HOMEOWNER SATISFACTIONS OF MANUFACTURED
HOUSES VERSUS CONVENTIONAL HOUSES

by

GLEND A NELL MOORE, B.S.

A THESIS

IN

HOME AND FAMILY LIFE

Submitted to the Graduate Faculty
of Texas Tech University in
Partial Fulfillment of
the Requirements for
the Degree of

MASTER OF SCIENCE

IN

HOME ECONOMICS

Approved

May 1976

C
AC
805
T3
1976
No 72
Cop. 2

ACKNOWLEDGMENTS

I would like to express my deepest appreciation to the American Home Economics Association, especially to members of the Home Economics in Business Section, for the honor of receiving the 1975-76 HEIB Section Fellowship. I wish to thank the Texas Agricultural Extension Service for allowing my leave of absence for professional improvement study leave. Without the financial, professional, and personal support of these groups, this research would not have been possible.

I am especially grateful to Dr. Mary Wallace Crocker, Chairman of my thesis committee, for her patience, encouragement, and guidance. I would also like to thank Dr. E. Carolyn Ater and Dr. Joan Kelly, other members of my committee, for their most helpful comments and advice.

I want to thank members of the Lubbock Home Builders Association and the homeowners who cooperated with this study.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	ii
LIST OF TABLES	v
Chapter	
I. INTRODUCTION	1
Statement of the Problem	2
Purpose of the Study	2
Need for the Study	4
Scope and Limitations of the Study	5
Hypotheses	5
Definition of Terms	6
II. REVIEW OF LITERATURE	9
Manufactured Housing	9
Housing Satisfaction	13
Summary	29
III. METHODS AND PROCEDURES	32
Selection of the Sample	32
The Manufactured Houses	34
The Instrument	35
Pretesting the Instrument	37
Collection of the Data	37
Treatment of the Data	38

Chapter

IV. ANALYSIS AND INTERPRETATION OF DATA	39
Description of the Sample	39
Evaluation of Hypotheses	42
Hypothesis Number One	42
Hypothesis Number Two	44
Summary of Hypothesis Findings	62
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	64
Summary	64
Conclusions	67
Recommendations	68
LIST OF REFERENCES	71
APPENDICES	76

LIST OF TABLES

Table

1. Race, Age, and Sex of Homeowners of Manufactured and Conventional Houses	40
2. Family composition, Family income, Occupation, and Educational background of Homeowners of Manufactured and Conventional Houses	41
3. Previous housing, Housing tenure, Residence background of Homeowners of Manufactured and Conventional Houses	43
4. Summary of Chi-square Values for Demographic Characteristics	44
5. Mean Satisfaction Scores for Homeowners of Manufactured and Conventional Houses with Price Subgroups . . .	46
6. Housing Features Liked Best and Least	48
7. Improvements made by Homeowners to the Home Environment	49
8. Desired Changes in Construction	50
9. Desired Changes in Exterior Design	51
10. Desired Changes in Floor Plan	52
11. Desired Changes in Group Living Spaces	53
12. Desired Changes in Private Living Spaces	54
13. Desired Changes in Support Spaces	55
14. Desired Changes in the Electrical System	56
15. Desired Changes in Selected Support Systems	57
16. Correlations Between Satisfactions of Homeowners of Manufactured and Conventional Houses	59

Table

17.	Varimax Rotated Factor Matrix	60
18.	Lighting Satisfactions Associated with Manufac- tured and Conventional Houses	61
19.	Ranking of Total Mean Scores: Method of Construction Controlled	63

CHAPTER I

INTRODUCTION

The national housing goal, established by the Housing Act of 1949, expressed the need for a "decent home and suitable living environment for every American family." (1:413) Congress reaffirmed this goal in 1968 with the Housing and Urban Development Act. This newer act explicitly stated that America's housing requirement for the next ten years would have to include at least the construction or rehabilitation of twenty-six million units, six million to be specifically for low and moderate income families. (2:476)

Several obstacles have created a serious lag in housing production and hence, attainment of the goals. Major shortages have existed recently in the availability of mortgage financing, building supplies, and skilled labor. High costs in general along with the inability of traditional home-building methods to produce structures needed by the population have been the main barriers. (3:2)

In view of these constraints, Pynoos (4:7), Fisher (5:vii), Downs (6:36), and others (7:86) have stated the existing mandates are unrealistic, impractical, and inappropriate. At the same time, Davidson (3:3), Reidelbach (8:15), Dietz (9:100), and Grubb (10:1) believe the only possible solution to the current housing shortage and eventual fulfillment of the housing goal is offered

in an industrialized, or manufactured, approach to housing construction.

Statement of the Problem

While the national demand for housing is rapidly increasing, the housing consumer is wanting more than just shelter when creating a home environment. Consumers are demanding comfortable, efficient, functional, safe, and attractive housing. (10:22)

Manufactured homes are assuming an increasingly more important role within the housing market. In spite of aforementioned barriers and constraints, overall production and sales have continued to magnify during the 1970's. The industry recognizes that to reach their fullest potential in the "subdivision market," they must make improvements in the quality of their product and sales techniques. (11:71)

As the industry grows and improves its products and marketing techniques, consumers will need to know more about manufactured houses. Hence, the problem of the study was to survey and analyze homeowner satisfactions with single-family detached dwellings: the manufactured versus the conventionally built, frequently referred to as the stick built house.

Purpose of the Study

This study was conducted for the purpose of comparing homeowner satisfactions with the method of house construction controlled: manufactured and conventional. Specifically, this research is

designed to disclose answers to the following questions:

1. Do any significant differences exist between homeowners satisfactions with manufactured units versus conventional units when demographic and selected characteristics are considered?

- a. race,
- b. age,
- c. sex,
- d. family composition,
- e. family income,
- f. occupation,
- g. educational background,
- h. previous housing,
- i. housing tenure, and
- j. residence background.

2. Do any significant differences exist between homeowner satisfactions with manufactured units and conventional units when housing design features are compared?

- a. construction,
- b. exterior design,
- c. floor plan,
- d. group living spaces,*
- e. private living spaces,

*The shelter space categories are the same as those outlined by Fulkner in Inside Today's Home. (12:vi)

- f. support spaces, and
- g. support systems.

Need for the Study

Interest in the manufactured home industry has been stimulated by (1) the need for and demand of housing in all price ranges, (2) the advances in technology, and (3) the determination of many groups to streamline housing production in an effort to provide units in greater quantities at various prices. Whereas the mobile home--a completely manufactured house--appeals to many consumers, there are others who desire and can afford a more permanent and usually a more costly single dwelling unit. Studies have been made regarding mobile homes; however, its relative, the manufactured home attached permanently to its site, may be termed as a newcomer to the field of housing research.

Since the manufactured house will probably become a permanent silhouette on future streetscapes, consumers who may elect to purchase these units may be interested in knowing how manufactured homes fared when analyzed by homeowners. Do homeowners like or dislike the housing which originated and was assembled in a factory rather than constructed of components that were brought to the house site? How do their satisfactions compare with satisfactions of persons who occupy conventionally constructed units?

Scope and Limitations of the Study

The study was limited to investigating and comparing the housing satisfactions of two groups of thirty-two homeowners. One group resided in manufactured houses, built by one company and the other group in houses constructed at the lot site by several different builders. Respondents were restricted to those living in the same suburban area within the Standard Metropolitan Statistical Area of Lubbock, Texas, who owned houses of similar cost, size, and age. Data concerning homeowner satisfactions were obtained using an interview schedule developed by the researcher.

The approach to the study was based on the following assumptions: (1) homeowners can define and express their satisfactions and dissatisfactions; (2) the interview schedule is a valid and reliable instrument for measuring the degree of satisfaction homeowners derive from their housing environment.

Hypotheses

The following hypotheses were formulated for testing:

1. There is no significant relationship between homeowner satisfactions of the manufactured and conventional houses and the following demographic characteristics:

- a. race
- b. age
- c. sex
- d. family composition

- e. family income
- f. occupation
- g. educational background
- h. previous housing
- i. housing tenure
- j. residence background

2. There is no significant difference between the owners of manufactured and conventional houses regarding satisfaction with the following areas:

- a. construction
- b. exterior design
- c. floor plan
- d. group living spaces
- e. private living spaces
- f. support spaces
- g. support systems

Definition of Terms

For the purpose of this study, the following groups of terms require clarification:

Homeowner: an adult residing in a house who is paying on a mortgage or has paid off a mortgage loan.

Living space terms

Group living spaces: areas where household members gather and where friends and guests are entertained, e.g. living rooms, family rooms, and dining rooms. (12:30)

Private living spaces: areas where household members can have their own designated "territory" and/or seek privacy for various personal and hygiene reasons, e.g. bedrooms, dressing rooms, and bathrooms. (12:48)

Support spaces: areas within a house responsible for maintaining daily living of household members, e.g. kitchens, utility rooms, sewing rooms, and general storage areas. (12:65)

Support systems: systems which provide for basic comforts to household members within the housing structure, e.g. heating, cooling, ventilation, and lighting. (12:86)

Building construction terms

Conventional or stick building: structures built by skilled labor utilizing standard constructional techniques at the permanent site location.

The National Association of Building Manufacturers developed the following glossary of industrialized housing terms:

Component: An assembly or sub-assembly of a building such as roof truss, wall or roof panel or plumbing wall.

Componentized building: Factory assembled components to be shipped to a site for assembly to form a building or a house structure.

Manufactured or industrialized housing: Any and all types of buildings produced in a factory to be transported to a site for erection or placement.

Mobile home: Factory assembled non-permanent structure usually 8' to 14' in width and 32' or more in length, built on a chassis for hauling to a site where it need not comply with prevailing building code. Usually financed as chattel property, taxed as a vehicle or personal property.

Module: Factory assembled, three-dimensional section of a building designed to be shipped to site and joined with one or more sections to form a building or house to meet the same construction, health and life safety requirements as for conventional on-site building. (Not to be confused with the more general architectural definition of module--a uniform dimensional increment used in design.)

Modular house or building: A permanent structure consisting of one or more modules assembled in a factory in accordance with a building code, and taxed as real property when placed upon a permanent foundation. (Sectionalized housing is a form of single-family modular housing.)

Permanent construction: Buildings produced in accordance with prevailing building codes, placed on a permanent foundation where it will be taxed as real property and qualifies for financing under mortgage loan. (12:230)

CHAPTER II

REVIEW OF LITERATURE

The review of related literature will be considered in two areas: manufactured housing and housing satisfactions.

Manufactured Housing

The manufactured housing concept is not a new approach to building. Prefabrication and panelization were among the first types of assembly line construction to be utilized commercially. (14:133) In 1624, the English brought a panelized wooden house over to America for use by a fishing fleet. (15:7) The first large scale production and distribution of prefabricated houses took place during the 1848 Gold Rush. Houses were shipped to California from our eastern coast as well as from other parts of the world. "Models which cost \$400 in the East sold for \$5,000 on the West coast." (15:9)

In 1861 Boston lumber dealers, Skillings and Flint, patented a panelized wooden building system and sold many of the units during the Civil War. The company's catalogue claimed that their houses could be erected in three hours. (15:9)

The oldest manufacturer of panelized dwellings in America still producing factory-built houses, is Hodgson Housing Inc. of Hartford, Connecticut. The company began making small structures,

such as chicken houses, children's play houses, and dog houses. As the automobile increased in popularity, the Hodgson company found another market.

