. R. & Schwab, L. O. 1982. "Housing for the Physically Disabled: The Home Builders' Perspective." *Journal of Rehabilitation*, (Sept./Oct./Nov.):25-30.

One hundred sixty-five Nebraska home builders responded to a mailed questionnaire asking their perceptions of the housing needs of physically disabled persons and their role in the provision of such housing. In general, home builders perceive a lack of adequate housing and think it best for disabled individuals to live in single family homes within the private sector. They believe that the physically disabled individual and his or her family should initiate responsibility for changing on building a home rather than government requiring the construction of such housing. They express a strong willingness to work with these individuals and desire more information to do so. Differences among groups of builders as to their attitudes toward builder involvement in the construction of homes for physically disabled persons are identified. Implications for physically disabled persons, rehabilitation staff, and policy makers are discussed.

Stoeckeler, H. S. 1977. Aesthetic quality of home interior - a useful indicator for housing satisfaction and the quality of life measures. *Journal of Interior Design*, 3(1), 53-73.

A pilot study to test the usefulness of a semantic model for collecting information about environmental perceptions and the employment of a methodology of analysis. Users' selected perceptions of their home interiors establish the relevance of a concept of aesthetic quality.

Stoeckeler, H. S. 1980. Log linear models for analyzing housing sentiments of family members in a metropolitan and a non-metropolitan community. *Home Economics Research Journal*, 9(1), 2-15.

This study identifies sentiments about housing in general and residential exterior with the objective of contributing to empirical information about housing satisfaction indicators for families. Two hundred members of husband-wife families with one or more children under 18, living in a metropolitan and a non-metropolitan Minnesota community were selected using a systematic sampling plan with clustering in the final stages. Data were obtained by interview and self-administered questionnaires. A method of discrete multivariate analysis of findings is demonstrated to show relationships of satisfaction and values and demographic, socioeconomic, and housing characteristics of families.

Stoeckeler, H. S. & Hasegawa, M. 1974. A technique for identifying values as behavioral potentials in making consumer housing decisions. *Home Economics*

*Research Journal*, 4(2), 268-280.

This paper describes a technique for measuring and interpreting individual hierarchies of values and for identifying individuals as types according to their values. The methodology can be used for identifying values as behavioral potentials in making housing and other consumer decisions.

Winter, M. & Morris, E. W. 1982. Housing conditions, satisfaction, and conventionality. An analysis of the housing of female headed households. *Housing and Society*, 9(2), pp. 70-83.

The analysis in this paper tests the differences between female-headed households and jointly headed households on conditions, preferences and norms for single-family home ownership. The data are from a sample of 1186 households drawn from small cities in north-central Iowa. Female-headed households are more likely to live in a dwelling that was neither owner-occupied nor a single-family dwelling than are jointly headed households. Preferences for ownership and structure type differ between the two household types, but reported norms for tenure and structure type are similar. Although female-headed households are less likely to own single-family dwellings than jointly headed households, their housing conditions did not reduce their housing satisfaction. Female-headed households evidently have avoided dissatisfaction by developing unconventional housing preferences.

Winter, M. & Morris, E. W. 1977. The housing we would like. *Journal of Home Economics*, 69, 7-10.

The paper analyzes several issues which include housing needs, recent housing trends, and examination of the future and the role of home economists. The authors discuss the five housing needs that are important to American families which they call space, structure type, tenure type, quality and neighborhood. The authors argue that the demand for the single family home would increase especially because of the baby boom cohort, but otherwise the demand will decline due to declining birth rate. The role of home economists according to the authors is to teach planning and thoughtful implementation of plans so that families can more readily achieve their housing goals with their available resources. Home economists should teach resource management and planning to help families attain goals. Families can be helped to set realistic standards and goals.

Woodward, H., Gingles, R., Woodward, J. C. 1974. Loneliness and the elderly as related to housing. *The Gerontologist*, 14.

The degree of happiness and contentment with housing is a factor in determining feelings of loneliness. Data were collected from 390 elderly individuals by use of a

questionnaire and loneliness inventory to discover differences between people in various housing situations. The findings suggest there are many housing possibilities for the elderly, and the type of housing is probably not the most important consideration.

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BOOKS AND CHAPTERS  
IN BOOKS

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Alexander, H. H. 1976. *Design: Criteria for Decisions*. Macmillan Publishing Co., Inc. New York.

The primary purpose of this book is to identify and investigate the information and criteria used when making environmental decisions--decisions relating to the planning and selection of the spaces, structures, and objects that intimately surround the human body to the larger considerations of the environment. The book is divided into four parts. Part I presents a discussion of the elements and principles of aesthetic design. Part II explores environmental design--historical development of city plans, urban land use, contemporary city plans, and interior environmental considerations. Part III reviews architectural design from prehistoric to the present day with an emphasis on domestic architecture. Part IV covers furniture design from prehistoric to contemporary.

Brent, R. S. 1982. Advocacy design in the nursing home: Cultivating public and private spaces for the newly admitted resident. *Vitalizing Long Term Care: The teaching nursing home and other perspectives*. NY: Springer Publishing Co., 1984, 159-176.

No abstract available.

Graff, C. L., & Reid, E. H. 1980. Strengthening the family in the social network: traditions, locations, and configurations, in N. Stinnett et al., (Ed.), *Family Strengths, Vol. 3: Roots of Well Being*. Lincoln, NE: University of Nebraska Press, 332-333.

A model is proposed for further study which is based on interviews with 102 families randomly drawn from a population of families have 11 to 14 year old children enrolled in 4-H clubs. The results indicate that strong close ties linking children and parents develop in homes with a high rate of interaction, an extensive social network both inside and outside of a home that is contemporary rather than traditional both in style and patterns of use. In families living in a traditional home with limited social involvement (centered primarily around employment and contacts with relatives), there is a tendency toward negative reinforcement for the child behaviors and greater distance separating parents and child.

Morris, E. W. & Winter, M. 1978. *Housing, family and society*. John Wiley and Sons: New York.

This book is about the complex processes by which American families make decisions about their housing. The book is divided into two parts. Part I presents the conceptual framework for the analysis of housing that constitutes the remainder of the book. Chapter 1 presents a general orientation to the relevance of biological psychological social and economic theory to the study of housing. Chapter 2 outlines the concepts necessary for understanding housing problems in terms of cultural norms, the criteria by which the family, the

community, and the society evaluate housing. Chapter 3 presents a description of the American family and its development in relation to housing. Part II elaborates several of the norms and discusses differences among norms that apply as the family progresses through the life cycle. Whether or to what extent housing needs are different for childless couples, single individuals, and single parent families are also discussed. Part II also emphasizes norms for space (Chapter 5) tenure and structure type (Chapter 6) and quality, expenditures, and neighborhood (Chapter 7).

Morris, E. W., Winter, M., & Crull, S. R. 1980. *Transformation and weighting of items in the measurement of satisfaction*. In H. K. Hunt and R. L. Day (Eds.), *Refining concepts and measures of consumer satisfaction and complaining behavior*. pp. 81-85. School of Business, Indiana University: Bloomington, IN.

The paper is an evaluation of several types of (1) transformed and untransformed and (2) weighted and unweighted satisfaction scales. The criteria include alpha reliability coefficients, and use of the scales as dependent and independent variables in correlation and regression. The two superior forms are (1) the raw unweighted sum of the scores on a series of items and (2) the weighted (using respondents importance ratings) transformed (using more extreme scores for dissatisfaction than for satisfaction) sum of a series of items.

Morris, E. W. 1976. A normative deficit model of consumer satisfaction. In H. K. Hunt (Ed.) *Conceptualization and measurement of consumer satisfaction and dissatisfaction*. Cambridge MA: Marketing Science Institute, 1976.

The purpose of the paper is to assess the relative influence on housing satisfaction and the propensity to move of deviations from 1) cultural norms, 2) family norms, and a combination of cultural and family norms about housing. The paper is based on the theory of family housing adjustment. The data are based on 455 interviews of approximately an hour in length conducted in 1975 with an adult member of selected households in central Iowa. Regression analysis was used to analyze the data. The results show that the strongest predictors of propensity to move are satisfaction, age, and tenure deficit. The results also showed the strongest predictor of satisfaction is family bedroom deficit. The overall conclusion was that cultural deficits are as effective predictors of satisfaction and propensity to move as family deficits.

Morris, E. W. & Winter, M. 1981. Housing in D. A. Dillman and D. J. Hobbs (Eds.) *Rural Society in the U. S.: Research issues for 1980s*. pp.196-204. Boulder CO: West View.

Research issues that relate rural housing conditions to the housing standards and needs of American families are discussed. The overall research question that is being addressed is one of preserving the normative housing stock of rural areas in the face of far reaching societal changes. Some research issues that are addressed include demographic change, economic change, natural resource availability, technological change, government intervention and cultural change.

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Morrison, B. M. 1977. *Socio-physical factors affecting energy consumption in single family dwellings: An empirical test of a human ecosystem model*. Book/The Behavioral Basis of Design, Book II; NY: Downen, Hutchison and Ross, Inc.

Objectives: To study the relationship between socio-physical factors, belief the energy problem and energy consumption in single family detached dwellings. Methods: Survey (N=97) Analysis: Multiple regression and recursive path analysis. Findings: The number of persons, major appliances, and rooms in a dwelling unit contributed most to the variance explained. Belief in the reality of the energy problem was not found to effect a change in energy consumption patterns.

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DOCTORAL  
DISSERTATIONS



Akpan, A. E. 1981. *A preliminary study of household energy adjustment of Nigerian urban dwellers*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

This study was designed to a) determine household energy behaviors of Nigerian families, b) examine individual and family variables that relate to household energy management and c) assess the needs of households in managing limited energy resources. A sample of 193 households was randomly selected from seven residential communities in Nsukka town in Amambra State, Nigeria. The survey research method was used in collecting data. A relatively small proportion of the Nigerian households was using the respondent's preferred fuel. Fuel preference did not depend on household income however a significant relationship was shown between level of education of respondents and fuel preference ( $p = .0008$ ). Families that used kerosene often grouped up to buy their supplies. Fewer than one-half reported that they often bought and stored kerosene for household use. The general problems with household energy supplies were a) shortages and failures in supplies of gas and electricity, b) scarcity of kerosene and c) a decrease in size of bundle of firewood for the regular price. Respondents employed outside the home reported more problems with household energy shortage and failures than other groups of respondents. No significant relationship ( $p = .05$ ) was found between age, household income, level of education of the respondent, proximity to a gas distributor and attitudes of respondents toward selected energy issues.

Bailey, A. W. 1979. *Socioeconomic variables and attitudes of consumers related to energy conservation behavior*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

The objectives of the research were to determine if socioeconomic variables influence energy conservation behavior of consumers, if socioeconomic variables influence attitudes of consumers toward energy conservation, if attitudes influence behavior, and if socioeconomic variables influence behavior directly or indirectly by first influencing attitudes. Independent variables were number in household, income of household, age of head, and education of head. Dependent variables were energy conservation behavior and attitude toward energy conservation. Attitude also was an intervening variable between socioeconomic variables and behavior. Addresses from gas consumption records were used to mail questionnaires. The sample consisted of 1,875 respondents who owned their single-family dwelling. Analysis included Pearson product-moment correlation analysis, factor analysis, multiple regression analysis, and path analysis. Results showed that number in household, age, and education affected attitude and behavior significantly. Attitude was an intervening variable between socioeconomic variables and behavior. Socioeconomic variables exerted a direct effect on attitude and behavior and an indirect effect on behavior through attitudes. The socioeconomic variables has a stronger relationship with behavior than they had

with attitude and attitude had a stronger relationship with behavior than did the socioeconomic variables. Results suggest that conservation programs should focus on incentives to bring about behavioral change and on programs to influence attitudes. The Ohio State University: Columbus OH.

Cook, C. C. 1982. *Determinants of residential location of female householders*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

In this study a model of determinants was proposed and evaluated in an attempt to better understand the dynamics of residential location among female householders. Using census tract data from Columbus, Ohio, separate analyses were conducted for each of five groups (all female householders, one person female householders, two or more person family female householders, female householders with children under 18 years present and nonfamily female householders) to determine whether the model of determinants of residential location of female householders differs empirically for these groups. Results of the investigation indicated that separate analyses for subgroups of female householders are warranted. One person female householders were negatively associated with percent black households, and positively associated with tract distance and percent householders over 65 years only. Percent two or more person family female householders, however, were inversely related to median rent and positively related to percent black householders. Only two determinants of location were important in explaining the location of nonfamily female householders. Tract density was positively and percent householders over 65 years was negatively associated with their location. Neither the variable median rent nor the variable percent black householders was associated with percent nonfamily householders.

Crull, S. R. 1979. *Residential satisfaction, propensity to move and residential mobility: A causal model*. Ph.D. Dissertation. Iowa State University: Ames, IA.

The purpose of the dissertation was to analyze housing deficits, housing and neighborhood satisfaction, propensity to move, and residential mobility. The critical issue was the interpretation of residential mobility as housing adjustment process in which households adjust their housing to meet changing needs. The basic theoretical orientation came from functional analysis in sociology. The theoretical framework conceptualized deviations from housing norms as housing deficits. Deficits were measured as a gap between actual tenure, structure-type, space, and expenditure conditions and the conditions prescribed by norms. Data were from 341 households in a probability sample in a small city in 1975. Subsequent mobility was measured in 1978. Path analysis procedures were used. These findings were supported in the causal model: residential mobility is affected by propensity to move which in turn is affected by housing satisfaction. Neighborhood satisfaction is not related to propensity to move. Housing satisfaction is affected by neighborhood satisfaction and housing deficits. The age of the head had direct effects on most of the variables. The findings indicate that both household characteristics and housing factors are essential for predicting residential mobility.

Downer, D. B. 1977. *Adolescent use of parental dwelling space*. Ph.D. Dissertation. Purdue University: West Lafayette, IN.

The purpose of this dissertation is to discover if patterns of use and attitudes toward the dwelling differ by individual, family, and dwelling characteristics, and to discover if attitudes or feelings about the dwelling are correlated with these characteristics. The sample included 614 adolescents. The findings revealed that living room use is greater in families where bedrooms were shared and that girls performed a greater number of household activities than did boys.

Franklin, E. M. 1980. *Use of housing space by families with preschool children: their needs as future design criteria*. Ph.D. Dissertation. University of Michigan: Ann Arbor, MI.

Activity patterns of 37 moderate income families with 2 or more preschoolers living in 5 housing types were studied to determine if families share common activity patterns. The objectives were to develop methodology, document use of housing space, and identify behavioral criteria. Data were collected by questionnaires, observations, and recall interviews. Use-of-space data were analyzed by smallest space analysis. The findings indicate definite commonalities of activity patterns for preschool families. Analysis of two data collecting techniques of recall interview and observation showed that they do not yield comparable data. Funded by the Agricultural Experiment Station, Project Number 2052.

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Gailey, F. H. 1973. *An analysis of development/use time for a computer assisted instruction unit on basic household electricity*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

This computer assisted instruction (CAI) project was designed to develop and test for acceptability a unit in basic household electricity and to obtain information on development and author time in relation to student terminal use time for the different CAI modes employed. The unit consisted of four modules: 1) Electrical Terms, 2) Safe Use of Electricity, 3) Household Circuit Game, and 4) Cost of Using Electricity. Modules 1, 2 and 4 were written in tutorial mode and simulation was used for module 3. The programming language was Course Writer III. Data were obtained on time used by the author and support personnel in the development to operational status of each module. Records consisted of two major categories: content writing and computer related activity. Student terminal use time per module was recorded by the computer and ratios of development time to student terminal use and author time to student terminal use were determined. Both author and development time were greater for the simulation mode than for tutorial. Amount of time used by other people was greater in computer related activity than in content writing whereas the author's time was greater in content writing. Average ratio of development time to student terminal use was 134:1. Greater acceptance was found for modules in the tutorial mode than in simulation.

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Garrison, C. L. 1978. *Analyzing oven energy use and performance with a cake-pan radiometer*. PhD Dissertation, Purdue University: West Lafayette, IN.

The energy situation as well as current and proposed legislation dictate a need for an improvement in appliance efficiency. The household oven at the present time has an efficiency of approximately 10 to 15 percent. As manufacturers develop ovens that are more efficient it is imperative that the ovens maintain a high level of baking performance.

The objectives of this study were to learn more about the heat transfer parameters in a household oven and to correlate the results of baked cakes with the output of a cake-pan (CP) radiometer. The CP radiometer had been developed to measure the radiant heat mode in the oven.

Measurements from the CP radiometer indicated that less than ten percent of the energy available is actually absorbed by the pan and used to cook the food. The oven/pan system currently used is very inefficient. Most of the cooking on the bottom of the food is accomplished by heat from the convective mode while the radiative mode is the primary energy source to the top of food. The proportion of radiant to convection heat transfer modes in the oven were about equal.