It received a boost when, with the advent of the horseless carriage, the demand for 'auto stables' arose. A further effect of the automobile was to increase the demand for vacation cottages, enabling the company to enlarge its operations and furnish a major part of its business until this day. (16:11)

Between 1900 and 1910, pre-cut or "mail-order" houses came into importance. Precutting of components was probably the most widely used application of assembly line production of housing construction before World War II. (16:11) According to Bruce and Sandbank (17:57), in 1943 a quarter of a million houses had been built utilizing this method, probably in excess of the total number of sectional and prefabricated houses built up to that time.

World War II definitely effected the manufactured housing industry. Large-volume production techniques were used while the industry grew with many firms attaining strong financial positions in the business world. At the same time, production capacities went beyond the industries abilities to deliver the houses. (16:62) At that time, manufactured units were erected to meet the nation's demand for service structures and dwellings. (14:135) However, poor quality construction lead many of the buildings to become the "instant slums of the 1950's." (7:83)

The mobile home industry, between 1950 and 1960, created a "vanguard" of industrialization for the factory-built home of

today. (10:65) Manufacturers of mobile homes paved the way by solving many problems of design, transportation and public acceptance during the peak periods of public demand between 1950 and 1970. (18:177-178)

In order to meet current housing requirements, today's manufactured building industry has utilized technological advances creating greater flexibility in design, quality, and use. (10:55) To promote the development of innovative building techniques, the Department of Housing and Urban Development initiated Operation Breakthrough in the summer of 1969. Construction Review reported:

The Breakthrough goal is high volume production, to be achieved by: (1) aggregating the demand and need for housing and identifying the land available for home sites through the cooperation of all levels of government and by (2) supporting and encouraging the design, testing, evaluation and construction of prototype housing which uses innovative concepts now available to the housing industry. Private industry is being solicited for its best ideas for producing acceptable, low-cost housing in quantity. (19:39)

Harold Finger, who had served as an associate administrator with the National Aeronautical Space Administration (NASA), was appointed head of the project. In his words, Operation Breakthrough was to be a "systematic breaking down, or through, the barriers keeping us from building all the housing we need." (20:40)

During March of 1970, twenty-two manufacturers were announced as winners in a contract competition. The winners were expected to build approximately two thousand new units before the projects' completion. (21:32) Most program participants proposed to use some

form of modular construction in their buildings. These proposed units were to be constructed out of wood, plastic, concrete, steel, and/or resin-impregnated paper. (21:32-34)

By May 1971, the program had been unable to secure the necessary financial support from either Congress or a new presidential administration, was behind schedule, and had been reduced in size and scope. Several of the companies and consortiums organized for the project had collapsed with serious financial problems. (22:58-59) Bender noted: "The systems selected were not particularly innovative; those that were, retreated under the pressures of meeting the program milestones." (23:16) Biderman (24:11) called Operation Breakthrough a "Blueprint for Disaster" citing that the modules were more expensive to produce than conventional construction. Companies often were unable to deliver goods because the project was held up in so much government tape at all levels.

One of the most significant contributions of Operation Breakthrough was that housing manufacturers received a higher level of acceptance and respectability than they had previously known from all government levels, the housing industry itself, and the general public. After the Breakthrough attempt, Reidelbach noted:

It was not only acceptable, but almost desirable, to buy a factory-built house. The local code officials changed their attitudes toward these systems, transportation regulations were altered in favor of the modular producers, state industrialized housing laws began to take shape and investors were extremely willing to extend huge sums to participate in the 'funny' business called modular housing. (13:10)

Since the demise of Operation Breakthrough, single-family units have dominated the manufactured housing industry with most of today's companies selling directly to the consumer. The industries share of the total housing starts is continuing to increase each year. (25:76-77) The Manufactured Housing Institute forecasted sales of 290,700, for 1976, compared to 1975 sales of 214,300. (26:1) The importance of factory-built housing's acceleration within the American market is substantiated by the fact that approximately one-half of costs involved with conventionally built homes are absorbed by labor. These costs have been successfully reduced to twelve to fifteen percent when unskilled workmen have been used in manufactured housing. (27:16) Thus, the possibility of reducing steadily rising housing costs could become a reality. Continued growth and maturity within the industry will find greater numbers of consumers considering the factory-built home a housing alternative.

Housing Satisfaction

Satisfaction is defined by Webster (28:765) as the fulfillment of a want or need, a means of enjoyment. Satisfaction with housing was described by Taneja (29:36) as "a state of contentment with one's living unit." He also designated the following as areas of housing satisfaction: (1) the satisfaction with the house as a whole and (2) the satisfaction with specific aspects of the house.

According to Greninger " . . . satisfaction is seen as the end or goal of an individual's economic behavior. Expected satis-

faction is a crucial underlying factor of consumer choices." (30:16-17) She cited Smith's (31:29) concept that satisfactions related to housing are indicated by an individual's perception of what he himself enjoys. Ater states that " . . . the degree of satisfaction represents the extent to which goals are met." (32:257) McVoy says satisfactions can be measured by the amount of tension present as a result of the degree to which a value, or goal is attained. He stated the theory in the form of the formula:

$$\text{Satisfactions} = \frac{\text{possessions.}}{\text{wants}}$$

The satisfaction ratio could be increased either by increasing the numerator or by decreasing the denominator General satisfaction would represent a summation at a given time of satisfactions with all the values desired by a given individual. (33:80)

A method of measuring the satisfaction of wants by giving equal weight to all variables was developed by McVoy for his study of satisfactions with family living in 1941. Equal weights were used even though he recognized each factor did not represent equal amounts of satisfaction or dissatisfaction.

A surveying technique was used by Foreman in 1972 when she conducted an intensive study of thirty Iowa homemakers. Purpose of the exploratory research was to determine homemaker's satisfactions with factory built houses and their attitudes toward the structural and physical aspects of the houses. Specifically the main objectives were:

1. Ascertain the expressed satisfaction of homemakers as indicated by their attitudes toward the design (space--

amount and arrangement), materials, and construction of their factory built home

2. Identify areas of information which might be developed by factory built housing. (34:30)

Degrees of satisfaction, adequacy, and/or convenience were measured on a four point response scale. Open-ended questions were asked when a negative answer was given or if the homemaker had a comment to make. There were 806 possible responses to the detailed interview schedule which were grouped into descriptive data about the homemakers, the houses' structural and physical characteristics, economic information, and satisfaction scores. (34:34)

Findings about the houses themselves, revealed ninety percent were located either in rural areas or in towns with a population under 5,000. Average length of occupancy was a little over two years. While at least three homes were larger than 1,400 square feet, the mean size was between 1,100 and 1,199. With ninety percent of the homes having basements, total cost per unit averaged \$19,317. This price included the housing structure; lot; plumbing, electrical, and water connections; garage, and dirt filling.

Eighty percent of the homemakers said they selected the manufactured house because they felt it was less expensive. Almost sixty-seven percent said they purchased their house because the unit was "quick to build." (34:90)

As a result of extensive research, Foreman reached the following conclusions:

1. In general, the homemakers interviewed expressed overall satisfaction with their factory built

house in which they were currently living. This indicates a real satisfaction by the homemakers of the physical and structural aspects of their houses or it indicates that homemakers and their families are adapting themselves to the characteristics of their houses.

2. Questions asked on the interview schedule were applicable to specific areas and thus a satisfaction score for each area could be obtained. Most satisfaction was expressed in the area of general satisfaction (a question asked near the beginning of the interview to gain an overview of the homemaker's attitude), followed in order by utilities, work zone, living zone, sleeping zone, rooms, and kitchen. Three areas of most dissatisfaction occur in exterior, storage, and safety. These three areas might deserve added attention by builders in considering future design. It appeared also that when questions were stated in more general terms or encompassing broader areas, the respondents' answers were likely to be less critical. Although all scores and indexes in general were satisfactory, the individual respondents indicated some items as being unsatisfactory.
3. When the total satisfaction index was correlated with indexes of 13 independent variables, 11 of the variables were found to be statistically significant. The area indicating greatest correlation was the living zone. Other areas in which satisfaction was closely related to total satisfaction were sleeping zone, work zone, rooms, kitchen, exterior, utilities, safety, general satisfaction, and storage. A lesser degree of satisfaction occurred in the relationship between square footage of the living area and total satisfaction. Family income and the total cost of the house were slightly correlated with total satisfaction but not significantly statistically.
4. Although the respondents were generally quite satisfied, specific dissatisfactions and changes suggested by them in answers to the open ended questions might be helpful to builders and educators. (34:135-136)

The acceptability of three types of factory built homes by one hundred residents of coastal, southeast Florida communities was investigated by Thatcher (35:18) in 1972. During face-to-face interviews, respondents were asked to look at photographs of a prefabricated house of conventional styling; a modular house, similar to the design of a double wide mobile home; and a single wide mobile home. Thatcher tested the following hypotheses:

1. A larger percentage of people will feel factory built homes are more economical than conventionally built homes.
2. A larger percentage of people feel concrete block structures are preferable for safety reasons.
3. Lower income persons will feel less favorable to mobile, modular, and prefabricated homes.
4. Less educated persons will feel less favorable to mobile, modular, and prefabricated homes.
5. Older persons will feel less favorable to mobile, modular, and prefabricated homes. (35:18)

As a result of the study, Thatcher learned that several people were familiar only with the factory built mobile home but not the prefabricated or modular house. It is interesting to note that fifty-seven percent of those sampled liked the prefabricated house pictured and seventy-eight percent stated they would live in that type of home. Sixty-nine percent disliked the mobile home and sixty-six percent said they would not live in one. Sixty percent of the respondents stated they would live in a house constructed in the modular manner, even though seventy-four percent disliked the modular home represented in the study. (34:49-50)

Significant findings revealed: (1) the Florida residents felt factory built homes were economical, but preferred concrete structures; (2) lower income individuals are apt to accept mobile home living; (3) less educated respondents are less favorable in accepting a prefabricated house as a residence; (4) older persons prefer mobile homes to prefabricated houses, and (5) all groups of persons interviewed regarded price, design, and safety during adverse weather conditions the most important items to consider when purchasing a manufactured house.

Research concerned solely with the factory-built mobile home, produced on the assembly line, have been numerous. While the mobile home is considered a non-permanent structure, findings regarding homeowner satisfactions reveal residents have similar housing needs, demands, and expectations as those living in other types of dwellings.

In 1972, Mood interviewed fifty mobile home housewives in Porter County, Indiana. Significant findings indicated:

1. The mobile home dwellers are generally satisfied with mobile home living.
2. The mobile home families are not as satisfied with the parks as they are with mobile home living.
3. The majority of mobile home households do not view mobile home living as temporary.
4. The families living in the mobile homes are similar to the families living in small homes and houses in general and have similar storage needs.
5. The mobile homes tend to be deficient in storage for items in the following groups: garden and outside, hobby, and recreation, and children's. (36:viii)

A survey of twenty-four mobile home residents was made by Christie (37:2) to find out the opinions of young adults toward mobile home living. Leading reason reported for electing to live in a mobile home included economy, desire for homeownership, and the lack of available housing. "Convenience was considered the greatest advantage of mobile home living while lack of storage space and weather were listed as the greatest disadvantages." (37:53)

As part of Hatch Project 404, "A Study of Residential Mobility, Life Style, and Housing Needs and Choices," Lindamood (38:33) compared demographic characteristics, mobility, housing satisfactions, and housing expenditures of 817 residents in Tioga County, New York. Ninety-five of the respondents were living in mobile homes and 722 were living in conventional type housing. All households were randomly selected from rural, hamlet and village areas with no special technique being used to include mobile home families.

Findings related to resident satisfactions with their dwelling showed no difference between mobile home residents and conventional home residents. However, it was noted:

Although mobile home residency has no effect—either positive or negative—on satisfaction, it is suggested that mobile homes may offer greater housing satisfaction to its residents than other alternatives available to them, as the mobile home offers ownership. (38:34)

Lindamood concluded the major differences between the two groups studied were with income and demographic characteristics.

There have been many studies concerning various aspects of satisfaction with the conventionally built house. In the late

fifties, Linke (39:12) sought the opinions of 207 homeowners in a homogeneous Long Island housing development. She found that some of the residents were willing to tolerate disadvantages in housing features if they felt the disadvantages were attractive. The desire for individuality, larger rooms, dining rooms, and larger property was greatly evident in this study. (39:34)

Murdock (40:16) in 1962, questioned sixty-three homemakers living in new homes to investigate satisfaction with the livability of the houses. The dwellings, located in and around Oxford, Mississippi, were grouped into four price ranges: under \$12,000; \$12,000 to \$16,000; \$16,000 to \$20,000; and over \$20,000. As a result of the study Murdock made the following recommendations to increase livability satisfactions:

1. Include in all houses plans for the following components:
 - (1) An entrance hall.
 - (2) An eating area in the kitchen with sufficient space for table and chairs.
 - (3) A cleaning closet.
 - (4) A half-bath near the rear service entrance.
2. Arrange rooms to permit noisy and quiet activities to take place simultaneously without disturbance, with no room serving as a 'trafficway' to other areas.
3. Use strip windows only in those rooms where children would not be deprived of seeing out, or of escaping in case of an emergency.
4. Consider the type and the placement of doors and windows so as not to reduce floor space or interfere with furniture arrangement.
5. Place the house on the lot so that windows of living room, dining room, and kitchen are not on the west. (40:26-27)

Forty homemakers in 1966 were interviewed by Vars (41:164) to discover general housing satisfactions, what influence personal values have on satisfactions, and if the highly satisfied homemaker would rate high on a checklist prepared by an architect for use in evaluating house plans. The research involved homemakers living in homes selected on the basis of (1) square footage, 1200 to 1700 square feet; (2) date of construction; (3) method of selection; and (4) ownership. Respondents were asked to rank nine values related to socio-psychological orientations. Seventy-five percent of the homemakers placed either economy or equality first on the scale. (41:165) The results of Vars' study revealed that smaller families express more satisfaction towards their housing than larger ones and that increased educational levels tend to positively influence dissatisfactions. She also concluded that homemakers living in houses less than two years seemed to be most satisfied in general.

The Urban Institute, (42:23) in 1970, conducted a research project for the Department of Housing and Urban Development to analyze the effectiveness of housing management in thirty-two government housing developments. Two of the projects studied involved opportunities for ownership of a single-family unit by low and moderate income individuals. Responses by this group were compared to those of multi-family projects. Questions regarding satisfactions were concerned with living spaces, privacy and support spaces. Extensive interviews were made with a total of 350 residents in various parts of the country. (42:85)

Occupants of all projects were less satisfied with room size than with the number of rooms available to them. The lowest degree of satisfaction was held by residents in the homeownership programs. This group was also least satisfied with the amount of closet and storage spaces. The homeowners expressed the greatest satisfaction with privacy. (42:85-91)

The housing goals and satisfactions of low-income Tennessee homeowners were investigated by McIntosh (43:54) in 1973. Ten white and ten black homemakers who owned new houses purchased under the Interest Credit Program of the Farmers Home Administration, were interviewed. While both groups expressed a high level of satisfaction with their housing, the black respondent's mean scores were slightly higher than the white families. Those homemakers who had not completed high school expressed a higher degree of satisfaction than those who had graduated.

The mobility of a family has been found to have a direct effect on housing satisfactions. Bistow (44:21) interviewed 108 Stillwater, Oklahoma, professional families in 1965 to determine housing satisfactions and solutions when a move is made within a community. Her findings revealed:

Almost one-half had moved; of those families who had moved, nearly all identified some aspect of the house itself, e.g., a more attractive house, a larger house, more outside space, as a reason for having moved. (44:47)

While most homemakers were generally satisfied with their new residence, large families and those with higher educational levels were less satisfied.

One of the purposes of Carol Meek's (45:3) 1969 study was to interview the wife in a household to ascertain the relationship between values held and the kind and extent of planning performed in the selection of a living environment by fifty-three, middle socioeconomic, Ohio families. A major finding indicated the distance moved from a previous location to the present house accounted significantly for variance in housing satisfaction. "The greater the distance moved the greater the wife's satisfaction." (45:59)

Housing satisfactions associated with patterns of living in southwestern rural Iowa communities was investigated by Yearn (46:143) in 1972. Data for the study were secured from the interregional project NC-90, "Factors Affecting Patterns of Living of Disadvantaged Families," and Iowa Project 1737, "Measures of Human Resources, Community Opportunities, and Family Life Patterns" and refined by the researcher. Interview records of 186 homemakers were utilized to determine the associations of housing satisfactions with housing attributes, demographic characteristics and orientations to life.

The central hypothesis of the study was that housing satisfactions would more often be associated with the respondents' general orientation to life than either their demographic characteristics or housing attributes. Yearn found that:

Housing satisfactions reported by respondents were not only frequently interdependent with variables representing their orientations to life, but were also related to indicators of housing attributes and demographic characteristics as well, thus the central hypothesis was partially rejected. (46:146)

Results showed families with adequate housing were most satisfied with their dwellings (46:92), increased socioeconomic circumstances tended to increase satisfactions, (46:101) and high levels of satisfaction were indicated when there were frequent interactions with family members, friends, neighbors, and others in the community. (46:108)

Williams (47:3) studied the uses of the neighborhood and housing as sources of satisfaction with the near environment in 1972. Near environment was defined as the total space, including physical and social behavioral aspects of an individual or a family. Ninety-five young, mostly rural Nevada families served as respondents in the study. Findings related to general housing satisfaction revealed that the lowest income group was moderately satisfied and moderate income respondents were the least satisfied. The highest income group surveyed was the most satisfied, in general, with their housing. (47:73)

In 1970, Greninger (30:35-36) studied the determinants of housing satisfactions of 679 wives in Illinois. A total of 109 independent variables were grouped into socioeconomic, social psychological, and housing categories. The housing variables included information concerning tenure, length of occupancy, number of rooms, and housing problems and potentialities.

Findings for the group whose mean income was \$13,796, indicated, in decreasing relative importance, the likelihood of the wife being satisfied with her housing increased with:

1. satisfaction with her family's present standard of living
2. perceiving her family as better off regarding living conditions now than compared to 5 years ago
3. wanting to live in the same or similar neighborhood in 5 years
4. being oriented toward equality (versus authority) in regard to employment
5. expecting to live in the same housing in one year
6. perceiving her family's income as adequate
7. being oriented toward integration (versus alienation) in regard to education
8. being oriented toward fatalism (versus control) in regard to education
9. regarding the size of her present housing as about right for meeting family needs
10. possessing a working television set (30:77)

Results suggest that social psychological variables were the greatest influence on the housing satisfactions of wives. (30:81)

An intensive study was undertaken at the M.I.T.-Harvard Joint Center for Urban Studies in Kansas City and Boston in 1971. A total of nine hundred face-to-face interviews were made with a cross-section of persons in both cities. Inquiries focused on:

1. attitudes of homeowners and renters toward their present housing likes and dislikes and general level of satisfactions
2. expectations and aspirations about changes in the individual respondents' housing situation through the next 5 to 10 years
3. the way the respondents would rate houses and

neighborhoods for standardness and desirability of residence (48:5-1 to 5-5)

Aim of the study was to suggest guidelines as to the kinds of new housing units that will most nearly satisfy the public's demand in 1980. Another main purpose was to "point out certain factors in consumer aspirations." (48:5-3) The four variables utilized for the research were:

1. The general state of the economy
2. Relative increases in the cost of housing
3. The availability in any given community of the specific types of housing which promise the consumer more satisfaction than his present housing, at a price within his reach
4. Changes in the level of neighborhood satisfaction. (48:5-70)

Results of the study showed consumer preferences are for additional space and spaces, and a drive toward being "up-to-date." (48:5-64)

Information regarding housing exteriors was analyzed by Dale (49:14) in a 1962 study of satisfactions with different building materials used in new houses. She questioned sixty-three homemakers living in structures priced from under \$15,999 to over \$20,000 in Oxford, Mississippi. Dale found dissatisfactions with housing exteriors were not from the materials used in construction of the homes, but with the color or combination of materials. (49:14)

One aspect of group living spaces within the home environment was researched by Hurley (50:82) in 1966. She studied social-psychological factors thought to be influential in the ways suburban Florida families furnish and use their living rooms, and the

resultant satisfactions. One hundred and twenty housewives under sixty years of age, with one or more children, served as respondents to personal interviews. All persons contacted lived in single-family dwellings, a majority of which were built between 1951 and 1961, with a median price of \$15,500.

A lack of storage space for activities carried out in the living room and protection against noises from other parts of the house were the dissatisfactions most often expressed by the subjects. Important implications related to satisfactions with living rooms were:

1. The majority of suburban homemakers wanted their living room to be used primarily for entertaining guests.
2. In several homes which did not have a family room in addition to the living room, the homemakers considered that they had a family room but not a living room.
3. A large proportion of the respondents desired a 'living-entertaining' room, but the higher socioeconomic families had been more able than the lower socioeconomic families to afford houses having a family room and separate dining room and were therefore more likely to have a 'living-entertaining' front room.
4. Also, the higher priced houses, beyond the financial reach of the lower socioeconomic group, tended to have fewer features considered problems by the homemakers. Larger living rooms, and entrance halls in many of the higher-priced houses, helped to alleviate furnishing problems.
5. The respondents tended to say that they were satisfied with their living rooms despite their dissatisfactions with several aspects of the living rooms. Many of the wives in the lower socioeconomic group made comments such as, 'I might as well be satisfied. It's all we can afford right now.'

6. A large proportion of the problems encountered when furnishing a living room were of a structural nature and had been present when the family had moved into the house. Two main problems in the lower priced houses were too many traffic paths throughout the living room, and a living room which was too small for the many activities which were carried out there (50:91-93)

Studies concerned with support spaces in the home indicate homemakers are often dissatisfied with the kitchen and utility areas. Dale (49:36-37) found that, in general, her respondents were not satisfied with the choices of heating and cooling systems, kitchen flooring, counter surfaces, and hardware which the builder had influenced the majority to select.

Jeanell Meeks surveyed forty-two homemakers in 1970 regarding kitchen satisfactions. Their houses were built between 1964 and 1969 at a cost between \$15,000 and \$59,999. She concluded that homemakers who plan and either build, or have their houses built, are better satisfied with their kitchen than those who buy a house already built. Meeks also found that homemakers owning the higher priced houses were more satisfied than owners of the lower priced units. (51:68)

Preferences for the location and performance of laundry activities in the homes of sixty Sentinel, Oklahoma, homemakers was studied by Tustison (57:26) in 1961. Three-fourths of those interviewed said they would like a separate utility room. Almost all expressed a preference for a light and a work space near the washer. (52:27)

Summary

The review of literature revealed the manufacturing of housing has evolved into an accepted method of construction for the single-family dwelling. The industry has overcome many financial, marketing, legal and labor related constraints to achieve its current status among the building community and the public. The Department of Housing and Urban Development gave the industrialization approach to housing its greatest boost through the Operation Breakthrough project, even though its primary aim failed. All predictions indicate manufactured housing will continue its growing importance within the market place. This is apparent since the industry has the potential to reduce housing costs at a period of urgent need and demand.