The CP radiometer can be used to predict the cake parameters of weight loss, volume, bottom browning and top browning. Most of the weight loss can be estimated in this way as well as about half of the volume and bottom browning. However, only one-fourth of the top browning can be accounted for using the CP radiometer data.

Hassoun, V. S. 1977. *Selected characteristics of families and ownership of selected items of home electric equipment as predictors of total direct electric energy usage in the home*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

A predictive model for total direct electric energy (kwh) used in household operation based upon information on ownership of selected electric equipment and selected characteristics of families was developed. Data were obtained from a random sample of customers of four electric utility companies in central Ohio. Participants (N=195) met the following criteria: (1) at least two related persons lived in the household, (2) no business operated from the premises unless the electricity was metered separately), (3) all single family houses, (4) no part of the house rented, (5) no electric heat or central electric air conditioning. The dependent variable was the amount of electricity used June, 1975, through May, 1976. Stepwise multiple regression analysis was employed to determine the predictive equation  $Y = -249 + 672X + 925X$  where Y = predicted energy usage, X = water heater type (non-electric, electric), X = number of electric major appliances owned, X = household size (number of persons in the household), X = employment (number of

hours per week the home manager was employed outside the house,  $R = 0.54$ ,  $p = 0.0001$ . There was no significant relationship between electricity usage and location (urban or rural), education of home manager, score for knowledge of electricity, number of small appliances owned.

Higa, M. 1973. *A comparison of rural houses before and after 1945 in the Ryukyu Islands*. Ph.D. Dissertation. University of Minnesota: Minneapolis, MN.

This study was undertaken to document the nature of the rural houses built before and after 1945 in the Ryukyu Islands, and to identify changes in rural housing as a result of the Second World War and the American occupation. A sample of 24 houses in five Ryukyu Islands was selected with the help of extension agents stationed throughout the Ryukyu Islands. Activity data were collected by questionnaires, observations and photographing. Detailed plans were drawn from each house. Results show that the size of the family unit was decreasing, shifting from a stem to a nuclear family. Houses built after 1945 were smaller than the traditional houses and contained fewer rooms. Concrete block was introduced as a building material. There was a notable shift from traditional Ryukyuan style to Japanese and Western style houses and furnishings, as well as a movement from rural to an urban orientation. Almost all of the occupants of the 24 houses stated that there was great improvement in family housing, especially in terms of durability, convenience, and comfort.

Hogan, M. J. 1976. *Energy conservation: Family values, household practices, and contextual variables*. Ph.D. Dissertation. Michigan State University: East Lansing, MI.

Objectives: Determine differences in adoption of energy conservation practices in families with varying husband-wife congruency patterns and value commitment. Methods: Survey (N=157); Analysis: Analysis of Covariance Findings: Those conscious of environmental problems were most likely to report conserving energy.

Hough, O. B. 1979. *The relationship of attitude and control orientation to behavior, motivation and foresight in residential energy management*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

between preference and familiarity. This was supported by tests of the data. Hypotheses two through nine were rejected by the tests.

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Household energy practices, foresight, motivational and demographic characteristics of residential energy consumers were analyzed with respect to control orientations and attitudes toward the energy situation in order to further understanding of the managerial behavior of families. Data used in the study were derived from an on-going residential energy research project (N=278). Attitude and control orientation measures were used as a basis for selecting of three subsamples used in analyses in this study (N=72). One-way analyses of variance and Scheffe' tests were performed to test the differences among means for sub-samples. In only six cases were significant ( $P < .05$ ) F values obtained. Respondents in all subgroups reported that increasing costs of electric service were affecting their energy use behaviors but project that future life style would be relatively unchanged and saw only minor accommodations to the energy situation. Increased cost and power interruptions were identified as factors most effective in getting participants to change energy use. The generalized, situation-specific classification provided by the attitude and locus of control measures used in the study did not prove to be sufficient to explain differences related to energy management. It may be necessary for perceived scarcity of energy to take on a demand or goal nature before the management system would be used by families to plan for, implement and evaluate energy use.

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Huff, J. A. 1976. *An investigation of the effects of selected variables on preference for the familiar in the context of furniture selection*. Ph.D. Dissertation. University of Missouri: Columbia, MO.

The research question in this study was stated: Is there a relationship between preference and familiarity, and if so, is such a relationship dependent upon certain demographic factors? Hypotheses were stated such that preferences for a chair was related to the subject's familiarity with the chair preferred. The expected relationship was that the subject would tend to like those chairs which he found familiar and to not like those he found not familiar. Nine hypotheses, concerned with different independent variables were tested. A simple random sample was drawn from a college population officially enrolled during a summer session. Data were collected using a sample survey technique. The questionnaire presented subjects with photographs of twelve chairs and questions designed to gather data concerning the variables to be tested. A total of 219 questionnaires were finally accepted for analysis. The phi coefficient, usually associated with chi-square tests of independence, was used to measure the relationship between preference and familiarity for each demographic group. Data for each demographic group was represented by 2 x 2 contingency tables. Hypothesis one was stated: The subjects will show a positive relationship

Kern, S. A. T. 1974. *Optimizing Heat Transfer and Absorption in a Domestic Electric Oven*. Ph.D. Dissertation. Purdue University, West Lafayette, IN.

The purpose of this study has been to re-evaluate energy consumption and cake baking in a conventional electric oven, to examine pan and oven lining material variations relative to their ability to improve the flow of radiant energy in a conventional electric oven, and to develop an oven/pan system to control and optimize radiant energy use while maintaining the quality of the baked product without exceeding the time necessary for baking in the conventional oven.

Results from modification of the conventional electric oven with different oven linings and pan configurations at a variety of temperature settings to promote absorption of radiant energy indicated that such modification can reduce the energy required to bake a product and decrease the baking time by as much as 30%. None of these alterations, however, produced an acceptable product.

A new bi-radiant oven system was constructed involving three major components:

- Two low wattage electric resistance heating elements were substituted for the single high-wattage element used in the conventional oven. The combination of the two elements produced less total energy than that produced by the single element. This resulted in less excess energy and lower interior oven temperatures.
- The third component was an energy acceptor/transmitter that enhanced the absorption of radiant heat energy and increased the efficiency of the total system.

A constant, regulated supply of radiant energy was supplied by both elements of the oven system. The rate of energy presented by each element was controlled to accommodate differences in absorptivity of the pans used and the product surface. The bi-radiant oven increased the proportion of radiant energy available for baking thereby increasing the efficiency of the oven and decreasing the baking time. Heat transfer to and throughout the cake was evenly distributed from the top and bottom of the cake. The cake was very fine grained, high in volume, and had a flat surface.

The total energy use of the bi-radiant oven was almost one fourth that of the conventional oven for the cake baking process. Very little heat was wasted in heating the oven and the surrounding room. Total baking time was reduced by over 40% when preheat was included.

The use of two separate heat sources allows the oven to meet the energy requirements dictated by any food by adjusting each element independently. No preheating was necessary which also contributes to the efficiency of the oven system.

Since over three million new ranges are sold each year in the United States the energy saving potential for the

bi-radiant oven system is substantial.

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Kwallek, N. P. 1978. *Housing qualities and conditions of the elderly*. Ph.D. Dissertation. Purdue University: West Lafayette, IN.

The primary objective of this thesis was to discover the housing qualities and conditions of the elderly. A sample of 23,225 elderly was selected from the United States Census Bureau's Public Use Files. Analysis of variance and student-Neuman-Keul were employed, and the findings indicated income was the most influencing variable, the eldest and poorest males experiencing the lowest quality of housing.

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Lee, K. J. 1976. *Space use for the family activities in traditional dwellings and modern single and multiple dwelling units in Seoul, Korea: An explanatory study for future design criteria*. Ph.D. Dissertation. University of Minnesota: Minneapolis, MN.

This study examines three types of existing Korean dwellings, traditional single and modern single and multiple units, to study how Korean families use their housing space to discover what dwelling unit(s) would meet the needs of the changing Korean family and to suggest what improvements or changes are needed for future design criteria. Three middle class neighborhoods in Seoul, Korea, each having a distinctly different housing style, were selected for the survey. Ten families from each of the three neighborhoods were randomly chosen. Interviews were conducted with questionnaires and observations. The results indicate that the type of family was not an important consideration in determining the housing satisfaction and in choosing a house plan. In terms of space use and type of heating system, both the traditional and western designs had advantages and disadvantages.

Longstreth, M. 1981. *The capitalization of energy efficiency in housing prices*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

The capitalized values of energy-conserving structural characteristics and of overall thermal efficiency as measured by the quantity of natural gas used for heating were imputed. Homes were described in terms of their features. Hedonic price theory was used to determine the implicit market prices of the energy-conserving structural characteristics and overall thermal efficiency. The implicit, or hedonic, prices were estimated with 2SLS regression analysis. It was found that sample homes lacked thermal efficiency, indicating that the potential for fuel savings from conservation was substantial and that information about benefits need improvement. The energy-conserving structural characteristics of ceiling and wall insulation and wood/vinyl window frames had statistically significant, positive effects on sale price between 1971 and 1980. Sale price declined with marginal increments in natural gas consumed for heating. When the 1971 to 1980 period was divided into two time segments it was found that storm windows and window frames had a statistically significant influence on sale price after 1976.

Natural gas consumption had no effect on sale price prior to 1977 but had a sizable, statistically significant effect after 1976. The sample was composed of 615 single family dwellings located in Columbus, Ohio and sold between 1971 and 1980. All sample homes were heated with natural gas. Data sources included a mailed questionnaire, Multiple Listing Service and property tax records.

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McLeod, W. P. 1978. *The development and application of an instrument to measure the objective visual elements of living rooms*. Ph.D. Dissertation. University of Wisconsin: Madison, WI.

The purpose of this dissertation was to develop and apply an instrument to measure the objective visual elements of living rooms. The hypothesis tested was that, due to the presence of certain visual elements, people may be consciously or unconsciously drawn to certain living room designs. The instrument devised had a reliability of 0.90. Descriptive statistical analysis of the data on 13 subjects showed that it is possible to verbally identify and quantify objective visual elements of living room photographs.

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Merkley, S. 1981. *The influence of past experiences with shortages and deprivation on present energy consumption and conservation*. Ph.D. Dissertation. Michigan State University: East Lansing, MI.

This research was designed to examine the influence of past experiences with macro-level crises characterized by shortages or deprivation of natural resources on current energy consumption and conservation behavior exhibited at the micro-level. More specifically, the

research was designed to determine if households headed by individuals exposed to varying levels of natural resource shortage or deprivation in the past (i.e., World War I and II, and The Great Depression) were currently exhibiting differing patterns of consumption, and in response to the energy crisis, change in consumption behavior. Two research questions guided the study: 1) Does exposure to shortages and deprivation of natural resources in the past influence current energy consumption patterns? 2) Does exposure to shortages and deprivation in the past influence in energy consumption patterns over time (i.e., conservation behavior), especially given the urgency placed upon conservation since the Arab Oil Embargo in 1973-74? Energy consumption data from utility and oil companies and sociodemographic and attitudinal measures reported by household members were the bases of analysis. Data analyzed were from Michigan Pilot Project Conserve. Multiple regression procedures were employed to test the research questions. Results of the first analysis indicated that when controlling for the effects of aging-related factors which could influence energy consumption patterns, level of past experience with shortages and deprivation was a statistically significant predictor of current energy use behavior (Beta=.114, p=.02). Households headed by individuals with higher levels of deprivation experience currently appeared to be consuming larger amounts of energy than comparable households headed by individuals with less experience. The second research question studied proportional change in consumption behavior between 1976-1977 and 1978-79. This analysis revealed that when controlling for aging-related factors between the two periods, level of past experience with shortages and deprivation was a statistically significant predictor of percentage change in energy consumption behavior (Beta=-.114, p=.055). Thus, households headed by primary income earners with higher level of exposure to deprivation and shortages in the past appeared to be responding to the energy crisis by reducing proportional consumption to a greater degree than equivalent households with less exposure of hardship.

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Morrison, B. M. 1975. *Socio-physical factors affecting energy consumption in single family dwellings: An empirical test of a human ecosystems model*. Ph.D. Dissertation. Michigan State University: Lansing, MI.

Objectives: To study the relationship between socio-physical factors, belief the energy problem and energy consumption in single family detached dwellings. Method: Survey (N=97) Analysis: Multiple regression and recursive path analysis. Findings: The number of persons, major appliances, and rooms in a dwelling unit contributed most to the variance explained. Belief in the reality of the energy problem was not found to effect a change in energy consumption patterns.



Null, R. L. 1978. *Determinants of student perceptions of the social and academic climates of suite living arrangements in university residence halls*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

Six-hundred-ninety-three suite resident's perceptions of social and academic climates of dormitory suite arrangements were assessed. Step-wise multiple regression and correlation analyses of data indicated a positive attitude toward suite living and a generally negative attitude toward suite academic climate.

Owenby, S. K. 1976. *Determinants of the demand for dwelling space*. Ph.D. Dissertation. Purdue University: West Lafayette, IN.

The supply and demand relationship for housing is different than it is for other goods. Models were tested for the owner, renter, and overall housing markets using the variables of household types, amount of space, total annual cost of housing, and satisfaction. Fifty-one home owners and forty-nine renters were selected. An analysis of the two submarkets indicates that their housing needs are different. An overall analysis indicates that housing costs affect satisfaction with dwelling space.

Rasdall, J. O. 1973. *Products information as a resource: A study of factors affecting its usefulness to consumers*. Ph.D. Dissertation. The Ohio State University: Columbus, OH.

Informational input into a proposed consumer information use system was examined. A sample of 500 households in Bowling Green, Kentucky, was surveyed for attitudes toward qualities of product information about automatic washers. Usable responses were received from 206 women (49.4 percent return). Two scales, an Information Discrimination Scale (IDS) and an Information Needs Scale (INS) incorporated in to the questionnaire were analyzed and outcomes were considered to be within statistical ranges of acceptability. Findings relating to the informational input into the information use system included negative attitudes toward relevancy and specificity, and accessibility. Washer life expectancy, costs of operation, performance, product failures, other product purchase and use information constituted areas of information needs regarding accessibility and relevant, specific content. Advertising media were evaluated by the participants as generally lacking in reliability. Not only were highly educated women better discriminators than others between good and poor quality information ( $p < 0.001$ ), but they also acknowledged more information needs ( $p < 0.0002$ ). Poorly educated women, older homemakers, and homemakers with low family incomes appeared most vulnerable regarding quality of informational input into decision-making processes. ( $p < 0.001$ ,  $p < 0.001$ ,  $p = 0.01$ , respectively).

Said, S. M. 1980. *Quality of life and propensity to adjust: An analysis of housing and education*. Ph.D.

Dissertation. Iowa State University: Ames, IA.

The overall objective of this dissertation is to advance the understanding of the factors that motivate housing and education adjustment. A total of 485 personal interviews were collected from areas near the Iowa-Nebraska border. The hypothetical model presented includes five levels of variables that were analyzed in a parallel analysis representing the two domains--housing and education. Regression and path analysis were utilized. The hypothetical model is supported. The findings indicate that the respondents who are more likely to adjust their housing are the younger people, larger families, and those who reported higher housing deficits who are dissatisfied with their housing. The older, higher income people and those who reported fewer housing deficits are the most satisfied with their housing. Higher housing deficits are reported among the younger, lower-income, and among those who feel housing is less important. The respondents who are likely to adjust their education are the younger, those who feel education is more important, and those who are less satisfied with it. The people who are satisfied with their education are those who reported fewer education deficits. The higher education deficits are reported among those who are having health problems and those who consider education to be less important. The higher housing and education satisfaction, the lower housing deficits, and the more healthy the respondents are the higher the quality of life.

Shank, S. W. 1976. *Factors affecting the successful home ownership of the rural blue collar mortgages in Indiana*. Ph.D. Dissertation. Purdue University: West Lafayette, IN.

The purpose of this thesis was to investigate the reasons for an increasing number of defaults on Farmers Home Administration Rural Housing Loans. The sample included default and nondefault housing families. The variables tested were the number of children and the number of problems for late payments. One conclusion was that if more information on the two variables was collected before granting loans, there would probably be fewer defaults.

Thomson, J. A. A. 1979. *An analysis of perceptual responses to coal energy adaptation in residential design*. Ph.D. Dissertation, University of Missouri: Columbia, MO.