Research related to housing satisfactions has been wide spread over the last two decades. Findings, for the most part, have indicated a majority of residents were generally satisfied with their housing. Approaches to determine degrees of satisfaction have been aimed at specific income groups, specific age groups, areas within the house, and types of housing construction. Information has been secured about the suburban housing development; general livability of homes; residential mobility; demands for housing; relationship of environment, economy, and social and psychological aspects; individual resident's values and consumer attitudes.

In summary, it can be concluded from the studies reviewed, a higher degree of satisfaction is evident with: small families;

higher income families; those who have lower educational levels; participation in the planned phases of construction or selection; an improved perception of the families standard of living; the greater distance moved to the present location; fewer years of occupancy at the present location; and adequate space for storage, individual privacy, group activities, and support spaces.

Dissatisfactions with all types of single-family dwellings, for the middle income residents, were usually because there was a lack of individuality, poor floor planning, inadequate lighting, and not enough space--specifically for storage and work areas to meet the families goals. The procurement of housing which provides the highest degree of satisfaction with minimal amounts of dissatisfaction, has become more difficult as housing consumers compromise their aspirations for the affordable, less expensive, and smaller unit with fewer extras. (53:5)

Apparently residents of the usually less expensive manufactured house, including mobile homes, have similar housing demands, satisfactions, and dissatisfactions as those persons living in conventionally built structures. Acceptability of the factory-built houses' design and its attractiveness to the owner, neighbors, and the community were important factors to the resident of this type housing. The review of literature also revealed safety and economy as significant variables.

As far as can be determined, no studies are available which compare homeowner satisfactions of the manufactured and the conven-

tionally built single family detached houses. This research would not only help to confirm conclusions of previous studies for both types of structures, but would also give greater insight into another alternative for the housing consumer. According to Housing and Urban Development Secretary Carla Hills, Americans are going to have to do some rethinking about housing as they are already reconsidering the kind of car to drive. (54:81) A comparative measure of housing satisfactions should help to see how some families feel about newer housing and the types available to them.

The most frequently used methods of measuring occupant likes and dislikes, in the research viewed, were mail-out questionnaires and personal, face-to-face interviews. Open-ended and fixed-alternative questions on a four to six-point rating scale were most often used. This approach was used for studies aimed at all areas and subjects of housing satisfactions.

CHAPTER III

METHODS AND PROCEDURES

This study was undertaken to determine if there is a relationship between homeowner satisfactions of manufactured and conventional houses with regard to demographic characteristics of race, age, sex, family composition, family income, occupation, educational background, previous residence, housing tenure, and residence background (rural/urban). A second aim was to determine if there are differences between the satisfactions of the owners of manufactured and conventional houses with regard to construction, exterior design, overall floor plan, group living spaces, private living spaces, support living spaces, and support systems.

Selection of the Sample

Sixty-four homeowners, living in the University Pines and Potomac Park additions of Lubbock, Texas, composed the sample for the research. Thirty-two respondents were owners of the houses built by First Manufactured Homes, Inc., and an equal number were owners of stick-built houses constructed by various local builders. Development of the two housing additions began in 1973; therefore, all respondents are considered to be owners of new houses.

The thirty-two respondents owning conventionally constructed houses were all located in Potomac Park in homes approximately the

same size that currently sell for \$20,000 to \$32,000. Initially thirty-five participants were selected by a simple random sampling of lot numbers drawn from a map of the subdivision provided by the Lubbock City Planning Office. Of the units selected, two owners did not wish to participate in the study and one was not eligible.

Thirty-nine factory-build homes have been placed in Potomac Park. Fifteen units had recently been moved into the addition and were either in the finishing stages or not yet sold. The researcher aspired to interview owners of the remaining twenty-four occupied houses. However, contact could not be made with eight residents after four attempts at various times of the day, and two owners did not wish to participate in the study. Thus, fourteen homeowners of manufactured houses included in the group studied were living in Potomac Park. A total sample of thirty-two was obtained through another simple random sampling of lot numbers drawn from the neighboring subdivision, University Pines which contains only manufactured units. These houses are also made by First Manufactured Homes, but are smaller and less costly. The units were sold to their present owners for a cost of between \$19,000 and \$24,000.

No special techniques were used to insure inclusion of male and female respondents since Texas is a community property state and both husband and wife are legally considered to be equal owners of the dwelling. Only those who purchased or were in the process of buying their houses were included in the study.

The Manufactured Houses

Half of all persons interviewed for the study were owners of manufactured houses built by First Manufactured Homes, Inc. of Lubbock, Texas. The four year old, locally owned and operated company builds houses in the conventional manner on an assembly line within an enclosed building. Houses can be assembled to be moved to a permanent location within ten days. A family can move into a single-family manufactured dwelling in fifteen days after securing financing arrangements and confirming the order. The houses are constructed to comply with Federal Housing Administration minimum standards and local building codes.

Currently three sizes of houses are being produced and owners of all sizes are included in the study. All have the same basic floor plan with larger houses containing larger rooms (see Appendix A). Features included in each of the total electric, three bedrooms, two bathroom houses are refrigerated air conditioning and central heating system, carpeting, dishwasher, built in oven, range top, and vent hood. Options available are a fireplace, food disposer, compactor, garage, and energy efficiency features. Consumers have a choice of exterior siding and paint colors from available stock (55).

The two smaller houses have 1232 and 1280 square feet of living space and sell for \$24,250 (including lot), when purchased for location in the University Pines subdivision next to the factory. The larger house, 1408 square feet, costs \$29,959 (including lot), when purchased in the neighboring Potomac Park ad-

dition. The cost covers transportation, set-up and connection, garage, and wooden fence.

Approximately one-third of the units built by First Manufactured Homes, Inc., are placed in either University Pines or Potomac Park. Other sales are delivered to sites of the buyers choice with many of the units going to rural areas. Transportation and the selection of certain options affect the costs of move-aways. The basic cost for the 1408 square foot house (without lot) is \$17,800 (56).

The Instrument

An interview schedule, utilizing a Likert-type scale, open-ended questions, and expected responses was developed by the researcher. The instrument was designed to secure demographic characteristics of homeowners as well as information indicating satisfaction or dissatisfaction of the homeowner with the housing unit. (Appendix B) The questionnaire was critiqued by university faculty members, an owner of a manufactured housing factory, and a district manager of a nationwide conventional building company for conciseness, relevance, clarity and brevity.

Nine questions pertaining to demographic characteristics of the homeowners focused upon identification of the following:

1. race: white, Mexican-American, Black, Oriental, or other
2. age: under twenty, twenty-one to thirty, thirty-one to forty, forty-one to fifty, fifty-one to sixty, or over sixty-one
3. sex: female or male

4. family composition: single individual, couple with no children, couple with one to three children, couple with four or more children, one parent with one to three children, one parent with four or more children, or other
5. family income: less than \$5,000; \$5,001 to \$10,000; \$10,001 to \$15,000; \$15,001 to \$20,000; \$20,001 to \$25,000; \$25,001 to \$30,000; or over \$30,001
6. occupation: professional; manager; clerical worker; sales and service worker; craftsman; operative; housewife; or retired or student
Occupational categories were adapted after those of the United States Census job classification (56:99-101).
7. educational background: grades on to nine, some high school, high school graduate, vocational school, some college, or college graduate of higher
8. previous housing: apartment, mobile home, or house
9. housing tenure: owned, rented, or other
10. residence background: rural area of less than 2,000 people; small town of 2,001 to 10,000 people; town of 10,001 to 20,000 people; city of 20,001 to 50,000 people; or large city of over 50,001 people

Twenty-nine questions were concerned with the owner's satisfaction and desired changes with:

1. construction
2. exterior design
3. floor plan
4. group living spaces: living room and dining room
5. private living spaces: bedrooms and bathrooms
6. support spaces: kitchen, kitchen storage, and closet space
7. support systems: lighting, electrical outlets, heating and cooling systems, insulation, and windows

Pretesting the Instrument

The instrument was pretested by the researcher who interviewed five homeowners who did not participate in the study. Purpose of the pretesting was to determine: (1) clarity of the questions, (2) the kind of and amount of information that might be expected from the adults interviewed for the actual study, and (3) the approximate time required for an interview.

Each respondent was given a card for use during the interview with a multi-intensity response range of very satisfied, satisfied, fairly satisfied, dissatisfied, and very dissatisfied printed on one side. Another card was used to secure answers about family income and to assure confidentiality of responses. (Appendix B)

Evaluation of the pretesting indicated the interview schedule could be completed in approximately ten minutes. Rearrangement of the questions concerned with support systems into a more logical order was also indicated. This rearranging of questions was the only change made to the questionnaire after the pretest.

Collection of the Data

The data were collected by the investigator and trained assistants in fact-to-face, informal interviews during a two week period in March, 1976. Six undergraduate students were trained and paid by the researcher to help gather the desired information. Interviewing checklists and guidelines suggested by Backstrom and Hursh (57:134-144) were used during the one hour training session.

Hours for interviewing all homeowners were staggered between nine o'clock in the morning and seven o'clock in the evening. The

time scheduling was created to get a representative sample of respondents, including working females and males. When necessary, appointments were made with homeowners unable to complete the interview during the first contact.

Treatment of the Data

All data collected were coded and place on IBM cards for processing at the Texas Tech University Computer Center. Frequency counts, percentages, factor analysis, the chi-square test and the Fisher exact test were utilized in evaluating the data. Cross-tabulation procedures described in Statistical Packages for Social Sciences, (SPSS), were followed for all analyses. (58:218) Findings were considered to be significant at the .05 probability level.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

The data obtained from the study are reported under the following headings for examining satisfactions of homeowners of manufactured and conventional houses: description of the sample and evaluation of hypotheses.

Description of the Sample

The demographic characteristics of sixty-four homeowners living in two neighboring subdivisions within the city of Lubbock, Texas, were tabulated by housing construction and are summarized in Tables one through three. The research sample represents a typical conception of American suburbia: white, young, educated, middle-income, couples with children. Three individuals in this study were Mexican-Americans; ninety-five percent of the subjects were white (see table 1). Seventy percent of all homeowners surveyed were between the ages of twenty-one and thirty years of age.

More women (seventy-three percent) were interviewed than men (twenty-seven percent). However, thirty-four percent of the responses made by homeowners living in the factory-built houses reflected the male viewpoint, while nineteen percent of the homeowners living in conventionally built houses were men.

TABLE 1
RACE, AGE, AND SEX OF HOMEOWNERS OF MANUFACTURED
AND CONVENTIONAL HOUSES

Characteristics	Manufactured Houses		Conventional Houses		TOTAL	
	n ₁ =32	%	n ₂ =32	%	N=64	%
Race						
White	32	100.5	29	90.6	61	95.3
Mexican-American	--	-----	3	9.4	3	4.7
Age						
21 to 30 years	20	62.5	25	78.1	45	70.3
31 to 40 years	7	21.9	6	18.8	13	20.3
41 to 50 years	2	6.3	1	3.1	3	4.7
51 to 60 years	1	3.1	--	----	1	1.6
Over 61 years	2	6.3	--	----	2	3.1
Sex						
Female	21	65.6	26	81.3	47	73.4
Male	11	34.4	6	18.8	17	26.6

Regarding family composition, couples with one to three children comprised the largest group with fifty-nine percent (table 2). The second largest family category (twenty-eight percent) was couples with no children. When family composition was analyzed with housing construction controlled, the findings indicated that twelve and a half percent of the manufactured house group was made up of one-parent families with one to three children.

Almost two-thirds of the individuals interviewed were employed outside the home with clerical and sales/service work reported most frequently. Seventy-three percent of the families reported incomes between \$10,001 and \$20,000. Nine families in conventionally

TABLE 2
FAMILY COMPOSITION, FAMILY INCOME, OCCUPATION AND
EDUCATIONAL BACKGROUND OF HOMEOWNERS OF
MANUFACTURED AND CONVENTIONAL HOUSES

Characteristics	Owners of Manufactured Houses		Owners of Conventional Houses		TOTAL	
	n ₁ =32	%	n ₂ =32	%	N=64	%
Family composition						
Couple with no children	8	25.0	10	31.3	18	28.1
Couple with 1 to 3 children	17	53.1	21	65.6	38	59.4
Couple with 4 or more children	1	3.1	1	3.1	2	3.1
One parent with 1 to 3 children	4	12.5	--	----	4	6.3
Other	2	6.3	--	----	2	3.1
Family income						
\$ 5,001 to \$10,000	3	9.4	1	3.1	4	6.3
\$10,001 to \$15,000	13	40.6	10	31.3	23	35.9
\$15,001 to \$20,000	12	37.5	12	37.5	24	37.5
\$20,001 to \$25,000	1	3.1	5	15.6	6	9.4
\$25,001 to \$30,000	--	----	3	9.4	3	4.7
Over 31,001	2	6.3	1	3.1	3	4.7
Occupation						
Professional	3	9.4	3	9.4	6	9.4
Manager	1	3.1	2	6.3	3	4.7
Clerical worker	5	15.6	10	31.3	15	23.4
Sales/Service worker	5	15.6	4	12.5	9	14.1
Craftsman	4	12.5	1	3.1	5	7.8
Operative	--	----	2	6.3	2	3.1
Housewife	12	37.5	10	31.3	22	34.4
Retired or student	2	6.3	--	----	2	3.1
Educational background						
Grades 1 to 9	2	6.3	--	----	2	3.1
Some high school	--	----	11	34.4	11	17.2
High school graduate	14	43.8	15	46.9	29	45.3
Vocational school	1	3.1	--	----	1	1.6
Some college	8	25.0	6	18.8	14	21.9
College graduate of higher	7	21.9	--	----	7	11.0

constructed homes reported incomes in excess of \$20,000 compared to three in manufactured homes.

Ninety-seven percent of the total sample had completed high school. More of the owners of manufactured units had some college or a college degree than did the owners of conventional units; fifteen compared to six.

One half of the research sample lived in a house (single dwelling unit) rather than an apartment before moving to the present location (table 3). Ten of the subjects had lived in a mobile home. A majority of the homeowners rented their previous dwelling.

Over a third of the sample specified that they had spent their childhood in a large city (50,001 or more population). When the sample was divided into the two groups, twenty-eight percent of the manufactured house group were associated with rural areas compared to nine percent of the conventional group.

Evaluation of Hypotheses

Hypothesis Number One

The first hypothesis tested in the study stated there is no significant relationship between homeowner satisfactions of manufactured and conventional houses and the following demographic characteristics:

- a. race
- b. age
- c. sex
- d. family composition
- e. family income
- f. occupation
- g. educational background

TABLE 3

PREVIOUS HOUSING, HOUSING TENURE, RESIDENCE
BACKGROUND OF HOMEOWNERS OF MANUFAC-
TURED AND CONVENTIONAL HOUSES

Characteristics	Owners of Manufactured Houses		Owners of Conventional Houses		TOTAL	
	$n_1=32$	%	$n_2=32$	%	N=64	%
Previous housing						
Apartment	11	32.4	11	34.4	22	34.4
Mobile Home	7	21.9	3	9.4	10	15.6
House	14	43.8	18	56.3	32	50.0
Housing tenure						
Owned	12	37.5	13	40.6	25	39.1
Rented	19	59.4	18	56.3	37	57.8
Other	1	3.1	1	3.1	2	3.1
Residence background						
Rural area	9	28.1	3	9.4	12	18.8
Small town	5	15.6	5	15.6	10	15.6
Town	3	9.4	4	12.5	7	10.9
City	3	9.4	6	18.8	9	14.1
Large city	11	34.4	14	43.8	25	39.1
Other (military)	1	3.1	--	----	1	1.6

- h. previous housing
- i. housing tenure
- j. residence background

Chi-square and Fisher exact tests were used to determine if significant differences existed between the housing satisfactions of the two groups. Findings showed there was no difference at the 0.5 level--the critical region selected for this study. Hence, hypothesis number one was accepted.

Several variables, however, were significant at the .10 level: age and construction, family composition and construction, income

and exterior design and support systems, occupation and construction, and educational background and floor plan. The chi-square values are listed in table 4. These findings suggest, if a larger sample were available, several variables might be significant at the .05 level of probability.

TABLE 4
SUMMARY OF CHI-SQUARE VALUES FOR DEMOGRAPHIC CHARACTERISTICS OF HOMEOWNER SATISFACTIONS:
MANUFACTURED VERSUS CONVENTIONAL

Demographic Characteristic/ Housing Variable	Chi-square*
Age	
Construction	5.36
Family composition	
Construction	4.84
Income	
Exterior design	4.68
Support systems	4.92
Occupation	
Construction	5.79
Educational background	
Floor plan	5.47
* Significant at the .10 level with 2 degrees of freedom.	

Hypothesis Number Two

Hypothesis number two stated there is no significant difference between the owners of manufactured and conventional houses and satisfaction with the following:

- a. construction
- b. exterior design

- c. floor plan
- d. group living spaces
- e. private living spaces
- f. support spaces
- g. support systems

Frequency counts, mean satisfaction scores, factor analysis, and the chi-square test of independence were employed for evaluating the hypothesis.

Mean Satisfaction Scores and Comments

Responses to seventeen multi-variant and open-ended questions were tabulated for frequency counts. Answers to questions measuring degrees of expressed satisfaction were assigned a numerical value from one to five, with the highest satisfaction value being one. The satisfaction scores were added and a mean score obtained. During this process, two distinct price groups emerged for each construction group. Therefore, the respondents living in manufactured houses and those in conventional houses were further divided into two subgroups according to the price paid for the house by the homeowner: Price A--\$18,000 to \$24,000; and Price B--\$25,000 to \$32,500. The scores, listed in Table 5, indicate owners of lower priced (conventional units) were least satisfied, owners of higher priced conventional units most satisfied and there was no difference between owners of manufactured houses.

Replies to the open-ended questions concerning each variable were ranked by frequencies from the highest to the lowest for owners of both construction methods. The number of responses for any comment may total more than one hundred percent since the number of

TABLE 5
MEAN SATISFACTION SCORES FOR HOMEOWNERS OF MANUFACTURED AND
CONVENTIONAL HOUSES WITH PRICE SUBGROUPS

Area of Housing Satisfaction	Mean Scores for Manufactured Houses ($n_1=32$)			Mean Scores for Conventional Houses ($n_2=32$)		
	^a Price A	^b Price B	Total	Price A	Price B	Total
General satisfaction	1.47	2.06	1.77	1.75	1.75	1.75
Construction	1.93	2.35	2.14	2.00	2.04	2.02
Exterior design	1.87	2.24	2.06	2.25	1.68	1.97
Floor plan	1.60	1.59	1.60	2.25	1.64	1.95
Group living spaces	1.73	1.94	1.84	2.13	1.78	1.96
Living room	1.47	1.88	1.68	1.50	1.37	1.43
Dining room	2.00	2.00	2.00	2.75	2.19	2.47
Private living spaces	1.60	1.94	1.77	2.25	1.87	2.06
Bedroom	1.73	1.82	1.78	2.25	1.89	2.07
Bathroom	1.47	2.06	1.78	2.25	1.85	2.05
Support spaces	1.96	2.24	2.09	2.08	2.18	2.13
Kitchen	1.53	1.76	1.66	1.75	2.00	1.88
Kitchen storage	1.93	2.24	2.09	2.00	2.18	2.09
Closet storage	2.40	2.47	2.44	2.50	2.36	2.43
Support systems	2.39	2.20	2.30	1.60	1.86	1.73
Lighting	2.40	1.94	2.17	1.66	1.50	1.82
Electrical outlets	1.47	1.32	1.40	1.25	1.56	1.40
Heating/cooling	2.06	2.18	2.12	2.00	1.79	1.90
Insulation	2.93	2.12	2.53	2.04	2.00	2.07
Windows	2.07	1.94	2.01	1.25	2.07	1.66
Mean Score	1.92	1.92		1.99	1.88	

^aPrice A, houses purchased between \$18,000 and \$24,999.

^bPrice B, houses purchased between \$25,000 and \$33,000

remarks was not limited. Tables 6 through 15 show the results of open-ended questions. Both mean scores and comments are discussed under each housing variable.

To determine overall homeowner satisfaction with the house (the dependent variable) subjects were asked, "Generally, how satisfied are you with this house?" Respondents owning lower priced manufactured units had the lowest mean score, indicating the greatest degree of satisfaction for the house in general. The least degree of satisfaction was expressed by owners of the higher priced manufactured house. The conventional house groups had equal scores (table 5).

Table 6 presents housing features liked best and least by the respondents. Over one-fourth (eighteen individuals) of the total sample said they liked the size (for the price) of the house best. Other preferences in declining order, were neighborhood, fire place, and homeownership.

The seven persons in manufactured homes who reported the support system as the feature they liked least were expressing their dislike for the total electric feature of the factory-built house. Six homeowners of conventional houses rated outdoor spaces as the feature they liked least because of their displeasure with a lack of yard space or the location of the house on the lot.

Realizing that a lack of housing satisfaction may have resulted in the homeowner having already made a change in the new house, the respondents were asked if they had made any improvements in or to

TABLE 6
HOUSING FEATURES LIKED BEST AND LEAST

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Features liked best about the house	64	32	32
Size for the price	18	10	8
Floor plan	11	7	6
Neighborhood	8	4	4
Fire place	7	3	4
Homeownership	7	3	4
Support spaces	5	1	4
Group spaces	3	2	1
Everything	2	2	-
Appearance	2	2	-
Air conditioning	1	-	1
Features liked least about the house	56	27	29
Support systems	9	7	2
Outdoor spaces	8	2	6
Location	6	3	3
Size	6	1	5
Private spaces	6	2	4
Support spaces	6	4	2
Garage	4	3	1
Expenses	4	3	1
Floor plan	3	1	3
Construction	3	3	-
Appearance	2	1	1
Price for size	1	-	1
Neighbors' opinions	1	1	-

the house. Most of the improvements were not made in the house, but to the outdoor spaces--patios, porches and landscaping. Ten respondents, however, had painted some or all of the interior. There was no difference in the number of improvements made by each housing group (Table 7).

TABLE 7

IMPROVEMENTS MADE BY HOMEOWNERS
TO THE HOME ENVIRONMENT

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Improvements made to:	42	21	21
Outdoor spaces	21	11	10
Painter interior	10	4	6
Added paneling	4	2	2
Group spaces	4	4	-
Support spaces	4	2	2
Support systems	4	-	4
Energy conservation measures	4	3	1
Added wall paper	3	-	3
Private spaces	3	1	2
Safety features	1	1	-
Painted exterior	1	1	-

Construction

When mean satisfaction scores were computed for responses to the question of how satisfied the homeowners were with the construction of their house, occupants of the lower priced manufactured group were most satisfied (table 5). Owners of the higher priced manufactured units were the least satisfied.

Twenty-nine persons made a comment regarding construction with the most frequent response concerned with overall quality. Exterior and finishing work were areas cited (table 8).