The purpose of this study was to investigate the relationship between individual perceptions of active solar energy adaptations in residences and the acceptance of solar energy as an alternative source of energy, based on aesthetics and appearance. An accidental sample was taken of 181 subjects attending a local home show. The research tool used was a semantic differential with analysis of results using ANOVA (analysis of variance) and MANOVA (Multi-variant Analysis of variance) procedures. In addition the results were submitted to Factor Analysis for further clarification of results. Indications are that solar adaptations necessary for the functioning of an active solar system did not present conflict in an individual's perception and expectation in housing appearance. Further indications are that social and cultural inputs dealing with the energy crisis affect the responses of individuals to solar energy adaptations on residential design, the age and family orientation of individuals has bearing on the interpretation of differences between the solar residence and one not adapted for solar energy, and that awareness of energy and energy concerns has bearing on the manner in which solar adaptations are perceived by individuals.

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Woodward, J. E. 1982. *Energy management in Central Ohio households: Factors related to frequency of use of selected electric cooking appliances*. Ph.D. Dissertation, The Ohio State University: Columbus, OH.

An in-home survey was conducted during the summer of 1981, with 125 households in the Columbus, Ohio, area to examine variation in use of one or more four cooking appliances owned in relation to one or a combination of these factors: 1) relative importance to the primary user of selected meal preparations goals, 2) a characteristic of the particular appliances, 3) related household facilities, 4) selected human resources of the primary user. Appliances studied were electric skillet, toaster-oven, slow cooker and microwave oven. Households were selected by systematic probability sampling. The instrument was a self-administered questionnaire. Factors significantly related to frequency of appliance usage differed among appliances studied. In the multiple regression analyses, significant factor(s) at the .05 level in explaining variation were: microwave oven--relative importance of the goal, "being able to use as little physical effort as possible in meal preparation;" toaster-oven--educational attainment of the primary user, number of selected appliances owned per household and availability of convenient storage space and slow cooker--availability of an adequate electrical circuit for the appliance and extent of presence of desired characteristics in slow cooker owned.

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MASTER'S THESES

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Abbott, S. 1978. *Energy usage and demographic variables*. M.S. Thesis. The Ohio State University: Columbus, OH.

The purpose of this study was to determine how the household characteristics: household size, residential location, educational attainment of the home manager, household income, and employment of the home manager outside the home were related to the use of different amounts of electrical energy by households. Use of electrical energy was examined in terms of total direct energy in kilowatt-hours used per year. Using stepwise multiple regression on a sample of 261 households, it was found that household size, residential location, employment of the home manager outside the home and household income explained 24 percent of the variation in KWH used. The relationship between demographic characteristics and electricity usage differed for families whose income was above and below the median income for their household size. Two variables, household size and location explained only 18 percent of the variance for those households in the high income subgroup (n=76), while three variables, location, household size and number of hours the home manager was employed outside the home, explained 29 percent of the variance for those households in the low income subgroup (n=118).

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Amundson, D. 1975. *Costs and usage patterns of household utilities by elderly Iowans*. M.S. Thesis. Iowa State University: Ames, IA.

This research investigated the role of household utility costs in the expenditures of an elderly person. A survey questionnaire was developed and presented to widows who were 60 years of age and over, in Clermont and Roland, Iowa. The information gathered provided typical bills for electricity, natural gas, water, sewer, garbage and telephone services. The usage levels represented by the utility bills were assumed to be typical of an elderly person living alone in her own home. Six levels of usage were determined for each utility and were used with the existing rate structures in six communities of increasing size across the state of Iowa. The results obtained were hypothetical monthly utility costs for an elderly person living in each of the communities. Findings revealed that total utility costs for an elderly person comprise a significant portion of income. Also utility costs could vary from one community to another. A variation of \$26.73 occurred for the summer total monthly utility costs from the lowest cost community to the highest. The winter months' usage levels showed a \$45.43 difference. The percentage of income spent for utilities could reach over 50 percent, depending on income level and usage of utilities. Suggestions for further study include the following areas: various types of household composition, direct cost information from utility companies, in depth study of utilities and housing alternatives for elderly.

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Anderson, G. M. 1977. *Home owner acceptance of*

*energy efficient housing*. M.S. Thesis. Iowa State University: Ames, IA.

Objectives were to: 1) determine attitudes of homemakers toward energy situation, 2) determine homemaker understandings related to energy conservation in housing, 3) determine homemaker acceptance of specified energy conserving housing features, 4) determine influence of cost of energy conserving housing features upon homemaker acceptance, and 5) determine sources from which homemaker has received energy-related information. Nine homemakers were selected from a sample of 99 home owners who had participated in a project entitled "Acceptance of Energy Efficient Residential Housing Design." A questionnaire was designed to achieve objectivity and accuracy in recording case study data. The principle findings were: 1) most homemakers believe oil companies and consumers are primarily responsible for energy shortages which are a major, world-wide problem that will not improve in the next 10 years; most feel a combined effort by various societal sectors will be necessary to resolve the situation; 2) conservation of energy is viewed as a means to reduce the utility bill, not as a way to manage effectively a scarce resource; 3) further education relative to energy conserving housing features is necessary; 4) homemaker knowledge of energy-related housing features did not influence choice of the present home, retrofitting of the home, or willingness to consider these in a new home; 5) initial cost appeared not to influence acceptance of features and 6) most helpful sources of energy-related information were television and newspapers.

Asmus, S. P. 1973. *Transportation and mobility patterns of the elderly in rural towns of southwestern Iowa*. M.S. Thesis. Iowa State University: Ames, IA.

Transportation and mobility of the rural nonfarm aged were investigated in order to identify personal and social characteristics related to the elderly's patterns of getting about. A secondary purpose was to determine the extent to which lack of transportation inhibited mobility. A questionnaire was used to gather data from 209 households in eight southwestern Iowa towns with populations of 1,000-2,500. Respondents were 65 or older, predominantly female, and lived in their own homes. Two measures of transportation and four measures of mobility were used as dependent variables. The 16 personal and social characteristics used as independent variables were health, income, type of housing, age, sex, education, marital status, household composition, number and proximity of children, time lived in house and community, and self-sufficiency. Using multiple regression analysis, the amount of variance, but the most frequently appearing variables were income, self-sufficiency, and health. Age and marital status were common to both transportation regressions, while housing and income appeared in all four mobility regressions. Nearly 40 percent of the respondents experienced some limitations in their mobility due to lack of transportation, but the difficulties were serious for only about 11 percent of the sample.

Barnhart, N. J. 1976. *User evaluation of a suburban housing environment*. M. S. Thesis. University of Missouri: Columbia, MO

An exploratory study was conducted in a suburban neighborhood for the purpose of determining what adaptations, if any, occupants had made to the interior and exterior spaces of their housing environment, in accordance with the demands of their family's life style, stage in the life cycle, and socio-economic status. Thirty-three residents were interviewed, and their houses and neighborhood were observed. Adaptations and changes of interior spaces were observed. Adaptations and changes of interior spaces were recorded on a basic floor plan used during the interview sessions. Observations of exterior spaces were recorded on grid sheets. The results, tabulated using simple percentages, indicated the following adaptations were made most frequently: finishing the basement and adding a patio.

Barrs, L. 1975. *The Relationship Between Duration of Residence, Chronic Mobility and Residential Mobility*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to further test the normative housing deficit model of residential mobility developed by Morris and others and to analyze in depth the additions to the model of duration of residence and to a lesser extent chronic mobility. The data were collected in early 1971 in Tioga County, New York. The size of the sample was 405 households. Regression was used to analyze

the results. The results showed that there is a strong relationship between duration of residence and the independent variables (months married, education the head, household income, presence of husband, background of head and occupational status of the head. Another finding is that housing satisfaction is directly affected by bedroom deficit, renter deficit and negative structure deficit.

Beebe, K. J. 1978. *Evaluation of the design of apartments for the disabled in three elderly high rises in the metropolitan area*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

Three local public housing developments were examined in terms of usability for the disabled. Results identified usable spaces in the development and indicated design improvements which should be made. A review of enabling legislation supporting specialized housing is included and analyzed from the standpoint of design factors.

Blocker, R. S. 1979. *Energy conservation related to selection and use of microwave ovens, refrigerators, and room air conditioners*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to study home owners' attitudes and responses to energy management as related to appliances in the home. The sample consisted of 150 home owners. Fifty had purchased room air conditioners, 50 had purchased microwave ovens, and 50 had purchased refrigerators during the period May 1, 1976 to May 1, 1977. Conservation practices are most acceptable to home owners when presented in terms of financial savings in utility costs. The home owner's belief in energy scarcity in the United States is related to the purchase of a specific appliance. With refrigerators, the home owner's lack of knowledge of technical aspects of energy efficiency is revealed through infrequency of practices which influence energy efficiency. Knowledge of air conditioner energy efficiency ratios is limited and not related to the age or education of the homemaker. Home owners tend to consider price, warranty, and brand name of appliances as more important than energy efficiency or possible energy savings. Energy ratings and possible energy savings were considered more important in the selection of room air conditioners, microwave ovens, and refrigerators than appliance characteristics: style, design, or special features. Retail store characteristics considered most important by those who had purchased room air conditioners, microwave ovens, and refrigerators are availability of service and knowledge of the sales person.

Brent, R. S. 1974. *Smallest space analysis of children's play in five housing types*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

Using a sample of 35 families with preschoolers living in five types of housing (high rises, walkups, town houses, mobile homes, and single family dwellings), the study showed housing type to be a significant variable in terms of where children's activities occur in the home. Usefulness of smallest space analysis technique was also verified.

Bresler, A. F. 1975. *Residential crowding, fertility limitation, and the propensity to move*. M.S. Thesis. Iowa State University: Ames, IA.

Residential crowding, in terms of a lack of bedroom space, is examined as it affects future childbearing and mobility attitudes of families. Data for 522 households were selected from a large, interdisciplinary survey research project administered by researchers from Cornell University in the summer of 1966. The survey was designed to empirically study the demographic, social, and political implications of various types of housing in San Juan, Puerto Rico. The conceptual model diagrams five sets of variables: 1) background variables, 2) fertility status variables, 3) residential crowding variables, 4) fertility attitudinal variables, and 5) five main dependent variables. Multiple linear regression was used to examine the amount of variance in each dependent variable that was accounted for by all other variables included in the regression equation, and to identify variables that were significant in predicting the dependent variables. Findings showed that attitudes towards current housing conditions and future fertility acted as intervening variables in the path analysis. Results support the hypothesis that residential crowding influences attitudes towards childbearing which serve as motives to limit or maintain family size. In addition, it seems clear that crowding has a direct effect on the desire to move.

Bross, C. 1975. *Normative Housing Deficits and Residential Adaptation*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to further test the normative housing deficit model of housing behavior and to analyze some of the factors that foster the use of residential adaptation as a housing adjustment behavior. The sample used as a data base for this study includes the 327 home owners from a two state cluster sample of 405 hamlet and village households in Tioga County New York. Pearson product-moment correlation and regression analysis were used to analyze the data. The main results are that 1) there is a positive relationship between bedroom deficit and residential adaptation, 2) changes in household size had no relationship to the generalized adaptation activities, 3) there is no relationship between structure type of the dwelling unit and the residential adaptation activities and 4)

households may perform residential adaptation not only to make their homes more livable and for the duration of their own residence, but also to make the property more saleable in the future.

Brucker, L. K. 1978. *Development of a theoretical structure for the classification of housing concerns*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

The purpose is to develop a scale to measure housing concerns including perspectives from anthropology, psychology, and sociology. A dictionary of 800 statements used to describe housing was created from the literature. Guttman's facet design technique was used to categorize and hierarchically order housing problems.

Butord, L. E. 1976. *Sanitation in self-service laundry equipment*. M.S. Thesis. Iowa State University: Ames, IA.

The magnitude of microbial transfer in self-service laundry washers was investigated by obtaining swab samples from the interior surfaces of the washer as well as from wash water before and after disinfectant treatment. The effectiveness of a disinfectant as a microbial control measure was studied in the application of four treatments: chlorine, quaternary ammonium, and phenolic disinfectants, and a control (no disinfectant). Four self-service facilities were sampled with 10 replications of the procedure for each treatment at each location (total 160 replications). Although washers were set on a warm setting, water temperatures attained ranged from 76°F (24 degrees c) to 124 degrees c (51 degrees c). The quaternary ammonium proved to be most effective averaging a 97 percent microbial kill in all trials; the chlorine was second most effective with a 58 percent kill and the phenolic was least effective with only a 25 percent kill. The chlorine and phenolic disinfectants were found to be adversely affected in lower water temperatures. Interfamily cross-contamination in self-service facilities is a potential public health problem which is aggravated by uncontrollable environmental conditions, such as water temperature. A procedural change in laundry procedure to include the use of a disinfectant to insure adequate levels of sanitation is recommended.

Burda, J. E. 1979. *Residential energy conservation and the quality of life*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose was to analyze the effects of residential energy conservation on the overall quality of family life in the context of housing adjustment theory. It was hypothesized that normative housing deficits influence a family's attitudes toward energy conserving policies as well as the energy saving features they incorporate into their homes, and further that these attitudes and behaviors affect overall residential satisfaction and quality of life. Data were collected through a mail questionnaire sent to 455 households in Ft. Dodge, Iowa. Two-hundred-nineteen questionnaires were returned and analyzed. The findings substantiate the literature regarding the normative housing deficit theory which states there are two alternative responses to stress caused by deficits, adjustment and adaptation. The energy conservation policies found easiest to accept are those that fall into the realm of adjustment, whereas policies requiring adaptation are found to be far less acceptable. It is found that the more moderate energy conserving policies operating within the realm of existing norms are met with greatest acceptance.

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Camp, S. M. 1976. *Development of teaching tools to present design criteria and construction procedures for window treatments*. M.S. Thesis. Iowa State University: Ames, IA.

The objectives of this thesis were to investigate the possibilities for a variety of window treatment solutions and to prepare teaching aids for presenting the design and construction procedures for window treatments to interior design majors in a university classroom. The development of teaching tools began with the decision to present the application of design criteria by using transparencies of acetate to show line drawings of window treatment solutions and alternative solutions on an overhead projector. The purpose of this first teaching aid was to emphasize the importance of the design which must come before the estimates, the sale, the construction, and the installation. The second teaching aid evolved during the process of taking photographs of a number of window treatments and the workroom procedures used in their construction. The author decided that the business forms necessary for use with the client, the designer, and the workroom would be beneficial as a second teaching aid. It includes a step-by-step description of the interaction between the client, the designer and the workroom with example forms included. The third teaching aid consists of a series of slides with explanatory script covering the steps used in solving a given design problem from beginning to end including workroom procedures as well as installation at the sites.

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Carey, K. H. 1979. *Fertility, crowding, and residential mobility*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to examine the relationships among fertility, residential mobility, and residential crowding. Data were from a probability sample of the Omaha-Council Bluffs metropolitan area and from four small nonmetropolitan communities in Iowa and Nebraska. Residential history and family history data gathered through personal interviews were transformed into marriage-year segments containing housing and demographic information about each year of marriage. Each marriage-year segment was treated as a separate observation. Nearly 6700 marriage-year segments were analyzed. Regression analysis was used to assess the relationships among the three variables. The major conclusion of the study was that fertility influences mobility through the intervening variable, residential crowding. The birth of a child increases the probability that a family would be crowded. Residential crowding, in turn, increases the probability that a family would move.

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Chang, Y. J. 1977. *Original designs for residential interior spaces combining Chinese and American furnishings*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis was to create original designs for residential interior spaces combining Chinese traditional furniture with modern American furnishings. The design solutions were limited to the dining-living areas of the homes of four theoretical family situations thought to be typical of families in the author's country, The Republic of China (Taiwan). Literature of both Chinese and American styles was reviewed to find characteristics of each style which would be compatible in the same interior space. The design solutions were based on the needs, interests, and activities of each family. Although the same types of furniture were used in each solution, variety was obtained through the use of different plans, furniture arrangements, color schemes and textures of materials. The characteristic of both styles found to be most compatible when combined within the same space was simplicity of line and form. Both styles used straight horizontal lines and square or rectilinear forms in tables, sofas or multiple seating, screens, storage, and wall decorations. Design applied to furniture in the Chinese style was found to be too ornate to blend with contemporary furniture. Only simple carving on some pieces was selected for use in this study.

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Cheesman, C. A. 1976. *Applied non-stick finishes: consumer expectations, perceptions, and evaluations of performance*. M.S. Thesis. Purdue University: West Lafayette, IN.

Non-stick cookware has been marketed as having no food sticking to it, being easy to clean and maintain, and as being an aesthetically appealing finish. Consumers have used non-sticks for a decade. It would be of great value to the manufacturer to know what the consumer expects from non-stick performance and how much he likes to cook with it. Of importance also would be an assessment of the performance of specific finishes used for an extended period of time under normal home conditions. The purpose of this study was to determine consumers' expectations about non-stick cookware, their perceptions and evaluations of two types of non-stick cookware.