Exterior Design

The owners of the higher priced conventional units indicated they were the most satisfied with the exterior design of their houses,

TABLE 8
DESIRED CHANGES IN CONSTRUCTION

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Desired changes in construction	29	13	16
Quality	11	5	6
Exterior	6	2	4
Finishing work	4	3	1
Plumbing	4	1	3
Insulation	3	2	1
Bedroom	3	1	2
Kitchen	2	1	1
Living room	2	1	1
Garage	1	1	-
Entry	1	1	-
Dining room	1	-	1
Bathroom	1	1	-
Flooring	1	-	1

whereas the owners of the less expensive conventional units were the least satisfied (table 5). Forty-nine persons interviewed indicated a desire to change some aspect of the house exterior. The addition of brick to either part or all of the house was cited most frequently by both groups. Many of the houses in the suburb are not bricked on the back (table 9).

Floor Plan

The mean satisfaction scores for owners of manufactured units indicated they were the most satisfied with the floor plan. Most of the manufactured units have the same basic floor plan with the more expensive model having larger rooms. Owners of the less ex-

TABLE 9
DESIRED CHANGES IN EXTERIOR DESIGN

Comments	Total Responses	Owners of Manufactured Houses	Owners Conventional Houses
Desired changes with the exterior	49	25	24
Finish	21	11	10
Style	11	3	8
Outdoor spaces	9	4	5
Garage	4	4	-
Doorway	2	1	1
Roof	4	4	-

pensive conventional houses were least satisfied (table 5).

Table 10 shows forty respondents would change the floor plan in the house if they could. Increasing room size was the main desire for both groups. A separate utility area was the second most frequent reason given by owners of manufactured houses for changing the room arrangement. Some of the early factory-built houses had space for washers and dryers in the kitchen. Owners of conventional houses suggest a variety of changes for their floor plan.

Group Living Spaces

Two questions were asked each respondent about their satisfaction with the group spaces (living room and dining room) in their houses. Mean scores for satisfaction with these rooms were averaged to obtain the score for group spaces. This score revealed owners of lower priced, conventionally built units were the least satisfied while the lower priced manufactured units received the

TABLE 10
DESIRED CHANGES IN FLOOR PLAN

Comments	Total Responses	Owners of Manufactured Houses	Owners Conventional Houses
Desired changes in the floor plan	40	16	24
Increase room size	15	6	9
Room arrangement	14	6	8
Add a room	7	1	6
Support spaces	2	2	-
Add a fireplace	1	1	-
Change windows	1	-	1

highest satisfaction rating (table 5).

Seven individuals indicated they would like to make a change in their living room compared to twenty-nine who wanted to change the dining room (table 11). Space was the feature desired in both areas. The conventional house occupants especially wanted more space in the dining room. Both groups contained respondents who desired a separate dining room.

Private Living Spaces

To determine satisfaction with private living spaces in the home, questions were asked about the bedrooms and bathrooms. When mean scores are examined for this area, the owners of conventionally built houses appear to be less satisfied with the private living spaces than the owners of manufactured houses. Owners of the lower priced conventional units were the least satisfied, whereas owners of the lower priced manufactured units were the most satisfied (table 5).

TABLE 11

DESIRED CHANGES IN GROUP LIVING SPACES

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Desired changes in the living room	17	10	7
Increase room size	9	4	5
Fireplace	4	3	1
Location	2	2	-
Windows	1	-	1
Sound proof	1	1	-
Desired change in the dining room	29	10	19
Increase room size	14	3	11
Location	11	5	6
Carpet	2	1	1
Windows	1	-	1
Add paneling	1	1	-

Over half of the sample indicated that they would like to make a change in the private living spaces of their new homes (table 12). Twenty-five subjects said they would like to increase the size of the bedrooms while fourteen desired a larger bathroom. There were six owners of manufactured houses who wanted to change the light fixture in the bathroom while none in conventional units made the same request.

Support Spaces

The support spaces were identified for this study as the kitchen, kitchen storage and closet space. Mean satisfaction scores (table 5) indicated owners of manufactured units were better satis-

TABLE 12
DESIRED CHANGES IN PRIVATE LIVING SPACES

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Desired changes in bedrooms	35	15	20
Increase size	25	10	15
Increase storage	7	5	2
Location	2	1	1
Windows	1	-	1
Carpet	1	-	1
Desired changes in the bathrooms	38	21	17
Increase room size	14	5	9
Light fixtures	6	6	-
Increase storage	5	3	2
Arrangement	4	2	2
Windows	3	3	-
Carpet	3	1	2
Appearance	2	1	1
Vanity size	2	1	1
Shower/tub	1	1	-

fied with the kitchen than were owners of conventional houses. Neither group of homeowners were very satisfied with the closet space.

Suggested changes for the support spaces are listed in Table 13. Space was the major concern for fourteen respondents who desired a larger kitchen with additional storage (twenty-five). More owners of conventional houses requested the size increase than did owners of manufactured houses. Nearly half of both groups of homeowners wanted more closet space.

TABLE 13
DESIRED CHANGES IN SUPPORT SPACES

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Desired changes in the kitchen	40	22	18
Increase size	14	5	9
Storage	11	7	4
Separate utility room	10	8	2
Include eating area	2	2	-
Shape	2	-	2
Location	1	-	1
Desired changes in kitchen storage	38	19	21
More storage	25	10	15
Cabinet type	8	6	4
Workmanship	4	2	2
More drawers	1	1	-
Desired changes in closet space	32	17	16
Increase amount	29	15	13
Type	3	2	3

Support Systems

Questions concerning lighting, electrical outlets, heating and cooling, insulation, and windows were asked to ascertain homeowner satisfactions with support systems in the houses. The variable with the highest degree of satisfaction for both groups was the location and number of electrical outlets. According to the mean scores (table 5), respondents living in conventional units were more satisfied with support systems in their homes than were owners of manufactured units; mean score 1.73 compared to 2.30.

When each homeowner was asked if they would make any changes in the lighting, the electrical outlets or the switches in their homes, forty-seven of the sample indicated they would make a change (Table 14). Half of the owners of manufactured houses thought the lighting could be improved by the addition of a ceiling light in the living room. Seven owners of conventional houses wanted a living room ceiling light, also. Fifteen homeowners wanted more electrical outlets, either in the garage or on the outside of the house.

TABLE 14
DESIRED CHANGES IN THE ELECTRICAL SYSTEM

Comments	Total Responses	Owners of Manufactured Houses	Owners of Conventional Houses
Desired changes in electrical system	47	22	19
Type change			
Lighting	29	17	12
Outlets	15	8	7
Switches	2	1	1
Type lighting changes			
Ceiling	28	16	12
Indirect	2	-	2
Vanity	1	1	-
Fixture	1	17	1
Location of changes			
Living room	23	16	7
Exterior	6	3	3
Bedroom	5	2	3
Garage	5	2	3
Entry	3	-	3
Kitchen	3	-	3

As shown in Table 15, twenty-five of the homeowners desired a change in the heating/cooling system. Eleven subjects indicated they would like to change the type of fuel used to heat and cool their houses; five in the manufactured units, and six in the conventional units. More families in the manufactured houses wanted to increase the size of the heating/cooling unit.

TABLE 15
DESIRED CHANGES IN SELECTED SUPPORT SYSTEMS

Comments	Total Responses	Owners Manufactured Houses	Owners Conventional Houses
Desired changes in the heating/cooling systems	25	13	12
Type fuel used	11	5	6
Unit size	7	6	1
Unit location	3	-	3
Evenness of distribution	3	3	1
Vent location	2	2	-
Noise level	2	1	1
Desired changes in the insulation	36	22	12
Amount throughout	15	9	6
Amount in ceiling	11	9	2
Amount in walls	10	8	2
Storm doors/windows	3	2	1
Amount in garage	1	-	1
Desired changes in the windows	31	12	19
Number	11	5	6
Location	8	6	2
Construction	6	-	6
Size	5	1	4
Style	2	1	1

One-half (thirty-two) of the homeowners said they would like to improve the insulation in their houses or take other measures to increase the energy efficiency of their dwellings. Twenty-two respondents living in manufactured houses wanted to increase the amount of insulation in their homes compared to twelve subjects living in conventional houses.

Nearly half of the homeowners wanted some type of change regarding windows. Owners of conventional houses mentioned the number and construction most frequently, whereas the owners of manufactured units listed number and location. The manufactured houses have windows on the front and backside of the units only to facilitate moving.

Windows in the manufactured units are constructed slightly differently in that an expandable vinyl seam is used. No owners of these houses mentioned this difference positively or negatively. Six of the homeowners of conventionally built houses wanted improved window construction.

Factor Analysis

Each of the housing variables listed in hypothesis two was correlated to form a seven by seven pearson matrix (Table 16). Significant correlations indicated possible relationships between satisfactions with construction and exterior design, floor plan, group living spaces, support spaces, and support systems; between exterior design and floor plan, and group living spaces; between floor plan and support spaces; between private living spaces and

TABLE 16

CORRELATIONS BETWEEN SATISFACTIONS OF HOMEOWNERS
OF MANUFACTURED AND CONVENTIONAL HOUSES

Satisfaction Variable	Con- struction	Exterior Design	Floor Plan	Group Spaces	Private Spaces	Support Spaces	Support Systems
Construction	xx	.3135*	.2549*	.2195*	.0798	.2404*	.2230*
Exterior design		xx	.2688*	.2153*	.0156	.1394	.0333
Floor plan			xx	.0809	.1687	.3139*	.0079
Group living spaces				xx	.0098	.0512	.1271
Private living spaces					xx	.2749*	.1108
Support spaces						xx	.2605*
Support systems							xx

* Denotes significant Pearson product-moment correlation at the .05 level.

support spaces; and between support spaces and support systems.

The matrix was factored by principal components to identify major areas of variance. This separation was accomplished by rotating the vectors and analyzing the loadings (Table 17). This process revealed three groups: Factor one--exterior design and construction (fifty-seven percent), Factor two--floor plan and support spaces (twenty percent), and Factor three--support system (eighteen percent). Thus the list of housing variables could be reduced from seven to three.

TABLE 17
VARIMAX ROTATED FACTOR MATRIX

Variable	Factor 1	Factor 2	Factor 3
Construction	.5292*	.2071	.1984
Exterior design	.6083*	.1193	.1489
Floor plan	.3278	.4639*	.1329
Group spaces	.3862	.0456	.1415
Private spaces	.0295	.0751	.0751
Support spaces	.1386	.6444*	.2058
Support system	.0905	.1574	.6950*
Percent of variation	57.0	25.2	17.9

* Loadings greater than .400.

Chi-square Test

The chi-square test of independence was utilized to determine significant differences between homeowner satisfactions of manufactured and conventional houses. Results indicated there was no differences between the groups and the seven housing variables.

However when items within the space categories were tested, lighting (within support system) was found to be significant at the .02 level. Table 18 shows that seventeen occupants of conventional houses stated that they were very satisfied with the lighting in their house, whereas the same number of homeowners in the manufactured units said they were satisfied.

TABLE 18
LIGHTING SATISFACTIONS ASSOCIATED WITH MANUFACTURED AND CONVENTIONAL HOUSES

Method of Construction	Lighting Satisfaction							
	Very Satisfied		Satisfied		Less Satisfied		Total	
	N	%	N	%	N	%	N	%
Manufactured	7	29.2	17	70.8	8	50.0	32	50.0
Conventional	17	70.8	7	29.2	8	50.0	32	50.0
Total	24	100.0	24	100.0	16	100.0	64	100.0

$\chi^2 = 8.3$
d.f. = 3
Significance level .02

Although relationships exist between the satisfactions of homeowners of manufactured and conventional houses, the chi-square test of independence revealed that lighting, within the support system was the only significant variable. Therefore, hypothesis number two was accepted.

Summary of Hypotheses Findings

Evaluation of hypothesis number one by the chi-square and Fisher exact tests showed no significant relationships existed between the satisfactions of manufactured and conventionally built houses and their owner's demographic characteristics. Therefore, the hypothesis was accepted.

In analyzing hypothesis number two differences were noted in the changes recommended by owners of manufactured houses and conventional houses, but no difference was strong enough to be statistically significant. When the mean satisfaction scores were computed for the two groups, the owners of lower priced conventional units were the most satisfied and owners of the higher priced manufactured houses were the least satisfied.

Table 19 represents a ranking of the total mean satisfaction scores for the seven variables tested in hypothesis number two. These figures are compiled from responses scored in Table 5. Those living in factory-built units were most satisfied with floor plans of their houses and least satisfied with the support systems. Home-owners of the conventionally built houses were most satisfied with their support systems and least satisfied with the support spaces. Note that the differences in the mean indexes is only .01. When the chi-square test was used, only one variable, lighting satisfaction (within the support system), proved to be significant. Factors analysis identified three factors, (1) construction and exterior design, (2) floor plan and support spaces, and (3) support systems.

TABLE 19

RANKING OF TOTAL MEAN SCORES: METHOD
OF CONSTRUCTION CONTROLLED

Ranking of Variables for Owners of Manufactured Houses	Mean Score	Ranking of Variables for Owners of Conventional Houses	Mean Score
Floor plan	1.60	Support systems	1.73
Private spaces	1.77	Floor plan	1.95
Group spaces	1.84	Group spaces	1.96
Exterior design	2.06	Exterior design	1.97
Support spaces	2.06	Construction	2.04
Construction	2.14	Private spaces	2.06
Support systems	2.30	Support spaces	2.13
Total mean index	1.97		1.98

Since the findings indicate only slight differences between the satisfactions of homeowners of manufactured and conventional houses, hypothesis number two was accepted.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The demand for housing has been stifled by its accompanying price tag. To stimulate the home building business, as well as the economy, the Department of Housing and Urban Development initiated the Operation Breakthrough program in 1969. Operation Breakthrough was unique in that its major purpose was to encourage home builders to develop industrialized construction techniques. The underlying theory was if houses could be manufactured like automobiles the units could be produced in quantity at a lower price. The much publicized Operation Breakthrough program was not free of problems, but it did stimulate interest in industrialized housing. For example, the Manufactured Housing Institute forecasted sales of 290,700 units for 1976. Since the manufactured house is a new choice for housing consumers and also for home economics research, a study concerned with satisfaction of home-owners--manufactured versus conventional, seemed most appropriate.

For this study the sample consisted of sixty-four homeowners living within the Standard Metropolitan Statistical Area of Lubbock, Texas. All respondents were residing in houses of similar cost, size, age, and appearance. Half of the homeowners lived in manufactured units that were assembled in a factory and moved to one of

two adjacent subdivisions: Potomac Park (which contains both conventional and manufactured houses) or University Pines (all manufactured units). The other half of the sample consisted of homeowners who lived in conventionally built units all located in Potomac Park and randomly selected for this study.

An interview schedule developed by the researcher was utilized to gather data during personal interviews with each homeowner. The questionnaire was validated for content by Texas Tech University faculty members representing the areas of housing and interior design, home management, home economics education and mathematics; an owner of a manufacturing company; and a manager of a nation wide home building company. Pretesting the instrument with five homeowners led to a change in the order of questions regarding support systems.

The data were analyzed by computing frequency counts, percentages, mean satisfaction scores, factoranalysis, the chi-square and the Fisher exact tests. Findings were considered significant at the .05 probability level.

The findings indicated that the sample was composed primarily of white, young, educated, middle-income couples with one to three children. These findings reflect the typical conception of middle class suburbia.

The study tested two hypotheses. Hypothesis number one stated:

There is no significant relationship between homeowner satisfaction of manufactured and conventional houses and the following demographic characteristics:

- a. race
- b. age
- c. sex
- d. family composition
- e. family income
- f. occupation
- g. educational background
- h. previous housing
- i. housing tenure
- j. residence background

Results of chi-square and Fisher exact tests revealed no significant differences between the homeowners of manufactured houses and conventional houses and their demographic characteristics. Therefore, the hypothesis was accepted.

Hypothesis number two stated:

There is no significant difference between the owners of manufactured and conventional houses regarding satisfaction with the following areas:

- a. construction
- b. exterior design
- c. floor plan
- d. group living spaces
- e. private living spaces
- f. support spaces
- g. support systems

A mean satisfaction score was computed for each housing variable according to the method of house construction. When these scores were ranked, in descending order of satisfaction, the index revealed owners of manufactured houses liked the floor plan, private spaces, group spaces, exterior design, support spaces, construction, and support systems. Homeowners of conventional houses were most satisfied, in descending order, with support systems, floor plan, group spaces, exterior design, construction, private spaces, and support spaces.

The factor analysis of the data identified three factors which accounted for the variations in the overall satisfactions expressed by the owners of manufactured and conventional houses (1) construction and exterior design, (2) floor plan and support spaces, and (3) support systems.

When the chi-square test was computed, satisfaction with the lighting system was found to be significant at the .02 level. Since only one item in the support system was significant for the housing variables, hypothesis two was accepted.

Conclusions

Manufactured and conventional home owners replied they were satisfied to very satisfied with their new homes. The comparison of satisfactions is especially interesting regarding exterior design, floor plan, and construction. The manufactured home industry has frequently been criticized because of the sameness of the design--both exterior and interior. In this study, the mean satisfaction scores indicated that the two groups of homeowners were equally satisfied with the exterior design of their houses. In addition, the mean satisfaction scores for the owners of the manufactured houses ranked floor plan first. Floor plan was ranked second by the owners of conventional units.

When the industrialized, assembly-line approach is applied to the construction of houses utilizing unskilled labor whenever possible, some people assume that a low quality finish product will result. When the mean satisfaction scores were ranked for the

owners of conventional units, construction ranked fifth. Owners of manufactured units ranked it sixth. Although there are differences in the homeowner satisfactions, the differences are not great enough to be significant.

After computing frequencies for the open-ended questions and calculating the mean satisfaction scores, the owners of manufactured houses appeared to be the least satisfied with lighting in the living room, not having a separate utility room, having only all electric features and insufficient closets. The dissatisfaction with lighting in the living room can be corrected by including a ceiling light fixture. The newer manufactured houses already have a separate utility room. The comments regarding the desire for gas rather than electricity for heating and cooling were accompanied by statements concerning the cost of utilities. The owner of the house factory is now producing houses with energy-efficient features including added insulation and lowered ductwork. Incorporating more closets could be difficult.

The owners of conventional units were displeased more frequently with the dining room or lack of dining room, lack of adequate closets and kitchen storage, and window arrangements. These areas of dissatisfaction could be more difficult to eliminate.

Recommendations

The findings of this comparative study of manufactured and conventional houses suggest the need for additional research concerning the factory-built, single-family detached house and the

owner's characteristics. The writer recommends the following:

1. One control factor for this study was limiting the subjects to owners of houses made by one company. To evaluate the acceptability of manufactured homes, a study with five or more builders should be enlightening.

2. Vars' study indicated that people who have lived in a house two years or less are generally satisfied with the unit. For this study, no homes were not over three years old. A return to the same location after approximately five years could indicate to what extent the same residents are still living in the houses. The homeowners could be interviewed again regarding satisfactions with the dwelling.

3. Additional studies should be made which include a comparison of opinions of the husbands and wives.

4. A larger sample from subdivisions containing houses of both construction methods would be desirable. Such a sample should be available in coming years as the manufactured industry becomes larger.

5. A study should be conducted to compare the satisfactions of owners of manufactured units (made by the same company) in rural versus urban locations.

6. Additional study into the selection of a factory-built house as a second home could be of interest to the industry as well as to the consumer.

7. The questionnaire should be revised to include questions

to ascertain occupation of the spouse, length of residency in the present house, length of intended residency, reasons for selecting the type of house construction and expectations of construction quality. Ask if the respondent would recommend the person who constructed their house to someone else.

LIST OF REFERENCES

1. Housing Act of 1949. Statutes at Large, Vol.63 (1949).
2. Housing and Urban Development Act. Statutes at Large, Vol.82 (1968).
3. Davidson, Harold A. Housing Demand: Mobile, Modular, or Conventional. New York: Van Norstrand Reinhold Co., 1973.
4. Pynoos, Joh; Schafer, Robert; and Hartman, Chester., eds. Housing Urban America. Chicago: Aldine Publishing Co., 1973.
5. Fisher, Ernest M. Housing Market and Congressional Goals. New York: Praeger, 1975.
6. Downs, Anthony. Opening Up the Suburbs. New Haven: Yale University Press, 1973.
7. "Assembly Lines Bring Fresh Hope for Housing," Business Week, 26 October 1968, pp. 83-86.
8. Reidelbach, J.A., Jr. "Manufactured Housing-Big Trend for the 1970's." Professional Engineer, January 1971, pp. 14-21.
9. Dietz, Albert G.H. and Laurence S. Cutler, eds. Industrialized Building Systems for Housing. Cambridge, Mass.: The MIT Press, 1971.
10. Grubb, Clarence A. and Mary I Phares. Industrialization: A New Concept for Housing. New York: Praeger, 1972.
11. Robinson, Michael J. "Industrialized Housing: What is it... Really--and Where Is It Going?" House and Home, November 1973, pp. 64-71.
12. Faulkner, Ray Nelson and Sarah Faulkner. Inside Today's Home. 4th ed. New York: Hold, Rinehart, & Winston, 1975.
13. Reidelbach, John A., Jr. Modular Housing 1972. Annandale, Virginia: Modco Inc., 1972.

14. Ingersoll, John H. "The One Day House," House Beautiful,
October October 1968, pp. 132-135.
15. Peterson, Charles E., "Early American Prefabrication,"
Gazette des Beaux-Arts. XXXIII (January 1948). Cited
by Burnham Kelly, The Prefabrication of Houses, pp. 7-9.
Cambridge, Mass.: The MIT Press, 1951; reprint ed., 1964.
16. Kelly, Burnham. The Prefabrication of Houses. Cambridge,
Mass.: The MIT Press, 1951; reprint ed., 1964.
17. Bruce, Alfred and Harold Sandbank. A History of Prefabrication.
Raritan, N.J.: The John B. Pierce Foundation, 1943.
18. Bernhardt, Arthur D., "The Mobile-Home Industry: A Case Study
in Industrialization." In Industrialized Building
Systems for Housing, pp. 172-215. Edited by Albert
G.H. Dietz and Laurence S. Cutler. Cambridge, Mass.:
The MIT Press, 1971.
19. "HUD Requests Proposals for Operation Breakthrough." Construc-
tion Review XV (June 1969): 23.
20. "Can Breakthrough Breakthrough?" Architectural and Engineering
News, December 1969, pp. 38-41.
21. "Where Housing Will Break New Ground," Business Week, 7 March
1970, pp. 32-34.
22. Villecco, Marguerite. "Operation Breakthrough, Current
Progress Report." Architectural Forum, May 1971, pp. 58-
61.
23. Bender, Richard. A Crack in the Rear-View Mirror: a View of
Industrialized Building. New York: Van Nostrand
Reinhold Co., 1973.
24. Biderman, Charles. "Blueprint for Disaster," Barron's LII
(3 July 1972): 11-12.
25. "Third Annual Modular Survey," House and Home, March 1973,
pp. 75-89.
26. "Ready-Built Prices Going Up." Lubbock Avalanche-Journal,
21 March 1976, sec. 7, p. G1.
27. Tadjer, Dick J. and S.M. Sherfferman. "Engineer Involvement
in System Buildings," Professional Engineer, January
1971, pp. 16-17.