Thirty families participated in a study in which they used five types of cooking utensils: frying pans, saucepans, cake pans, cookie sheets, and loaf pans. Each family was given two of each cookware type, one coated with a non-stick finish labeled "L", the other with a non-stick labeled "S". The study focused on one type of cookware, frying pans, and on selected items from the collected data.

The subjects' expectations about non-stick cookware performance (staining, sticking, marring, and residue build-up) and about satisfaction in cooking with non-stick finishes were assessed as well as their initial preference for one finish over the other. During an eighteen-week period, the subjects recorded after each use their perceptions about the occurrence of such usage disorders as staining, sticking, and marring and their satisfaction in cooking with non-stick finishes.

Post-use evaluations were made by the subjects and independent performance ratings of the finishes were obtained from judges not previously involved in using the finishes. The results of this study indicate that:

1. Consumers expect usage disorders to occur on non-stick frying pans with use but like to cook with them.
2. Non-stick finishes perform better than expected with the fluorocarbon finish having slightly less staining, sticking, and food residue than the silicone types and with similar marring on both.
3. Consumers devote increasingly greater use to the finish that sticks and stains the least if they have a choice and will be likely to repurchase a frying pan with that non-stick finish.

Cholpraserd, S. 1977. *Original designs of furniture for specific use in a living room of a home in Thailand*. M.S. Thesis. Iowa State University: Ames, IA.

The objectives of this thesis were to: 1) explore the modern design of living room furniture in the United

States, 2) study different materials that are used in living room furniture, 3) design original pieces of furniture to be used specifically in a living room in Thailand, 4) develop the author's knowledge in the uses of materials for furniture, and 5) develop the author's ability to present his ideas in a professional manner. Literature on modern furniture and construction in the United States and of a limited number of publications on home furnishings in Thailand were reviewed. Literature on wood and wood processing in the furniture industry in the United States was also examined. The author visited a local plastics firm to study some of the processes involved in making furniture with plexiglass. With knowledge gained from these sources, the author was able to complete eight original designs of varied types of furniture which could be used in a residential interior in Thailand. Most of the designs are planned to be flexible, are based on a modular system and are suitable for limited space. No attempt was made to construct the actual pieces of furniture or to present the design concepts to a group of people from Thailand. The author hopes to market his designs in Thailand.

Connelly, S. M. 1980. *Irradiation heat flux gauge: A predictor of oven irradiation levels*. M.S. Thesis. Purdue University: West Lafayette, IN.

The objectives of this study have been to develop instrumentation and procedures to measure irradiation in the oven and to use this instrumentation as a predictor of oven irradiation levels needed to bake a cake. The irradiation heat flux gauge was developed to assess the radiative component of heat transfer in ovens. Heat transfer in conventional electric ovens is a complex process involving a mix of convection and direct, reflected, and reradiated radiation. This process is not fully understood and likely differ between ovens.

The gauge developed measures radiant energy incident on it from the surrounding surfaces. It was determined that 2,500 W/m<sup>2</sup> of radiant energy was needed to bake the top surface of a cake while 3,200 W/m<sup>2</sup> of radiant energy was needed for the bottom in the experimental oven used.

The model developed to predict irradiation needed to bake a cake is based on certain positions in the experimental oven. It is important to recognize that the irradiation in these positions is dependent upon the view factors between the gauge and the oven surfaces as well as the surface temperatures. If irradiation measurements in these positions are found to be ones that when combined with convection could estimate amounts of heat energy needed for an acceptable cake, a manufacturer might use the model when making changes in the oven.

In the future when a range of irradiation levels required to produce acceptable cakes is known, it would be possible to use the gauge to determine if the irradiation available in an oven would bake an acceptable cake.

Curtis, P. L. 1981. *Comparison of early stage families' and crowded stage families' social climate, behavioral attitudes, and perceived stress in their residential environment*. M.S. Thesis. Purdue University: West Lafayette, IN.

The purpose of this study was to identify the relationship between perceived stress and perceived family social climate, and to compare early stage family perceived stress and social climate with crowded stage families living in similar space arrangements in multifamily dwellings. The data for the study were collected from eighty four units randomly selected families residing in identical single-floor units in two-story buildings of married student housing of a large mid-western university. Each family completed two measures: the Family Environment Scale (Moss, 1974) and the Family Space Inventory (Melson, Kemp, 1976). The FES subscales measured perceived family social climate. The five subscales of the FSI provided descriptive information and indices of level of perceived stress and adaptive strategies. The results of the FES indicated high cohesiveness, high expressiveness, and low conflict were an integrated dimension of family social climate. Early stage families perceived less stress in their residential setting. Early stage families made fewer adaptations than crowded stage families.

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Dahlstrom, L. W. 1976. *Children's concepts of their physical home environment*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

365 kindergarten children were asked to name the room in their home they liked best and to draw a picture of that space. Their drawings were analyzed to test the following hypotheses: That kindergarten age children have a good concept of their home and that they can express these concepts visually. 52.1 percent of the children liked their bedrooms best and 76 percent could draw an enclosed interior space. Data strongly supported the hypotheses.

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Dale-Thomas, A. C. 1979. *Entry area choices as related to sex and family environment in the dwelling unit*. M.S. Thesis. Purdue University: West Lafayette, IN.

The purpose of this thesis was to investigate the difference between males and females on the choice of entry area in relation to personal preferences, previous experiences, and family environment. Fifty students were questioned and the data were analyzed using chi square. The findings indicate that differences in preferences by sex were significant and that entry areas with more exits were preferred.

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Davis, R. A. 1974. *The relationship of the art deco style to contemporary furniture design*. M.S. Thesis Iowa State University: Ames, IA.

In this research the Art Deco style of the 1920's and

1930's was examined in a contemporary context, emphasizing its impact on contemporary furniture designs. The origins of contemporary furniture designs in the Art Deco era were also explored. In the first part of the study, the history of the Art Deco style was researched with emphasis on its relationship to modern art and architectural movements and cultural developments of the period. In the second, furniture designs of Art Deco designers were compared and contrasted with works of contemporary designers. Personal interviews with contemporary furniture designers and Art Deco collectors confirmed the conclusive relationship between the two styles, as did observations by the author at various galleries and furniture markets. The research was supplemented by a review of literature which resulted in an annotated bibliography of publications related to the Art Deco style. Photographs of representative furniture designs were assembled to illustrate the comparisons between the two styles. Suggestions for further research in this area are: an analysis of the relationship between Art Deco and the specific decorative arts (graphics, textiles, objects d'art), a comparison of European and American Art Deco, and a study of the European workshop groups of the 1920's.

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Dexter, A. L. 1976. *The specific housing needs and values of apartment builder-owners and apartment tenants*. M.S. Thesis. University of Missouri: Columbia, MO

The purpose of this study was to investigate the correlation in housing needs and values of apartment builder-owners and apartment tenants. Two somewhat parallel questionnaires were developed. One was sent to builder-members of the local chapter of the National Home Builder Association; another was sent to a sample of apartment tenants living in their units and to a random sample of tenants listed in the local telephone directory. Questionnaires were designed to determine from both groups: the interior, exterior, and convenience features determined most important; specific desires in cosmetic interior design; types of rental units preferred and rents considered acceptable; locational preferences; and perception of current and future housing needs. Data were tabulated by calculator and converted into percentages. Agreement was evident in areas of exterior styling, interior, exteriors, and convenience features preferred. Sample groups showed significant disagreement on locational preference, and perception of current and future housing needs.

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Duffus, J. M. 1979. *The effect of relocation on the elderly's space perceptions, adaptation, and space use in the residential environment.* M.S. Thesis. Purdue University: West Lafayette, IN.

The purpose of this thesis was to investigate the effects on the elderly of time since relocation on spatial perception, perceived stress, satisfaction with the new environment, adaptive behavior, and space use. The sample included 57 elderly persons. Regression analysis showed no significant effect of time since relocation on spatial perception, perceived stress, satisfaction, or adaptive behavior. Time did not have an effect on space use (selected locations and activities).

Dzubay, K. E. 1975. *Designing a course in housing-interior design for use at Minneapolis Edison High School.* M.S. Thesis. University of Minnesota: Minneapolis, MN.

A proposal for a 13 week course in housing for senior high school students including recommendations for resources, visual aids, and handouts evaluated during two sessions of teaching the course at Edison Senior High in Minneapolis.

Edlow, M. D. 1981. *Coping ability of the elderly in two housing environments: Implications for education.* M.S. Thesis. Iowa State University: Ames, IA.

The purposes of the study were to determine the coping ability of the elderly in two housing environments in Baltimore, Maryland and to examine possible relationships between coping ability and selected variables. Subjects were 65 older adults living in two high rise apartment buildings and in houses. The instrument consisted of a twenty-six item interview schedule designed to assess the respondent's coping ability (self esteem, community security, knowledge of environment and knowledge of services) and selected variables including morale, length of residence, and health. Data analysis included descriptive statistics, chi square tests, correlations, t-tests, and analysis of variance. The results showed differences among the three groups in self-esteem and community security while no differences were found for knowledge of environment and knowledge of services. Morale was the variable found most frequently related to coping ability.

Edwards, C. S. 1974. *Internal-external control orientation of Ohio home owners related to maintenance and improvement of housing: A validation study.* M.S. Thesis. The Ohio State University: Columbus, OH.

The purpose of the study was to determine the concurrent validity of two, eight-item modified I-E scales for housing in relation to the original Rotter I-E scale and to analyze the relationship between I-E and housing maintenance and improvement behavior. The two short scales were those used in Hatch 47. "Maintenance

Aspects of Owned, Single Family Dwellings related to selected Economic Factors in Small Towns and Metropolitan Areas." The nonrandom sample was composed of 135 home owners who were members of men's civic or professional organizations. The questionnaire obtained demographic data, score on the three I-E scales and totals for number of maintenance and improvement jobs performed. Correlation coefficients, the Spearman Brown formula, and the Kuder-Richardson formula 21 were used to assess reliability and validity of the I-E scales.

Edwards, E. J. 1973. *Tasks performed in four occupations related to housing and interior design.* M.S. Thesis. Iowa State University: Ames, IA.

The purposes of the thesis were to identify tasks performed by employees with less than baccalaureate preparation in housing and interior design occupations, to determine the frequency of task performance by worker, and to determine tasks common to all four occupations and tasks unique to each occupation. Four task checklists were developed and mailed. Answers were received from 217 persons employees as assistant interior designers, floor mechanics, upholsters, or drapery makers. Participants responded to each task on the checklist on a five point frequency scale with the higher numbers indicating more frequent performance. Twenty-six tasks on each checklist were common to all four occupations. Tasks unique to each occupation comprised the remainder of the four checklists. Responses to both common and unique tasks were intercorrelated and the resulting pooled within intercorrelation matrix was examined for tasks which were highly related to each other. Related tasks were grouped into clusters and names according to the job function expressed in the group. Reliability coefficients for 11 of the 15 clusters ranged from 0.73 to 0.94, while the remaining four were between 0.48 and 0.60. Mean frequency scores for the tasks and clusters were calculated and used for ranking within and among clusters. Recommended use of data is for curriculum planning and development in occupational courses in interior design and furnishings.

Eichenberger, M. A. 1975. *A comparison of ownership of selected household appliances and residential energy use by employed and nonemployed homemakers in the Lansing, Michigan area.* M.A. Thesis. Michigan State University: East Lansing, MI.

Objectives: Differences in energy and appliance use by homemakers of different employment status. Method: Survey (N=107) Analysis: Analysis of covariance. Findings: No significant differences between full-time, part-time and nonemployed homemakers on quantity or types of appliances owned or on total direct residential energy. Households with a fully employed homemaker used a percent less, and part-time 6 percent less residential energy than non-employed homemakers.

Eichner, M. M. 1982. *Residential Energy Conservation, air quality, health, and satisfaction*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to test the hypothesis that efforts to conserve energy by tightening up residences has a deleterious effect on the quality of the air in those dwellings and a subsequent effect on the health and satisfaction of the residents. One hundred ninety-eight households in central Iowa were interviewed about the energy-conserving features of the dwelling, the fuels used in the house, the number of smokers in the dwelling, and the number of health symptoms experienced by the residents. A Drager Gas Detector was used to test for the presence of carbon monoxide in the residences. The results show that small but detectable amounts of carbon monoxide were found in over half of the dwellings, but only a weak relationship was found between carbon monoxide and the number of health symptoms experienced by the residents. Higher levels of carbon monoxide were present in homes that have more energy-conserving features, homes with smokers, and homes that have unvented gas or kerosene space heaters. The number of health symptoms was directly related to the number of smokers in the household and the residents' exposure to harsh chemicals at work. The residents with health problems had low satisfaction with their housing.

Ericksen, M. K. B. 1977. *Selection criteria used by women for upholstery fabric and their related textile knowledge*. M.S. Thesis. The Ohio State University: Columbus, OH.

The study investigated the selected criteria used and the textile knowledge possessed by consumers in relation to upholstered furniture fabric. Also investigated were the relationships between 1) selection criteria and 2) textile knowledge and selected demographic variables. The sample consisted of 101 women who resided in west central or central Ohio. An instrument was developed to measure selection criteria and textile knowledge. Criteria were comfort, durability, aesthetics, economics, easy care, safety and prestige. The Kuder-Richardson Reliability Test Formula-8 was used to test the reliability of the selection criteria and the textile knowledge measure. Statistical tests used for the study were one way analysis of variance to determine significant differences between selection criteria and demographic variables and textile knowledge and demographic variables. A paired t test was used to determine differences between mean scores of selection criteria. Comfort was found to be the most important criterion followed by durability, easy care, safety, aesthetics, economics and prestige. Significant differences found were between education and easy care, education and comfort, and education and prestige. Scores on the textile knowledge test were relatively low.

Fattahi, F. A. 1977. *Migration, urbanization, and housing problems of low-income families in Tehran, Iran*. M.S.

Thesis. Iowa State University: Ames, IA.

The objectives of the thesis were to: 1) examine the housing and economic situation of migrants before and after their move to Tehran and 2) compare housing behavior and attitude of migrants and urban-nonmigrants. A sample of 160 low-income households were interviewed in Tehran and a questionnaire administered to each. With respect to the first part of the objectives, it was found that migrants improved both their housing and economic situation upon their arrival in Tehran. The result of the analysis in the second part showed that in spite of the better housing quality of migrants, the nonmigrants were more satisfied with their housing. It was concluded that the reason migrants were not as satisfied as nonmigrants was because they have a higher level of aspiration as far as their housing satisfaction is concerned.

Flachskam, N. W. 1975. *Carpet flammability: The effect of repeated soiling and cleaning*. M.S. Thesis. The Ohio State University: Columbus, OH.

The purpose in the study was to investigate the effect of repeated soiling and cleaning on the flammability of wool, acrylic and nylon deep pile plush carpetings. Carpets were soiled on the floor of the Home Economics library. The soiled carpetings were cleaned with three different methods: professional, aerosol foam, and rotary shampoo. Flammability was measured in terms of mean flame, spread according to the Federal Flammability Standard DOC FF 1-70, after zero, one and three soiling/cleaning treatments. Mean flamespread values were evaluated using two-way analysis of variance. The type of soiling/cleaning treatment did not affect the mean flame spread of any of the carpetings. The mean flame spread of only the wool carpet was significantly increased by repeated soiling/cleaning treatments ( $F = 43.50, p < .01$ ). Distortion of the plied pile yarns by agitation during the cleaning process apparently caused the increase. All of the carpets still complied with the federal standard after three soiling/cleaning treatments.

Flannery, B. A. 1978. *Residential water use and drought-induced water-conservation practices*. M. S. Thesis. Iowa State University: Ames, IA.

The objectives of the study are to: 1) measure home owner's attitudes, level of knowledge, behavior change during water rationing; 2) identify relationships between selected demographic variables and the dependent variables; and 3) to compare water-conserving behavior of respondents during rationing to water-conserving behavior after rationing. The data were obtained from interviews of 105 home owners in Ames, Iowa. Reliability testing indicated a very low reliability among the items related to knowledge of water-use concepts. Cross tabulation analysis showed that full-time employment status of the husband, higher occupational level of the husband, and lower household income are significantly related to a greater level of reduction in water-use during rationing at the .05 level. A higher educational level of the husband, larger household size, and a higher level of knowledge of water-use concepts are significantly related to proconservation attitudes. A greater level of reduction in water use during rationing is related to a lower level of reduction after rationing. The regression analysis indicated that a higher educational level of the wife is associated with higher proconservation attitudes and a greater level of water use reduction during rationing. Behavior change during rationing is the strongest predictor of behavior change after rationing in regression analysis.

Gamble, B. D. 1977. *Mobile homes in Noble County, Ohio*. M. S. Thesis. The Ohio State University: Columbus, OH.

Relationships between characteristics of mobile home residents and quality of home, mobility patterns, and satisfaction with the unit were investigated by correlation and chi-square analysis. Data from 117 mail questionnaires returned by 30 percent of residents whose units were registered with the county auditor formed the basis of the study. Fifty percent of households were headed by persons less than 34 years old. More than 50 percent were 1 or 2 person households. Twenty-seven percent of household incomes were in the \$10,000 to \$14,999 range. Mobile home heads had lived in the county an average of 33 years. Total living area ranged from 224 to 1760 square feet. A fourth of the units were 10 years old and over. Forty-eight percent and 43 percent of the households considered single family and mobile homes, respectively, to be the best housing types. Eighty-eight percent preferred rural plots or individual lots for locations rejecting mobile home parks. Level of satisfaction was higher for the location of the mobile home than for the unit itself. As incomes increased, ownership of laundry appliances and satisfaction with the condition and location of the unit increased. High income households occupied mobile homes for four years and had higher preferences to occupy conventional homes than did other income groups. As age of the head increased, satisfaction with the comfort of the mobile home in

summer and winter decreased.

Gilkey, M. O. 1981. *The role of home appliances; in contributing to the independence of a young individual with a disability*. M. S. Thesis. Iowa State University: Ames, IA.

The objectives of the study were to determine the factors which may influence the development of independence, the types of motions and activities performed in the home environment, the potential for appliances in the home to extend ability and independence, and adaptations made to appliances which would make appliances easier to use by the young adult with a disability. The data were obtained from mailed questionnaires of 22 young adults (ages 14-22) and their parents from Iowa. The factors which influenced the development of independence included the young adult's desire to live alone, support from the family and society, participation in activities which would develop necessary basic motions and skills, and the use of appliances provided little, if any, opportunity to acquire ability to perform motions and develop skills which would contribute to a high level of independence in activity performance. The young adults in the study had very little experience with the selection of appliances and the adaptation of design features to best extend their abilities to live long.

Ginthner, D. 1973. *Selected physical features in apartments for the elderly and how they encourage social interaction*. M. S. Thesis. University of Minnesota: Minneapolis, MN.

A study of three age segregated public housing units in Minneapolis varying in terms of space, physical features, and characteristics of the neighborhoods. The findings describe specific visual and spatial characteristics which enhance the usefulness of public spaces in meeting social needs of the elderly.

Goulart, L. X. 1981. *The effect of the concordance between housing values and housing conditions on housing satisfaction*. M.S. Thesis. Iowa State University: Ames, IA.

This research explores the role of housing values in predicting housing satisfaction. The general hypothesis tested is that when a family's housing is in accord with its values, housing satisfaction will be significantly higher. Housing values were assessed by asking respondents to rank a list of nine statements describing housing values. The values were then grouped into economic, personal, family, and status value clusters. The respondents' housing conditions were scored according to each of the four value groupings. Respondents who gave high rankings to a particular value cluster and whose housing also scored high on conditions that indicated the manifestation of their values in their housing were deemed to have housing in accord with their values. Results indicate that housing conditions in accord with status values and total concordance, calculated by adding the individual concordance scores, were the only significant predictors of housing satisfaction. When socioeconomic and demographic characteristics were controlled, personal, family, and economic value concordance were not significantly associated with housing satisfaction.

Greeley, R. 1973. *Household textiles consumption by mid-western urban families: Selected aspects*. M.S. Thesis. Iowa State University: Ames, IA.

The objectives of this thesis were to examine household textiles consumption and test hypotheses about this process. Data were collected by personal interviews from 630 families in two mid-western urban areas. Interrelationships were examined using multiple regression analysis. In general, the unexplained variance was high. Family size and economic well-being were related to most aspects of household textiles consumption examined. Larger families and those who were economically better off were likely to do laundry in equipment in their homes and had more household textiles for regular use. Higher income families were more likely than other families to have specific household textile items for 'special' or occasional use. Household textiles consumption was less highly associated with family composition, characteristics of individual family members (e.g., age, education, occupation, race), and characteristics of family housing (e.g., length of residency, tenure, type of dwelling). Few distinct patterns were apparent in the associations of selected independent variables with lending, borrowing, giving, or receiving household textiles. Inventory levels of household textiles did not appear to be related to the availability and type of laundry equipment used.

Haley, D. 1977. *Individualized housing elements supportive of human activity*. M.S. Thesis. University of Wisconsin: Madison, WI.

This study deals with providing the activity support elements of the housing unit with characteristics appropriate for all users. Mass production of housing elements is increasing and requires standardization. This thesis suggests ways to make these standardized items adaptable to the wide range of users. Two constraints were applied in the study: differences concerned with were limited to those found in normal healthy people, and activities studied are limited to those that are usually or might possibly be supported by built-in units. The differences and activities were researched and, from the research, design factors were written. The thesis consists of the design solutions arrived at by applying the research information.

Harris, C. M. 1976. *The relationship between housing quality, housing satisfaction, and residential adaptation: A normative housing study*. M.S. Thesis. Iowa State University: Ames, IA.

In this thesis housing quality, in terms of actual household conditions and amenities, was examined as it affects satisfaction and residential adaptation (additions, renovations, and remodeling). Data for the 527 households were drawn from a stratified random sample of housing needs and conditions of small towns and cities in the spring and summer of 1975. The major purposes of the study include developing a reliable quality variable which would be validated by the analysis and the comparison of the concepts of housing satisfaction and housing satisfaction weighed for saliency. The conceptual model was examined through the use of path analysis diagramming four sets of variables: 1) background variables, 2) housing quality, 3) satisfaction and satisfaction weighed for saliency, and 4) residential adaptation desires and expectations. The major conclusions are that the quality variable is reliable and tentatively validated by the analysis. Satisfaction weighted for saliency is superior to the unweighted satisfaction scale in terms of the strength of the relationships and the number of significant predictor variables. Housing quality satisfaction weighted for saliency has a direct effect on the desire for further residential adaptations. Quality has a direct effect on both the satisfaction measure and the satisfaction saliency measure.

Helgerson, N. J. 1977. *Interior design, architectural details, and social aspects involved in the rehabilitation of a low-income house through student participation*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to study the rehabilitation of a particular house for a low-income family through interior design student participation. The author correlated the design of the interior spaces, the architectural details, and the social aspects of a house to a practical situation which would benefit all of the people involved in the project. A review of the literature in low-cost and low-income housing was found to facilitate communication with professionals in the field and with the low-income family contacted later in the study. A non-profit, private organization, HOME, Inc., of Des Moines, Iowa, provided the actual house, most of the funds for the renovation, and the low-income family who moved into the house after the project was completed. The students and the author experienced designing on a limited budget and became acquainted with the social aspects of low-income families and neighborhoods. The author and students expanded their knowledge in application of skills in carpentry techniques, refinishing, drapery making, installation of floor coverings, and application of their design. The total rehabilitation cost for the project was \$2,100.00 plus 1,530 student labor hours.

Helling, C. 1979. *An investigation of some passive and active solar homes in Missouri*. M.S. Thesis. University of Missouri: Columbia, MO.

The purpose of this study was to investigate the various passive and active solar energy techniques applied to some homes in Missouri. A preliminary review of current information on solar energy techniques was made. Slides were taken of homes and their solar techniques which best displayed the current applications adaptable to Missouri's geographic and climatic conditions. The slides were combined with a taped cassette description for an audio-visual presentation.

Hertel, E. Z. 1980. *Consequences of household decision making concerning location on housing and transportation expenditures*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of the thesis was to analyze the consequences of the choice of residential location on housing and transportation expenditures. The sample (777) was taken in a six-county area surrounding Fort Dodge, Iowa, during 1975-76. The empirical models were tested by using multiple regression in a covariance framework of analysis. The proposed hypotheses are supported. When household composition and socioeconomic factors are controlled, a negative relationship exists between location and housing expenditures a positive relationship exists between location and transportation expenditures and no relationship exists between location and the combined

housing and transportation expenditures.

Higaki, R. T. 1974. *Household ownership as related to selected socio-economic variables in Ribeirao Preto, Brazil*. M. S. Thesis. The Ohio State University. Columbus, OH.

This study is an investigation of the relationship between ownership of 11 items of household equipment and socio-economics variables for 181 families in Ribeirao Preto, Sao Paulo, Brazil, as reported by heads of households. A Guttman scale for ownership of the selected items of household equipment was constructed and the score from this served as the dependent variable. The Coefficient of Reproducibility was 0.89 and Coefficient of Scalability, 0.68. Independent variables included were the income of the family, locale of residence, family size, stage in family life cycle (computed from age of the first child), social position (based on education and occupation level of the head of the family) and number of days husband and wife worked on and off the farm. Ownership of pressure pan, range, radio, manual floor polisher, electric shaver, blender, refrigerator, and electric floor polisher was significantly related ( $p < .05$ ) to income and locale of residence. Hypothesis relating ownership of household durables to other socio-economic characteristics of the families were not supported. The Ohio State University: Columbus OH.

Hogarth, J. M. 1979. *Income elasticities of household energy expenditures*. M. S. Thesis. The Ohio State University: Columbus, OH.

Income elasticities of energy demand for electricity and heating fuels demand for the total population and for families at different levels of well being were determined. Multiple regression analysis was used with a double log model. Independent variables were net income and family size, and expenditures were the dependent variables. The 1972 portion of the 1972-73 Consumer Expenditure Survey Tape was the data base. A split sample was used for model development and validation. Differences in income groups were tested by dividing the sample into 4 categories based on the relationship between a family's income and medical income for families of its size. Chow's test was used to test the difference between the regression coefficients of these 4 categories. Households in the lower three categories had income elasticities of electricity demand that varied directly with level of welfare. Households in the lower two categories had income elasticities of heating fuel demand that varied inversely with level of welfare the income elasticity of heating fuels was lower than that of electricity. The results were validated with the second sample, using Chow's test. Due to the age of the data, the values of the elasticities cannot be applied to 1979 households; however, the study provides a method for developing elasticity measurements.

Holsapple, G. 1982. *Browning and energy consumption in skillets on a conventional electric range and in electric fry pans*. M. S. Thesis. The Ohio State University: Columbus, OH.

Use of time, amount of browning, and evenness of browning of potato cakes were analyzed to determine if use of electric fry pans or an electric range/skillet combination for frying would result in differences among those variables when the amount of electrical energy used was held constant. Three different brands of fry pans, with two identical models of each, and one electric range with two identical skillets were studied. The appliances were preheated, and two loads of potato cakes were fried. The times to preheat, fry each food load, and to perform the total task were recorded. The amount of browning of the potato cakes was determined by using a reflect meter. Analyses of variance were conducted and Duncan's multiple range test was applied where appropriate to arrive at the following conclusions. A significance level of  $p > .05$  was selected. A browner product was obtained in the electric fry pans than on the electric range when the amount of electrical energy used was held constant. Also, a browner product was obtained in the first food load than in the second food load for all brands of electric fry pans and the electric range. More time was required for the electric than the electric range. More time was required for the electric range than the electric fry pans when the energy input was held constant. There were no significant difference in evenness of browning. Equipment--Selection, Purchasing Use.

Hoppe, S. R. 1974. *Interorganizational communication patterns between public housing agencies in a metropolitan area*. M.S. Thesis. Iowa State University: Ames, IA.

This thesis examines selected noise factors in the communication process among government agencies involved in the public housing development process. Data were gathered using open-ended interviews with selected staff of the St. Paul area office of the U.S. Department of Housing and Urban Development, the Metropolitan Council of the Twin Cities Area, and eight suburban housing authorities in the Minneapolis-St. Paul metropolitan area. Frequency of communication, communication channels, accessibility, overload, motivation-objectivity, role legitimacy, credibility, role-induced behavior, and status and prestige are judged to have some effects on the housing project development process. Overall the character of the communication process among the organizations is judged to be a contributing factors to the length of the development process. It is concluded that future housing project research related to the length of time in the housing development process focus on interorganizational variables other than communication noise factors.

Johnson, D. S. 1976. *Fabric softeners and their effect on*

*a flame retardant cotton flannelette fabric*. M.S. Thesis. Ohio State University, Columbus, OH.

The investigation was conducted to determine the effect of repeated applications of fabric softeners on physical properties of a flame retardant fabric. Four experimental treatments were used: control and application of one of three fabric softeners, in rinse, in dryer--sheet form, or in dryer--packet form. Analysis of variance was used to evaluate the results after 0, 15, 35, and 50 washings with a phosphate detergent for flammability, absorbing, softness, weight, thickness, dimensional stability, thread count, tear strength and breaking strength. A total of 2 samples failed the DOC FF 3-71 test and in both instances the rinse applied fabric softener was involved: a filling sample after 35 washings and a warp sample after 50 washings. The dry-applied softeners did not result in as soft a hand as the rinse-cycle softener. However, they did not affect absorbency as greatly as did the rinse one. In general a significant decrease in strength occurred in the warp direction of the fabric but not in the filling.

Kaylor, G. S. 1975. *The influence of chair types on verbal interaction*. M.S. Thesis. Purdue University: West Lafayette, IN.

Chair types and situations were studied to discover what influence they had on verbal interaction. The sample included 80 female college students. Analysis of variance showed that women seated in hard chairs use first-person singular pronouns and women seated in soft chairs use first-person plural pronouns. It was also found that chair type has no influence on decision making.

Kiely, N. J. 1976. *Effects of environmental characteristics*. M. S. Thesis. Purdue University: West Lafayette, IN.

The purpose of this thesis was to study the effects of residential environment spaces and room size on the ultimate fulfillment of human needs within the home. A questionnaire was used to obtain data from 327 families. The results showed that more environmental characteristics in private areas than in public areas significantly affect satisfaction of identity and stimulation needs and more environmental characteristics in public areas than in private areas significantly affect satisfaction of security needs.



Kull, K. M. 1979. *Microwave oven utensils: The cleanability aspects of selected materials*. M.S. Thesis. Purdue University, West Lafayette, IN.

During 1977 the microwave oven was the biggest appliance sales gainer with the unit volume up 30.9% from 1976 (Merchandising Magazine, 1978). Along with an increase in microwave oven sales is a substantial increase in the development and sale of microwave oven utensils. The sale of plastic utensils in particular rose 50.9% from 1977 to 1978.

The purpose of this study was to discover what microwave oven utensils, food soils, cooking levels and pan locations (side or bottom), contribute to the difficulty of soil removal from dishwasher washed utensils.

The following microwave oven utensil materials were studied: glass ceramic, polycarbonate, thermoset filled polyester, polypropylene and polysulfone. A variety of foods were investigated during the initial stages of research. Meatloaf, scrambled eggs and macaroni and cheese were selected for the final testing. The cooking levels included undercooking the food, cooking an acceptable food product and overcooking the food.

Polypropylene was found to clean up the easiest in the dishwasher, followed by polysulfone. Thermoset filled polyester was the most difficult material to clean for all foods tested. It consistently had the most residue left after dish washing. Glass ceramic has the second largest amount of residue left, for two of the three foods (meatloaf and macaroni and cheese). For the third food (scrambled eggs), polycarbonate had much more residue than glass ceramic.

Visual analysis of the food residue on the utensil material after dishwasher washing showed scrambled eggs to have the most substantial residue; large chunks of food were left in several cases. The residue from meatloaf was often small specks but still could not be removed easily. Very little residue was left on any of the chips from macaroni and cheese; it was mostly just a film.

The cooking level did not have a consistent effect on the amount of residue remaining on the chips after dish washing. As the cooking level was increased from undercooked to overcooked, the chips did not always have more residue for all foods. When the bottom and side pan locations were tested, chips in the side of the pan usually had the same amount or more residue than chips in the bottom of the pan, but "locations" was not statistically significant.

Less, J. M. 1979. *Energy conservation; attitudes: A comparison between households and local elected officials*. M.S. Thesis. Iowa State University; Ames, IA.

The purpose of this thesis is to examine attitudes of households and local elected officials toward energy conservation policies directed at the home. A sample of

households and a sample of mayors and county supervisors were asked their acceptance of nine energy policies. The selected characteristics of sex, age, and education were cross tabulated with the policy responses to aid comparisons. The additional characteristics of political orientation and length of time in office were added for the elected officials' analysis. Overall the elected officials showed substantially higher percentages for accepting the nine policies than the households. The policy receiving the greatest acceptance was mandatory insulation. Prohibit building in the countryside and shared side walls were the least accepted. The only demographic characteristic showing any significant difference between groups was education. The educational level of the household was more highly correlated with policy proposal acceptance, especially in regard to temperature, limitations and structural changes.

Lester, S. B. 1974. *Effects of level of training on satisfactions and benefits derived with softened versus hard water*. M.S. Thesis. Purdue University; West Lafayette, IN.

The effects of levels of training on the use of softened water in a home and the benefits derived from softened water were studied. Three levels of training were given to three groups of six families each in Lafayette, Indiana. The eighteen families participated in an eight week hard water phase and an eight week softened water phase. Records concerning laundry and cleaning were kept, consumption of laundry products and cleaning products used on fixtures was determined. Undershirts and washcloths were used and evaluated visually and with instrumentation. Satisfactions related to laundry and cleaning were measured during the hard and softened water phases.

The families reduced their consumption of detergent and/or soap with the use of softened water in their laundry. The higher training levels had greater reduction.

The homemakers were more satisfied with the appearance of their laundry when using softened water. The items used by the families during the softened water phase had higher whiteness retention and "cleanness" than items used during the hard water phase. Satisfactions with laundry and cleaning related items were increased when the families used softened water. Levels of training did not affect satisfactions.

The cleaning frequency of bath and kitchen fixtures showed a decreasing trend with softened water. The families used smaller amounts of cleaning products for fixtures during the softened water phase versus the hard water phase. Homemakers' satisfactions with fixture appearance and cleaning ease were also improved with softened water.

The majority of the subjects felt instruction was needed for a first-time user of softened water and preferred the home visit.

MacInnes, R. S. 1976. *An investigation of the design; and use; of interior space; in a high-density; neighborhood; encompassing low to upper-income families*. M.S. Thesis. Iowa State University: Ames, IA.

This thesis studied satisfaction provided by the environmental living arrangements in the newtown high-density community of Cedar-Riverside in Minneapolis, Minnesota. A questionnaire was distributed to study the "experimental" inner-city living concept, to ascertain what, if any, relationship existed between plan characteristics and tenant satisfaction. This study was greatly aided by the 63 percent response rate. Most residents felt positive about the design of their dwelling unit, but tended to be dissatisfied with the various phases of the total community already built. Household perceptions of space and value of space varied considerably by income and social strata. Since space is one of the most important elements of housing design, the findings concerning the design and use of such housing provide a useful framework for future planning.

Manning, C. C. 1980. *Simulation gaming relating to housing education*. Masters Thesis. Iowa State University: Ames, IA.

The purpose was to develop a simulation game which can be used to assist educators, students, and families in understanding the decision-making processes inherent in housing adjustment and adaptation. The game is designed to teach concepts related to behavior of families. These include cultural and family norms, constraints, normative deficits, sanctions, and housing adjustment and adaptation behavior. Two tests of the game were conducted. The test periods showed that the game can provide an environment where participants can learn about the reality of housing decision.

Marvin, M. J. 1981. *Household characteristics, home maintenance skills and motives of tenant households as they relate to energy conservation behaviors*. M. S. Thesis. The Ohio State University: Columbus, OH.

The objective of this study was to examine the relationship of certain household characteristics, home maintenance skills, and motives to conserve energy of 271 tenant households to their energy saving behaviors. The categories for each variable were developed in order that chi-square analysis could be used. Behaviors were divided into high cost, low cost, and convenience and comfort categories. Households with the ability to do weatherstripping, interior painting, exterior painting and caulking of cracks were more likely to participate in low cost energy-saving behaviors. Households with the ability to do carpentry repairs, install attic insulation and cement repairs were more likely to participate in high cost behaviors. Households with ability to do carpentry repairs, repair plumbing, interior painting and caulking of cracks were more likely to participate in convenience and comfort behaviors. Sex of the household head was the only household characteristic that was related to

participation in convenience and comfort behaviors. Mobility of the household was the only household characteristic that was related to the desire for comfort as a motive in energy conservation.

Matson, S. A. S. 1974. *Housing design as it related to the visually handicapped*. M. S. Thesis. University of Minnesota: Minneapolis, MN.

A review of literature, survey of related institutions, and interviews with 14 visually handicapped individuals showed that although visually handicapped people prefer to be treated like any other person, it is important to understand (1) the effects of the physical environment on mobility, (2) individual needs, (3) application of principles of good design.

McKenna, R. S. 1982. *Changing housing norms*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to study changes in the housing norms for home ownership and single-family dwellings reported by members of north central Iowa households. The general hypothesis is that changes in housing norms (family and cultural) are due, in part, to changes in actual housing conditions. The purpose is accomplished through the analysis of panel data gathered during 1975 and 1978 from households living in Fort Dodge, Iowa in 1975. McNemar's chi-squares tests for dependent samples and regression analysis is utilized. The norms that apparently show a significant change from 1975 to 1978 are family, tenure norms and cultural tenure norms. The regression analysis indicates that the households who actually changed their tenure to ownership and their structure to single-family dwellings are most likely to have changed their housing norms in similar directions. In addition, the households with higher socio-economic status (education and income) and who have changed their actual tenure and structure, are most likely to change their housing norms.

McDonnall, N. L. 1975. *Consumer attitudes about and preferences for a selected assortment of non-stick finishes on surface and electric cookware*. M.S. Thesis., Purdue University: West Lafayette, IN.

Cookware is taken for granted by most people, however, it is an essential tool in the preparation of food. Manufacturers tend to promote cookware aesthetic qualities and not the actual cooking qualities of the cookware. Non-stick finishes are considered both aesthetic and functional in their characteristics. The purpose of this study has been to investigate how consumers actually use their own cookware and how consumers would use a selected assortment of non-stick finishes on surface and electric skillets and to evaluate the consumers' attitudes and preferences toward a selected assortment of non-stick finishes.

Forty-eight families used two non-stick finishes during an 18 week study. The 18 weeks were divided into three cycles of six weeks each and each family used one non-stick finish during cycles I and III and used a second non-stick finish in cycle II. The silicone non-stick finish was used alternately with the fluorocarbon and ceramic finishes. Data forms were completed for each use of the skillets. An attitude questionnaire was given at the start and end of each cycle. A group discussion was held at the completion of the study to establish each woman's attitudes and preferences of the cookware she used.

It appears from the results of the cookware ownership that: there is no direct relationship between family size and frequency of use, consumers' pan experiences would be little affected by the pan finish and that the consumers' past pan experience will have little effect on the frequency of use of a skillet.

From the results of the study of actual non-stick finish use it appears that four ease of food removal the fluorocarbon finish had a greater ease of food removal than the silicone finish and the silicone finish had a greater ease of food removal than the ceramic finish. For the fluorocarbon and silicone finishes the ease of food removal is likely to be better in the beginning than after continued use. The fluorocarbon finish requires less effort to clean than the silicone finish and light colors of both finishes required less effort to clean than black finishes. The results indicate that the fluorocarbon finish has a better appearance after cleaning than the silicone finish and that appearances for both finishes were better in the beginning than after continued use. Both silicone and fluorocarbon light finishes will have fewer scratches, mars and wear than the black surfaces. Scratches, mars and wear will build up with continued use of the skillets.

From the group discussions it can be concluded that the use of two non-stick finishes will influence the consumers' choice of non-stick cookware to release food easily, be durable and require little effort in cleaning.

McKenzie, N. L. 1981. *Determinants of the propensity to move of low-income rural families*. M.S. Thesis. Ohio

State University: Columbus, OH.

The purpose was to study determinants of expected or desired mobility of 95 low-income, rural, male family heads. A model based on the Morris and Winter theory of family housing adjustment was used as a basis for formulating hypotheses. Four variable subsets included in chi-square, t-test, correlation and regression analyses included: (1) family characteristics--age and education of head, number in family and total family income, (2) normative housing deficits--bedroom need, owner deficit, bathroom need and maintenance need, (3) housing satisfaction and, (4) expected or desired mobility. Family characteristics were significantly related to normative housing deficits which in turn had a significant negative impact on housing satisfaction, with the one exception of owner deficit. Owner deficit had no influence on housing satisfaction; however, both housing satisfaction and owner deficit had a direct and independent influence on potential mobility. The two variables, housing satisfaction and owner deficit, accounted for 17% ( $R^2=0.164$ ,  $F_2$ , 92,  $p<0.05$ ) of total variation in expected or desired mobility. The addition of the three other deficits increased explanation by only 3% ( $R^2=0.193$ ,  $F_3$ , 89=1.06,  $p>0.05$ ). The four deficit measures accounted for 53% ( $R^2=0.529$ ,  $F_4$ , 90,  $p<0.01$ ) of variation in the satisfaction measure and addition of household characteristics to the model only increased explained variance by 3% ( $R^2=0.559$ ,  $F_4$ , 82=1.47,  $p>0.01$ ).

McLain, J. 1979. *Factors influencing window size preference in residential group-living areas*. M.S. Thesis. University of Missouri: Columbia, MO.

The purpose of this study was to investigate the effects of room activity, site orientation, and window functions on window size preferences. The research sample was composed of 140 university students. They were presented a diagram of a three-bedroom home which included living and family rooms, identical in size and shape, but differing in site orientation. Data were analyzed by means of contingency tables and the chi-square test for independence. The average window size choice was large: 45 percent for the family room wall and 34 percent for the living room wall. View was ranked as the most important function of the family room window over sunlight, ventilation, and decoration and was correlated with large window size choice. The living room window's most important function was seen as decorative and this correlated with smaller window size choices.

McRoberts, C. K. 1973. *An instrument which may be used by an interior designer in selecting accessories for the home*. M.S. Thesis. Iowa State University: Ames, IA.

It is the author's belief that it is not enough that an Interior Designer choose accessories that relate well to the interior and are aesthetically pleasing. The Interior Designer must be aware that the accessories are a most meaningful and personal element in the interior, and that understanding the influences in the selection of utmost importance. The purpose of the present study is directed toward the development of an education tool that might be useful to the Interior Designer and the client as they select meaningful accessories for the home. This instrument consisted of four parts: the interview instrument, the observation guide, a check sheet of opposite adjective and photographs. The case study method was used to evaluate the effectiveness of the instrument. The check sheet was given to ten Interior Designers in the midwest region for their evaluation. All of the Interior Designers felt that they could make the choices without the aid of the check sheet. Some of them felt it unnecessary to involve the client in these decisions and failed to recognize the value of the check sheet as an educational tool to improve the level of aesthetic appreciation of the client. Although the check sheet was not submitted to students, it is hoped that the student of Interior Design will find this study useful as a guide in helping him to personalize and humanize the selection of accessories for a client.

McTavish, J. 1978. *Housing problems: Design of a scaling instrument for measurement of degree of negative affect*. M. S. Thesis. University of Minnesota: Minneapolis, MN.

A multi-dimensional scaling instrument was developed for use with a computer contextual analysis program to measure the degree of intensity of negative affect that housing related problems elicit. 884 cases from 100 sources (largely literary) form a broad range of settings were used. The resulting dictionary of 80,000 words is divided into 64 categories of like dimensional characteristics and the ordering of these categories of like dimensional characteristics and the ordering of these categories into 6 levels of negative affect.

Memken, J. A. 1981. *Factors which lead to satisfaction with a government-sponsored housing rehabilitation program*. M.S. Thesis. Iowa State University: Ames, IA.

One hundred households were surveyed to obtain participants' perceptions of a government-sponsored housing rehabilitation program. Exogenous variables included demographic data, the amount of the rehabilitation grant or loan, and knowledge of construction skills. The independent variables were analyzed in relation to the fulfillment of basic housing needs, the reason each respondent gave for participation, and overall program satisfaction. It was hypothesized that individual exogenous variables would

have direct influence on the depend variables, and that program satisfaction was a direct determinant of overall program success. The amount of the grant or loan was positively related to the respondents' perception of fulfillment of basic housing needs. Length of residence had a moderately strong relationship with program satisfaction. Program satisfaction was positively related to program success. Although most of the respondents were satisfied with the housing rehabilitation program on the whole, questions related to the project specifically indicate otherwise. Participants agreed to being satisfied with the housing rehabilitation program, but expressed a great deal of dissatisfaction about various aspects of the program as poor workmanship, low-quality materials, and the length of time involved in completing the rehabilitation project.

Miller, C. S. 1980. *Residential electrical energy management. Relationships among measures of selected energy concepts, attitudes and behavioral intentions*. M. S. Thesis. The Ohio State University: Columbus, OH.

Knowledge of selected applications of electricity in the home attitudes about individual effectiveness on the energy situation and indications of willingness of households to change behaviors were examined with a sample of 273 home managers living within a 100-mile radius of Columbus, Ohio. nearly 40% of the respondents were employed outside the home and 54.5% were urban residents. Pearson product-moment correlation coefficients obtained for inter-relationships among knowledge, attitude, and behavioral intention scores were not significant at the 0.05 level of probability, but chi-square values were significant for knowledge score and age, family location, and electric company serving the family. Income and education were significantly related to attitude about individual effectiveness on the energy situation. Relationships between sample characteristics and behavioral intention score were not significant.

Niemeyer, S. M. 1982. *Constraining factors in the propensity to conserve energy: The effects of predispositions and resources*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis is to analyze the determinants of the propensity to conserve energy. Can energy conservation behavior be attributed to differing resource constraints or psychological predispositions? The sample is a systematic random sample of 197 households in Fort Dodge, Iowa, taken from December, 1981 to March, 1982. The key to the analysis is whether (1) belief in the energy problem, (2) energy related features of the dwelling and (3) energy satisfaction, intervene in the relationship between the propensity to engage in energy-conserving behavior and resources and predispositions. Energy conditions of the dwelling are predictive of satisfaction and the adjustment propensities when the constraints and predispositions are controlled. Belief, energy satisfaction, and energy conditions of the dwelling intervene between the propensity to engage in energy adjustment behavior and selected resource and predisposition constraints. Constraining factors include household income, home ownership, education, age, and sex of the household head, subjective economic constraints, personal control, responsibility, and expectations. The findings support the idea that specific predispositional and resource constraints explain specific behavioral intent. The analysis supports the use of the housing adjustment model (Morris & Winter, 1978) as a general model that can be applied to specific adjustment behavior.

Nikki, J. B. 1976. *User evaluation of a suburban housing environment*. M. S. Thesis. University of Missouri: Columbus, MO.

An exploratory study was conducted in a suburban neighborhood for the purpose of determining what adoption, if any, occupants had made to the interior and exterior spaces of their housing environment, in accordance with the demands of their family's life style, stage in the life style, stage in the life cycle, and socio-economics status. Thirty-three residents were interviewed, and their houses and neighborhood were observed. Adaptations and changes of interior spaces were recorded on a basic floor plan used during the interview sessions. Observations of exterior spaces were recorded on grid sheets. The results, tabulated using simple percentages, indicated the following adoptions were made most frequently: finishing the basement and adding a patio or sundeck. Recommendations for further study were proposed.

Peters, C. A. 1974. *Heat distribution and heating efficiency in selected pans on conventional and glass-ceramic surfaced electric range units*. M.S. Thesis. The Ohio State University: Columbus, OH.

Performance of a conventional electric and two smooth-top electric ranges with five 1 1/2-quart

saucepans selected for representativeness of material and conformation was observed during heating with mediums of flour-fat, water, and oil in order to obtain answers to questions about efficiency and heat distribution. Color photographs taken of the browning patterns of the flour-fat mixture were evaluated by a five member panel for evenness of browning on the pan bottom. Variables of time, electricity, heating efficiency, and temperature pattern were analyzed for heat-up, maintenance, and cool-down to specified temperatures for the water and oil over specific time periods. In a Turkey multiple comparison test, the conventional electric range heated significantly faster and more efficiently ( $p < 0.05$ ) than the smooth-top ranges. A stainless steel pan with aluminum-clad bottom heated the most efficiently, rapidly, and evenly on all ranges. Claims by one of the range manufactures that special pans are needed for surface cooking were not supported in this study. For best heating efficiency and most even heat distribution, a pan with high thermal conductivity, straight sides and flat bottom was desirable.

Peterson, M. R. 1973. *Age segregated and age integrated public housing for the elderly*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

A survey of 40 elderly persons living in age segregated and age integrated public housing covering biographic, demographic and attitudinal information showed that in age segregated housing there was significantly greater satisfaction, more positive concepts of physical and mental health, and more active social life than in age integrated housing.

Pfeil, A. C. 1982. *Utensil emissivity effects in the bi-radiant oven*. M.S. Thesis. Purdue University: West Lafayette, IN.

In an effort to minimize the energy consumption of conventional ovens, a bi-radiant oven has been developed. This oven features two low-wattage elements and reflective walls that minimize the radiant heat consumption within the oven.

The use of highly absorptive utensils in the oven further increases the energy efficiency of the oven. This is accomplished by the use of utensils that absorb large amounts of the irradiation incident on its surfaces. Acceptable leavened products are produced by the balancing of irradiation levels to the upper and lower surfaces of the product and utensil. This is accomplished by independently altering the power input to the upper and lower elements.

With the ability to alter and balance the irradiation levels incident upon utensil and product surfaces, it is possible to produce acceptable products in utensils with relatively low absorptives and high masses. This will alter the energy consumption. The objective of this project was to select and analyze the irradiation levels in a bi-radiant oven that produce acceptable leavened products when using utensils of various materials and finishes.

The different utensil materials and finishes selected were a black aluminum, black steel, granite, silicone on steel, heat resistant glass, reflective aluminum and tin coated steel. Estimated upper and lower power levels were used, and cakes were baked in the utensil to determine the acceptability of the various irradiation levels.

The results indicated that acceptable cakes were produced in all of the selected utensils by using the estimated irradiation levels. Higher irradiation levels on the lower surface of the cakes were necessary when using the two utensils, reflective aluminum and tin coated steel, that had low emissivities. Higher irradiation levels on both the upper and lower surfaces were required when using the heat resistant glass utensil due to its large mass and high emissivity. More energy was consumed when using the higher irradiation levels. A prediction model was developed that predicts appropriate irradiation levels for any utensil where emissivity, mass and specific heat are known.

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Pohlman, L. L. W. 1976. *The restoration process: the study of the farm house, Iowa State University*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this study was to examine the process of restoration of the first dwelling on the Iowa State College and Model Farm site, to relate the preservation and restoration of this building to broader scope of historic restoration and preservation, and to document the history of this early structure named the Farm House. The study proceeded by reviewing the development of historic preservation to provide a background relationship

between the national preservation movement and the restoration and preservation of the Farm House. According to available information, the study then described the early history of the Farm House, the original structure, and its later exterior and interior modifications. The study then documented the restoration process of the Farm House, which was being conducted under the guidance of an official University committee after the site was designated a National Historic Landmark. This study is not definitive, with the arbitrary termination date being July, 1975. At that time the restoration process of the Farm House was continuing.

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Prentice, M. M. 1977. *Community size, housing characteristics, and housing satisfaction*. M.S. Thesis. Iowa State University: Ames, IA.

The concepts underlying this thesis involve: differences in housing characteristics among households in communities of different sizes and the relative levels of residential satisfaction, and the relationships between tenure, value, and structural characteristics of houses and residential satisfaction. An extensive survey of 1267 households was conducted in 1975 and 1976 by trained interviewers. Analysis indicated that community size was significantly related to the following characteristics after controlling for exogenous variables: single-family home ownership, number of stories in the structure, completeness of insulation, neighborhood satisfaction, and housing satisfaction. Seven variables exhibited statistically significant relationships with housing satisfaction. However, completeness of insulation and neighborhood satisfaction were the only two factors that appeared as intervening variables in covariance analysis between the community size dummies and housing satisfaction. Analysis of housing satisfaction indicated that the hypothesized casual model was a fairly effective measure for predicting satisfaction levels. Further, the pattern evident in the data with respect to housing as it relates to community size fits the conceptualization of a rural-urban continuum in that community size affected the kinds of housing that existed and the level of satisfaction with that housing.

Rahe, L. W. 1979. *Furniture in the Carl Procopius Strehly House: Hermann, Missouri*. M.S. Thesis. University of Missouri: Columbia, MO.

The purpose of this study was to investigate the presence of traditional German design in furniture acquired by immigrants in a mid-nineteenth century, Missouri German colony. Preliminary investigation included the history of German emigration; of Hermann, Missouri; of the Carl Procopius Strehly family. Research into furniture and design sources provided a checklist of cabinet-makers and furniture dealers in nineteenth century Hermann and Gasconade County, Missouri. The furniture assemblage accumulated by the Strehlys between 1843 and 1880 remains essentially intact today. Each piece was analyzed according to date, style, function, material, and construction. Visual comparison for each piece was drawn from nineteenth century German, United States, Missouri German immigrant, and Texas German immigrant furniture. Through analysis, each piece was judged German or American in character. The majority are of American early factory production and design. Furniture purchased by nineteenth century German immigrants in Missouri, represented by the Strehly assemblage, was in then-current American modes. Availability and cheapness of American factory furniture appears to have lured immigrant buyers from German-American cabinet makers who produced traditional forms.

Redick, S. 1982. *The effectiveness of an extension short-term microwave meat cookery workshop on the knowledge and practices of the participants*. M.S. Thesis. The Ohio State University: Columbus, OH.

This study focused on the ever-increasing concern for the effectiveness of short-term workshops as a method of education. The research design chosen for this study was quasi-experimental. The independent variable were the treatment and the descriptive factors, while the dependent variables were the knowledge test scores and information obtained on the practices and utilization inventory. An independent t-test was calculated using the knowledge test scores of those who attended the workshop and knowledge test scores of those who did not. Findings indicated there was a significant difference between the two. The z-score determined there was no significant difference in the proportion of persons who utilize the microwave oven compared to conventional methods to prepare specified meat dishes. A z-score showed there was no significant difference between pre- and post-inventory scores of respondents who prepared specified meat dishes in the microwave oven. Further findings indicated that the preparation of whole poultry and meat casserole dishes increased significantly. An independent t-test was used to calculate the relationship between pre- and post-workshop average daily use of the microwave oven by family members. Findings indicated no significant difference exists except in the case of the female adult. An implication of this study is that the short-term Cooperative Extension Service workshop was an effective teaching method for

increasing knowledge levels of microwave meat cookery.

Romeiro, E. M. C. 1980. *Utilization of surface units of electric ranges in relation to the range and kitchen design and the physical characteristics of the user*. M. S. Thesis. The Ohio State University: Columbus, OH.

Utilization of surface units of electric ranges was studied in relation to selected physical characteristics of users, user preferences, and range and kitchen designs. Data were obtained from 49 women in Crawford County, Ohio, through personal interviews and records kept by participants. Data were tabulated as frequencies and the chi-square test was used in testing hypotheses. Participants indicated a preference for a given unit or group of two units but actual use was not consistent with preference. Respondents over 35 years of age used the units located in the front and on the left side of the range more frequently while women under 35 years showed no special preference for either a given unit or for a group of them. No significant relationship was found between height of participants and preference of use of units. About 50% of the participants who had a thermostatically-controlled unit used it. Utensil size was related to size of unit used: the larger the pan, the more likely that the larger unit would be used. This finding is consistent with the fact that the homemakers most frequently gave pan size as the reason for their preference for a given unit or pair of units. It was not possible to test relationships between work surface and storage features surrounding the range and preference for or use of units because of the number of cells in contingency tables with zero or low frequencies.

Rosek, P. A. 1976. *Color in the personal environment: its influence on perceptions and expected behavior*. M.S. Thesis. Purdue University: West Lafayette, IN

It was hypothesized that the color of one's environment influences others' perceptions of oneself. The sample included 65 females. The room type and sex of the occupant were manipulated. Significant differences between males and females were found for ratings of happiness, friendliness and femininity, and also femininity (of the room) according to hue.

Pohlman, B. W. 1982. *User responses to specified environmental variables in solar energy houses*. M.S. Thesis. Iowa State University: Ames, IA.

The objectives are to: 1) determine through survey questionnaires and personal interviews the responses of lowa solar home users to the environmental variables of temperature, ventilation, relative humidity, light, and sound; 2) investigate the factors responsible for the users' responses to the variables of temperature, ventilation, relative humidity, light, and sound, and 3) investigate the behavioral adjustments that may have been made to facilitate optimum performance of the design features. The case study method of research was employed. The participants are 14 Iowa families who owned and had lived in solar homes at least during the heating season of December, 1979 to March, 1980, and whose homes were designed for at least a 25 to 50 percent dependency on solar energy for space heating. Information was acquired during April and May, 1980 with two survey instruments which were developed and mailed to participants, and by home visits. Information gathered was presented in a narrative form for each case study and for the group of cases. Similarities and differences between cases were sought to allow comparison and differentiation of unique and common factors.

Sands, S.M. 1979. *Population change due to housing renovation in St. Paul's Ramsey Hill Area*. M.S. Thesis. University of Minnesota: Minneapolis, MN.

This study was undertaken to determine the extent and nature of population change due to housing renovation in nine blocks of St. Paul's Ramsey Hill area. Interviews were held with 54 former and 71 current residents of properties that had undergone change in ownership since 1970 and substantial renovation in conjunction with that change. Renovators are younger, more highly educated, have higher annual income and are more likely to be owners than former residents. Most resided in the city before their present homes. Significantly, the proportion of properties occupied by owners rather than renters increased dramatically. Most of the former residents relocated within St. Paul. Just over half left their homes involuntarily, all were renters. Most of the movers felt the physical condition of their present housing was as good or better than their past housing, and most preferred their present over their past housing or had no preference.

Schmidtke, C. P. 1981. *Malimo and foam-backed drapery fabrics: Physical evaluation*. M. S. Thesis. The Ohio State University: Columbus, OH.

Six Malimo and three foam-backed drapery fabrics were evaluated for dimensional stability, flammability, strength and colorfastness. Dimensional stability was evaluated after three cleaning methods: laundering, professional and coin-operated dry cleaning. Analysis of Variance and Duncan's Multiple Range Test were used to evaluate

differences between cleaning methods and fabrics. Differences were not significant for cleaning method in all cases, but professional dry cleaning tended to be superior. Shrinkage for fabrics approximated or was used for outer drapery fabrics and linings and for drapery/lining pairs. Most of the fabrics were totally consumed during testing, both individually and when paired. Strength was evaluated by abrasion resistance and bursting strength. Most of the Malimo fabrics had little abrasion resistance or strength, but the foam-backed fabrics were strong and resistant to abrasion. Difficulties were encountered in strength testing due to abrasion of loosely twisted decorative yarns and shifting of yarns during bursting of Malimo fabrics. Fabrics were generally colorfast to light and burnt gas fumes. Although differing in fiber content, weight and design the Malimo fabrics were similar in performance as were foam-backed drapery fabrics.

Shonrock, D. D. 1975. *Human values related to achievement of home improvements by use of market and nonmarket labor*. M.S. Thesis. Iowa State University: Ames, IA.

Explored were the concept of human values, whether they can be adequately measured, and how they affect choices made concerning home improvements.

Shuter, E. K. 1980. *A study of the effects on energy conservation of selected consumer practices using the range surface unit*. M.S. Thesis. Purdue University: West Lafayette, IN.

Little if any present literature contains information about the potential the consumer has to conserve energy by using proper surface top cooking techniques. The objective of this study was to analyze this potential. Energy conservation as well as a reduction in time and moisture loss were studied.

Three food products were included in the study: potatoes, pasta, and green beans. Consumer practices which were used as input variables included: two water amounts, using a lid versus using no lid, and two surface unit setting levels. Two different product amounts were also incorporated.

Using thirty-two combinations of the input variables, five dependent variables were monitored. Most important of the dependent variables was total energy used. Other dependent variables included: energy and time needed to raise the water temperature to 97 C, total time to cook the food product and moisture loss. The results indicated a potential savings in energy for the individual consumer of over 55 percent if a consumer would use a lid when preparing a food product on the range surface unit. As much as a 50 percent reduction in energy use was indicated if a small amount of water was used. As much as 35 percent was saved if a low setting was used instead of a higher setting.



Spooner, S. 1976. *Furnishings in the George Caleb Bingham House--Arrow Rock, Missouri*. M.S. Thesis. University of Missouri: Columbia, MO

The purpose of this study was to research the furnishings in the George Caleb Bingham House in Arrow Rock, Missouri, to determine the appropriateness of the selected furnishings presently in the house in terms of period and style, the functionality of these furnishings for the Bingham family, and the availability to a resident of Arrow Rock, Missouri, during the period of Bingham's occupancy in the house. As a Nationally Historic Site open to the public, the Bingham House should be an authentic presentation in order to adequately portray to the public, as an educational device, our national heritage--specifically that of a small Missouri River town on the Lewis and Clark Trail. The hypothesis tested was that the furnishings in the house are an accurate representation of what the Bingham family might have used. The historical method of research was used due to the nature of the problem. With a few minor changes, the Bingham House was found to be a quite accurate presentation of the home in which the Missouri Artist might have lived.

Table, S. M. 1970. *A comparison of families' attitudes regarding activities, stress, and adaptation in housing*. M.S. Thesis. Purdue University: West Lafayette, IN.

The purpose of this thesis is to examine the relationship between physical characteristics of family living space, stages in the family life cycle, and family social environment. fifty families were randomly selected, and interviewed, within an eight-week period. Husband and wife each were required to complete the Family Attitude Survey (Nelson, and Inman, 1977) and without consultation with one another. Analyses of variance revealed a significant difference between families living in different dwellings. The family Attitudes Survey (FAS) results revealed a significant difference in all environment attitudes and some adaptations among families in a single-dwelling and families in a multi-dwelling. Specifically families in a multi-dwelling viewed their homes as "safe" but "depressing", "indifferent", "hemmed in", and "crowded". Families living in a single-dwelling described their homes as "happy", "comfortable", and "aesthetically pleasing".

Thee, R. J. 1973. *Approaches to measurement of housing environments in rural nonfarm communities*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis was to develop a personal interview instrument as a counterpart to those used in consumer surveys to assess housing environments in rural non farm communities. Specifically, the instrument was developed to ascertain ways in which major participants in the local housing process view the housing situation in their respective communities. Major participants were identified as business firms, government officials, and facilitating agencies and

organizations, as well as consumers and producers of housing in the household. Data from 1970 census of housing and population, and from a recent survey, were used to characterize families with children in small towns of southwest Iowa and the dwellings they occupy. These data and their significant relationships, along with instruments used in several other housing surveys, were used to develop the content and structure of a preliminary instrument for interviewing realtors, bankers and savings and loan administrators, suppliers of materials and related services, service and repair technicians, and leaders of voluntary organizations. After pretests in these communities, the initial instrument was revised for further use and evaluation as a means of assessing housing stock, housing social process in small towns, and participants' views of housing as related to stability and growth in the community.

Volker, C. B. 1979. *Household production activities related to food and housing: Consumer expenditures, savings, norms, and satisfaction*. M. S. Thesis. Iowa State University: Ames, IA.

The purpose of the thesis was to examine the relationships between household production and expenditures for commodities, the family's reported comparison of its consumption to a norm, satisfaction with commodities consumed, and money put into savings. Two parallel models were tested. The first was concerned with food, the second with housing. Pearson product moment correlations, cross tabulations and multiple regression in a path analysis were used. Households that do more household production of food tend to have lower food expenditures and to report their food to be of larger quantity and variety. Food expenditures are positively related to reported comparison and satisfaction with food, and negatively related to money put into savings. Housing-related household production is not significantly related to housing expenditures, reported comparison to a norm, satisfaction with housing, or to savings. Expenditures for housing are positively related to reported comparison, satisfaction with housing, and money put into savings. The findings suggest that it may not be valid to examine household production function. differences in commodities, such as the durable-nondurable aspects, costs of production, and the urgency of need for various commodities can influence household decisions about the performance of household production activities.

Voorhees, J. M. 1980. *A human factors approach to housing design for the elderly*. M.S. Thesis. Iowa State University: Ames, IA.

A human factors approach, which focuses upon human performance as determined by the man/environment interface, was utilized to evaluate the quality of design features of existing housing for the elderly. In case studies of 24 elderly persons aged 55 and older, subjective and objective information was obtained with regard to the design of their homes. Individuals were aware of problems related to independent living but did not identify specific factors which contributed to or caused them. Major problem areas found in the homes of the participants included inadequate lighting (especially in high activity areas), and lack of auditory signals in areas of high activity (especially in homes of individuals aged 65 and older) and work spaces which did not minimize energy expenditure or reduce the need for motions requiring reaching, bending, and stooping in kitchens and baths. A lack of safety features including grab bars and non-skid flooring in the baths, and a fire extinguisher and smoke alarm were found. Problems in performing activities related to care, repair, and maintenance of both exterior and interior were reported. A greater concern for comfort in contrast to cost was found in relation to the management of utilities. Positive design features found in these homes included a bath on the main floor located near the kitchen and living areas, a kitchen located near living areas which included an eating area.

Warren, R. D. 1973. *Residential mobility and refrigerator moving decisions*. M. S. Thesis. The Ohio State University: Columbus, OH.

The purpose of this study was to determine if residentially mobile families make the decision to move or replace their refrigerator in an open or closed system of decision-making. Both economic/rational and environmental/behavioral variables were tested for significance in influencing the decision. A sample of 150 home owners in Franklin County, Ohio were selected from a source listing deeds. A total of 57 households completed the telephone interview of which 46 moved and 11 replaced the refrigerator. Chi square analysis for independent samples was used to test conformity of the households to a cost-based decision model. This same statistical analysis was used to test each economic and environmental variable for significance in influencing the refrigerator moving decision. Of the three economic/rational variables used to test a closed system of decision-making, the cost-based decision model and refrigerator replacement cost were significant in influencing the refrigerator moving decision. Of the three environmental/behavioral variables tested for compliance with an open system of decision-making, only satisfaction with the refrigerator owned prior to moving influenced the refrigerator moving decision. Variables indicative of a closed and open system of decision-making influenced the refrigerator moving decision. It was concluded that mobile families make

decisions in both open and closed systems of decision-making when choosing to move or replace a refrigerator.

Wolf, J. R. K. 1973. *Household textiles consumption by mid-western farm families: Selected aspects*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this research was to aid development of a descriptive model of the process of household textiles consumption by testing hypotheses about factors that affect the process. Data were collected by personal interview from 510 farm families in Iowa, Nebraska, and Illinois in the summer of 1971. Multiple linear regression equations were used to examine the relationships between family and housing characteristics and aspects of the consumption process: inventories, acquisitions and care practices of household textile items. Income, family size, family composition, age of wife, schooling of wife, the number weeks the wife worked, and housing tenure were found to be related to the care practices of household acquisitions of selected household textile items were income, family size, family composition, and selected housing factors. Limited analysis was done concerning the relationship between inventory and acquisition for selected items. Income class, a ratio of income to food cost, and a level of consumption index were used to estimate the well-being of each family. The analysis indicated that income reflected family well-being about as well as either of the other indicators.

Yahaya, N. 1979. *Room deficits and housing satisfaction of low income families in Southeastern Ohio*. M.S. Thesis. The Ohio State University: Columbus, OH.

This study examined the effect of total room deficits (bedroom deficit, family room deficit, bathroom deficit and dining room deficit) on overall housing satisfaction and the effect of bedroom deficit on bedroom satisfaction. Data were obtained by interviews with 94 low income household heads in southeastern Ohio. Pearson correlation coefficients, regression coefficients and partial correlation coefficients were utilized in the analysis of relationships among variables. The results indicated room deficits serve as an important indicator ( $r = -0.35$ ) of level of housing satisfaction. It was concluded that as the number of total room deficits increased, overall housing satisfaction decreased and as bedroom deficits increased, satisfaction with the number of bedrooms decreased. Total family income, housing tenure, and age of household head did not significantly affect the relationship between total room deficits and overall housing satisfaction. A significant although low ( $r = -0.17$ ) correlation existed between overall housing satisfaction and the number of people living in the current dwelling. Partial correlations between overall housing satisfaction and total room deficits were significant ( $p < 0.001$ ) with the effect due to the control variables removed and remained in the range between  $r = -0.30$  and  $r = -0.38$ .

Yeh, G. Y. W. 1974. *An original interior design for a kitchen based on the activity performance of the homemaker of Taiwan*. M.S. Thesis. Iowa State University: Ames, IA.

The purpose of this thesis was to study the activities of the Chinese homemaker in the kitchen, and to design an attractive kitchen that is functional for the life style of the Chinese homemaker. A questionnaire was sent to twenty homemaker in Taipei, Taiwan, Republic of China, to collect information concerning the conditions, needs, and family situations which formed some basis for the final design of the kitchen in the study. Construction, health, and safety standards based on the current requirements for the country of Taiwan, Republic of China, were obtained from the Taiwan Public Construction Bureau and the Taipei Development Commission of International Economic Cooperation. Finally an apartment kitchen eight by fourteen feet was chosen for the design. This kitchen is believed to be the average size for a Chinese family of six, the modal number of persons in the family according to the information received. After designing this kitchen the author feels that there are differences between American and Chinese life styles, food, and its preparation. However the basic design principles are similar in minimizing the working triangles, needs for storage, and working counter space in the small apartment kitchen in both cases.

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Yockey, K. M. 1976. *Residential alterations and additions and housing-neighborhood satisfaction*. M.S. Thesis. Iowa State University: Ames, IA.

This thesis examines the importance of space deficits, housing satisfaction, and neighborhood satisfaction in influencing the expectation of making residential alterations and additions, and the effects of having performed residential alterations and additions on subsequent overall housing satisfaction. Data were collected by personal interviews with 455 households during the spring of 1975 in Fort Dodge, Iowa, selected by means of a stratified random sample of the entire city based on the city's 39 enumeration districts. A final sample was weighted for underenumeration in some districts resulting in a weighted sample of 530 households. Relationships among the variables were examined by the use of multiple linear regression. The results indicated that residential alterations serve as housing adjustment behavior based primarily on life cycle stage, employment status, and mobility expectations. Social class has little effect on expected alterations but has a significant relationship with crowding and space satisfaction. Neighborhood satisfaction appears to have a minor bearing on residential alterations.

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## OTHER PUBLICATIONS

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Combs, E. R. 1982. Extent of marketplace problems as perceived by solar home owners and solar experts. *Proceedings of the American Council on Consumer Interests*, 38-42.

Marketplace problems experienced by solar consumers can have a negative influence on the overall adoption rate of solar heating systems for homes. It was the purpose of this study to determine the extent of delivery system and solar product-related problems within the marketplace as perceived by those who have purchased solar and those whose work directly involved some aspect of solar. Findings indicate that while both delivery system problems tend to be more serious. Types and extent of marketplace problems do not appear to be related to marketplace location or market segment involved. Solar experts and solar consumers appear to have similar perceptions as to the extent of most marketplace problems.

Combs, E. R., & Tremblay, K. R. Jr. January, 1982. Solar energy: A ray of hope for Nebraska? *Nebraska Municipal Review*, 11-12. Current Municipal Problems.

Data from a random sample of 912 Nebraska households were analyzed in an attempt to understand strategies that might increase the use of solar systems by households. Findings indicate that people think the best way to learn about solar heating systems is to talk with solar home owners and to observe a solar heating system from inside a solar. It is recommended that communities design a program where home owners are encouraged to open their home to the public.

Eichner, M. M. & Morris, E. W. 1983. *Residential energy conservation measures, air quality, exposure to chemicals at work and health*. In J. E. Woods, R. E. Welch, A. P. Feist, and E. D. Fernandes (Eds). Building Energy Management. Ames, IA. Iowa State University Research Foundation.

Social survey data are used to test the hypothesis that residential energy-conservation measures have the effect of reducing air quality in the home and have a subsequent deleterious effect on the health of the residents. A measure of exposure to harsh chemicals at work is tested for its effect on health. Small but detectable amounts of carbon monoxide were found in more than half of the 173 homes surveyed, The levels of CO were higher in homes with unvented kerosene or gas space heaters and homes with smokers present. The effects of residential air quality on health were weak, but exposure to harsh chemicals at work has a strong effect on health.

Gaydos, B. D. & Coveney, A. R. 1979. Mobile homes popular in rural areas. *Ohio Report* 64(4), 54-56.

Gladhart, P. M., Zuiches, J. J., & Morrison, B. M. 1978.

*Impacts of rising prices upon residential energy consumption attitudes, and conservation policy acceptance*. Family Energy Project/Energy Policy in the United States: Social and Behavioral Dimensions. Michigan State University: Lansing, MI.

Objective: Determination of energy demand, including: price and attitudes. Method: Survey (N=264); Findings: A negative price elasticity for total energy consumption was found. Attitudes were found unrelated to consumption levels. Policy acceptance was relate to attitudes and belief.

Inman, M. A. 1981. *Influence of life cycle stage on family social climate and attitudes toward the residential environment*. Microfilm: Educational Resources (ERIC) HEW, National Institute of Education: Washington, DC.

This study examined the relationship between family social climate, family attitudes, and perceptions toward their residential living space in the four stages of the family life cycle. The objectives of the study are based on the assumption that stage of the life cycle can affect attitudes and social climate thus determining whether interpersonal relations between family members are stressful or satisfying. Two questionnaires were used n interviews with 64 Indiana families in all stages of the life cycle. The family social climate questionnaire entitled The Family Environment Scale, (Moos, 1974) included questions that measured family cohesiveness, expressiveness, conflict, independent, achievement, intellectual interests, active-recreational interests, moral-religious attitudes, organization, and control. The Family Space Attitudes Scale (Melson and Inman, 1977) includes rating scales concerning perception of stress, identification of specific stressor, adaptations to the environment, and overall satisfaction with the dwelling environment. Analysis of variance, T-tests, correlation coefficients, and chi-squares were used to test differences among the four stages of the life cycle in respect to their social climate, attitudes and perceptions towards the residential environment. Family stages differed significantly in terms of family attitudes regarding: cohesion, independence, organization, and control. Family stages also had a significant effect on overall satisfaction, perception of stress, and identification of specific stressors. Generally, the results indicate that environmental stressors and family social climate may differ as a function of the family's stage of life cycle.

Inman, M. A., & Melson, G. 1977. Family social environment and activity spaces in married student apartments. *Proceedings of the AAHE Annual Conference*, 63-69.

The purpose of this study was to examine the relationship between the social climate within the family and the use of dwelling space. Fifty-nine families were tested by two questionnaires, the Family Environment Scale and Activity Patterns Inventory. Correlations were calculated between each questionnaire response and results indicated either positive or negative correlations with certain activity locations used by either the husband or wife.

Longstreth, M. E., Coveney, A. R. & Bowers, J. S. Capitalization of energy efficiency in housing prices. Publication NO. 26, *Center for Real Estate Education and Research*, The Ohio State University, Columbus, OH.

Madden, M. E., Combs, E. R., & Madden, C. S. 1981. Home warranty protection: A home buyer's perspective. *American Council on Consumer Interests Proceedings*, 196-200.

While much attention has been focused on the prevalence of post purchase housing defects, little has been focused on buyers' perceptions of probabilities of defects, cost of repair of defects, and legal recourse. This study examines these key variables to help determine how they might impact on home buyer's decision to purchase warranty protection at that time of home purchase.

Melson, G., Inman, M. A., & Kemp, P. 1977. Perceived environmental stress and family functioning in married student families. *Proceedings EDRA 8 Priorities for Environmental Design Research*, 175-181.

Satisfaction, perceived stress and adaptations reported by a sample of similar families in comparable settings are related to perceived family systems characteristics such as cohesiveness, organization and moral/religious orientation. The study confirmed that family functioning is related to environmental perception although direction of effects cannot be inferred. Further research should provide administrators with needed information concerning environmental characteristics which impact family functioning among married students and family variables associated with vulnerability to environmental stress. While conclusions must be qualified in an exploratory study, some implications for the design of university housing for married student families may be drawn. Within their unique environment, student families with children have space needs related to the functions of a) child-rearing, b) spouse relations, c) relating with friends, d) studying, e) household and personal maintenance. In addition, the family unit may feel inadequately insulated (psychologically and literally) from

other neighboring units. Since stress perception and its adverse relation to family functioning is exacerbated with continued residence in such a setting; designers of married student dwellings need to find ways to enhance the residents' sense of "owned space."

Morris, E. W., Winter, M., & Crull, S. R. 1977. *The assessment of housing needs and conditions in small cities and towns of Iowa*. Family Environment Department, Iowa State University: Ames, IA.

The purpose of the research reported in this slim volume is to provide information to those interested in housing needs and housing conditions in nonmetropolitan Iowa. In particular, it was hoped that the data would serve to inform future policy making with respect to housing.

The data is from a sample of 1,267 households in the incorporated communities of Calhoun, Hamilton, Humboldt, Pocahontas, Webster, and Wright counties. Interviews were obtained from residents of all communities with populations over 2,000 and from a sample of the communities under 2,000. Data were analyzed into four community size classes: under 2,000; 2,000-4,999; 4,999-9,999; and over 10,000.

Housing needs were assessed in six different but related ways: (1) demographic and socioeconomic characteristics, (2) current housing characteristics, (3) housing expenditures in relation to income, (4) residential satisfaction, (5) desires and aspirations and (6) an integration of the first five indicators.

These demographic and socioeconomic patterns appear to be the composite result of three types of movement: (1) movement into the area from outside, (2) movement within the area of young families from the larger communities to the smaller, and (3) movement of elderly people from rural areas and small towns to the medium and larger towns. The data indicate that such movements are occurring in part because there is relatively inexpensive single-family housing available for purchase in the smaller communities.

While the majority of families in the area are well served by their housing, there still is a sizable number, over 40%, whose housing needs are not being completely met. These families include those who (1) perceive that their housing has structural defects, (2) have a shortage of bedrooms, (3) are renters but feel they should be owners, or (4) do not live in a single-family dwelling but feel they should. There are other unmet needs that affect smaller numbers of households.

The presence of unmet needs leads to dissatisfaction and plans to move or make changes in the dwelling. The mismatches in the area are such, however, that additional policy decisions leading to potentially new program efforts may be necessary to relieve the dissatisfaction due to the presence of those unmet needs.



Morrison, B. M., Keith, J. G., Zuiches, J. J. 1979. *Impacts on household energy consumption: An empirical study of Michigan families*. Sociopolitical Effects of Energy Use and Policy National Academy of Sciences: Washington, DC.

Objective: Examined conservation practices and potential for conservation of energy. Method: Survey (N=216, 1974; N=264, 1976). Analysis: Mixture of methods. Findings: 50 percent of the sample reported a belief in the energy problem in both years. Daily behaviors and technical conservation measures were reported. Reduction in energy use of 6.3 percent was found from 1974 to 1976.

Morrison, B. M. 1980 *A time series analysis of household energy consumption: 1900-1980*. Human Environment and Design Michigan State University: East Lansing, MI.

Household level of energy consumption data (measured in British thermal units) for a period between 1900 and 1980 [year by year] were compiled for seven major energy sources: fuel wood, bituminous and anthracite coal, electricity, fuel oil, natural gas and liquid gas. Based on the assumption that returning to some of the fuel sources of the past (fuel wood in particular) would allow resolution for some of today's energy problems; evidence is brought to bear in order to test this assumption. The outcome of the analysis represents patterns of, and changes in, energy use demands over the period of eight decades; indicating that over time, energy consumption per household has become more efficient rather than less efficient since the turn of the century.

Morrison, B. M., Knutson, B. 1980. *Residential energy, Michigan family sourcebook: First Edition*. Publication 247-275 Michigan State University: East Lansing, MI.

Objective: To describe patterns of residential energy use from 1972 to 1977. Method: Survey Analysis: Mixture of methods. Findings: All fuel sources (fuel oil, natural gas, coal, LPG) have been reduced, except electricity which increased by 13 percent since 1972.

Morrison, B. M. 1977. *Socio-physical factors affecting energy consumption in single family dwellings: An empirical test of a human ecosystem model*. WBS Special Publication 473 Research and Innovation in the Building Regulatory Process.

Objectives: To study the relationship between socio-physical factors, belief the energy problem and energy consumption in single family detached dwellings. Method: Survey (N=97) Analysis: Multiple regression and recursive path analysis. Findings: The number of persons, major appliances, and rooms in a dwelling unit

contributed most to the variance explained. Belief in the reality of the energy problem was not found to effect a change in energy consumption patterns.

Recchie, M.R. & Coveney, A. R. 1980. Housing the elderly: The contribution of safety and independence facilities. *Ohio Report*, 65(1), 3-5.

No abstract available.

Rudd, N. M. & Coveney, A. R. 1978. Employment and housing: Current situations and aspirations of unemployed and underemployed men in Southeast Ohio: A summary of findings. *Research Bulletin 1102*, Ohio Agricultural Research and Development Center: Wooster, OH.

Rudd, N. M. & Coveney, A. R. Employment and housing: current situations and aspirations of unemployed and underemployed men in Southeast Ohio. *Research Bulletin 1103*, Ohio Agricultural Research and Development Center, Wooster, OH.

Rudd, N. M. & Coveney, A. R. 1978. Employment and housing problems in Southeast Ohio. *Ohio Report*, 63(4), 54-56.

No abstract available.

Stoekeler, H. S. 1980. Family housing. *Quality of life study series*. Bulletin Univ. of Minn. Agr. Exp. Sta. Bul. 524 St. Paul, MN.

Housing sentiments of 200 families were studied in relation to demographic, socioeconomic, and housing characteristics, adjustment behaviors, and global family and quality of life satisfactions to identify relationships of levels of satisfaction and family characteristics.

Stoekeler, H. S. 1978. *Users' perceptions of aesthetic quality of outside of home housing satisfaction indicators*. Quality of Life Study Series Univ. of Minn. Agr. Exp. Sta. (miscellaneous pub. 166) University of Minnesota Agricultural Experiment Station: St. Paul, MN.

An illustrated report of the methodology and findings about home exteriors which appear in an exhibit in the Goldstein Gallery, College of Home Economics, at the 1978 Annual Conference of the American Association of Housing Educators at the University of Minnesota. The framework gave visual meaning to users' verbal evaluations of their perceptions and provided a model for further visual analysis of characteristics which may be useful as indicators of housing satisfaction.

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