28. Webster's Seventh New Collegiate Dictionary, rev. ed. (1963), s.v. "Satisfaction."
29. Taneja, Vifay. "Housing Values and Satisfaction of Married Students." Ph.D. dissertation, Iowa State University, 1968.
30. Greninger, Sue Alexander. "Determinants of Housing Satisfaction." Ph.D. Dissertation, University of Illinois, 1970.
31. Smith, Wallace F. Housing: The Social and Economic Elements. Berkley: University of California Press, 1970. Cited by Sue Alexander. "Determinants of Housing Satisfaction." Ph.D. dissertation, University of Illinois, 1970.
32. Ater, E. Carolyn. "Interaction of Family Relationship Qualities and Managerial components," Journal of Marriage and the Family 34 (May 1972): 257-263.
33. McVoy, Edgar C., "A Method of Measuring the Satisfaction of Wants" Sociometry 7 (February 1942): 80-88.
34. Foreman, Linda Sue. "Satisfactions with Factory Build Housing." M.S. thesis, Iowa State University, 1972.
35. Thatcher, Sandra Kay Deibre. "Factory Build Homes and Their Acceptability to Residents of a Southeast Florida Community." M.S. thesis, Southern Illinois University, 1972.
36. Mood Ella Jo Thompson. "Mobile Home Consumer Satisfaction." M.S. thesis, Purdue University, 1972.
37. Christie, Sharon Crites. "A Comparative Study of Opinions of Mobile Home Residents in Baca County, Colorado." M.S. thesis, Iowa State University, 1972.
38. Lindamood, Suzanne. "An analysis of a Housing Alternative: Household Characteristics, Housing Satisfaction, Residential Mobility and Housing Expenditure of Mobile Home and Conventional Home Residents." Ph.D. dissertation, Cornell University, 1974. Abstract cited in Housing Educators Journal 1 (May 1974): 33-34.
39. Linke, Ruth A. "Development Housing and Family Needs," Forecast for Home Economics LXXV (October 1959): 12-13, 34.

40. Murdock, Adelaide Elizabeth. "Satisfaction of New Home-owners with the Livability of Their Homes." M.S. thesis, University of Mississippi, 1962.
41. Vars, Freda Teitzel, "Factors Related to Housing Satisfaction." Journal of Home Economics 61 (March 1969): 164-166.
42. Isler, Morton L.; Drury, Margaret J.; and Welborn, Clay H., "Housing Management: A Progress Report." Washington, D.C.: The Urban Institute, 1971.
43. McIntosh, Ellen Ruth, "Housing Goals and Satisfaction of Selected Low-Income Families, " M.S. thesis, University of Tennessee at Martin, 1973.
44. Bristow, Eleanor Perry. "Housing Solutions Made and Satisfaction attained by Professional Families Moving from One Community to Another and Some Factors Related to these Solutions and Satisfaction." M.S. thesis, Oklahoma State University, 1965.
45. Meeks, Carol Boyd. "Value Orientations in Planning the Selection of a Family Living Environment by 53 Middle Socioeconomic Homemakers." M.S. thesis, Ohio State University, 1969.
46. Yearns, Mary Holt. "Housing Satisfaction Associated with Patterns of Living in Rural Communities of Southwest Iowa." M.S. thesis, Iowa State University, 1972.
47. Williams, Bonnie Kay. "A Topology of Neighborhood Use as a Source of Satisfaction with the Near Environment." M.S. thesis, University of Nevada, Reno, 1972.
48. Birch, David, principal investigator, "America's Housing Needs: 1970 to 1980," Joing Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, Cambridge, Mass., December 1973.
49. Dale, Christine Coleman. "Satisfaction of New Homeowners with Different Building Materials Used in Their Homes." M.A. thesis, University of Mississippi, 1962.
50. Hurley, Patricia G. "The Suburban Living Room: Processes of Furnishing, Patterns of Use, and Satisfaction of Families." Ph.D. dissertation, Florida State University, 1966.

51. Meeks, Jeanell Gunn. "Factors Determining Satisfaction with Their Kitchens of a Selected Group of Homemakers in Booneville, Mississippi." M.A. thesis, University of Mississippi, 1970.
52. Tustin, Florence Boyer. "A Study Made in Sentinel, Oklahoma, of Present Locations and Performance of Homemakers' Preferences for the Location and Performance of Laundry Activities in the Home." M.S. thesis, Oklahoma State University, 1961.
53. Ford, William F., "Economic Recession and the Quality of American Life," paper presented at the 66th meeting of the American Home Economics Association, San Antonio, Texas, 21 June 1975.
54. "Housing: The New Look." Newsweek, 15 March 1976, pp. 78-81.
55. Harris, Dale. First Manufactured Homes, Inc., Lubbock, Texas, 16 April 1976.
56. Huneke, Henry L. First Manufactured Homes, Inc., Lubbock, Texas, 30 January 1976.
57. Backstrom, Charles H. and Gerald D. Hursh. Survey Research. Minneapolis: Northwestern University Press, 1963.
58. Nie, Norman H.; Hull, C.H.; Jenkins, J.G.; Steinbrenner, K.; Bent, D.H. Statistical Packages for the Social Sciences. 2nd ed. San Francisco: McGraw-Hill, 1975.

APPENDICES

A. Floor plans and sketches of Manufactured Houses	77
B. Questionnaire	80

1232 Sq. Ft.

FRONT ELEVATION "A"

FRONT ELEVATION "B"

FRONT ELEVATION "C"

1280 Sq. Ft.

1408 Sq. Ft.

QUESTIONNAIRE

Interviewer's No. _____ Address _____
 Interview Date _____ Sample No. _____
 Appointment _____ Group No. _____

HELLO. We are from Texas Tech University and we are conducting a survey about how well people are satisfied with their houses. This is part of a graduate research project in Home Economics. Your house was selected for the survey and we would like to ask you some questions to find out how satisfied you are with it. The interview should only take ten minutes.

1.A. Are you in the process of buying your house?

Yes _____ 1 Continue Interview
 No _____ 2 Terminate Interview

B. What was the value of your house when it was purchased?

2.A. What type of housing did you live in before moving to this house?

Apartment _____ Mobile Home _____ Other _____
 Duplex _____ House _____

B. Did you own or rent the unit?

Own _____ Rent _____ Other _____

HAND RESPONDENT CARD Here is a card listing degrees of satisfaction. Please use it when answering the questions about how satisfied, or happy, you are with this house. You just need to give me the number by your answer.

3. Generally, how satisfied are you with this house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

4. What do you like BEST about your house?

Price for size _____ Location _____
 Appearance _____ Size _____
 Other _____

5. What do you like LEAST about your house?

Price for size _____ Location _____
 Appearance _____ Size _____
 Other _____

- 6.A. How satisfied are you with the interior design of your house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

- B. If you could make a change in the interior design, what would it be?

Change finish _____ Change doorway _____
 Change style _____ Change roof _____
 Other _____

- 7.A. How satisfied are you with the floor plan (room arrangement) of your house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

- B. If you could make a change in the floor plan, what would it be?

Delete a room _____ Increase room size _____
 Add a room _____ Room arrangement _____
 Other _____

- 8.A. How satisfied are you with the:

	VS	S	FS	DS	VDS
Living room	1	2	3	4	5
Dining room	1	2	3	4	5
Kitchen	1	2	3	4	5

- B. If you could make a change in these areas, where and what would it be?

Living room _____
 Dining room _____
 Kitchen _____

9.A. How satisfied are you with the:

	VS	S	FS	DS	VDS
Bedrooms	1	2	3	4	5
Bathrooms	1	2	3	4	5

B. If you could make a change in these areas, what would it be?

Bedrooms _____

Bathrooms _____

10.A. How satisfied are you with the closet space in your house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

B. How satisfied are you with the kitchen cabinets?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

C. If you could make a change, where and what would it be?

Closet _____

Kitchen _____

11.A. How satisfied are you with the:

	VS	S	FS	DS	VDS
Lighting	1	2	3	4	5
Location of out-lets	1	2	3	4	5
Number of out-lets	1	2	3	4	5

B. If you could make any changes in lighting or outlets, would if be in the type:

		lights	outlets
Exterior	_____	(name _____)	(name _____)
Garage	_____	(name _____)	(name _____)
Entry	_____	(name _____)	(name _____)
Living room	_____	(name _____)	(name _____)
Dining room	_____	(name _____)	(name _____)
Kitchen	_____	(name _____)	(name _____)
Bedrooms	_____	(name _____)	(name _____)
Bathrooms	_____	(name _____)	(name _____)

12.A. How satisfied are you with the heating and cooling systems?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

B. If you could make any changes, what would they be?

Unit location _____	Thermostat location _____
Size of unit _____	Vent locations _____
Other _____	

12.A How satisfied are you with the insulation in your house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

B. If you could make any changes, where would it be?

Amount in wall _____	Amount above ceiling _____
Type _____	Amount below floor _____
Other _____	

14.A How satisfied are you with the number, location and size of the windows?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

B. If you could make any changes, what would they be?

Number _____	Construction _____
Location _____	Style _____
Other _____	

15.A. How satisfied are you with the construction of the house?

<u>Circle</u>	VS	S	FS	DS	VDS
	1	2	3	4	5

B. If you could make any changes, where and what would it be?

Exterior _____	Dining room _____
Garage _____	Kitchen _____
Entry _____	Bedrooms _____
Living room _____	Bathrooms _____
Other _____	

16. What improvements have you made to, or in the house?

Painted exterior _____	Added wall paper _____
Painted interior _____	Added paneling _____
Added a room _____	(name) _____
Other _____	

I would now like to ask you a few questions regarding your household. The answers you give are for statistical purposes ONLY. Everything you say will be strictly confidential.

17. Who occupies this house?

	Sex	Ages
Single individual	m f	
Couple with no children	m f	
Couple with 1 to 3 children	m f	
Couple with 4 or more children	m f	
One parent with 1 to 3 children	m f	
One parent with 4 or more children	m f	
Other (name)	m f	

18. What is your occupation? _____

19. Here is a card showing different income groups (Hand respondent INCOME CARD). Just give me the letter of the group which represents your total family income before taxes for 1975.

<u>Circle</u>	A	B	C	D	E	F	G
	1	2	3	4	5	6	7

20. What was the last grade you completed in school?

1-Grades 1 to 9	_____1
2-Some high school	_____2
3-High school graduate	_____3
4-Vocational school	_____4
5-Some college	_____5
6-College graduate or higher	_____6

21. Where did you spend most of your childhood. In a

1-Rural area less than 2,000 people	_____1
2-Small town 2,001 to 10,000 people	_____2
3-Town 10,001 to 20,000 people	_____3
4-City 20,001 to 50,000 people	_____4
5-Large city over 50,001 people	_____5

22. Additional comments volunteered by the respondent.

ASK FOR THE CARDS

Interviewer will indicate the following after completing the interview.

23. Sex of respondent: Male _____ 1
Female _____ 2
24. Race/ethnicity: White _____ 1
Mexican-American _____ 2
Black _____ 3
Oriental _____ 4
Other _____ 5

CARDS USED FOR QUESTIONNAIRE

A. Satisfactions

DEGREES OF SATISFACTION

1. Very Satisfied
2. Satisfied
3. Fairly Satisfied
4. Dissatisfied
5. Very Dissatisfied

B. Income

TOTAL YEARLY FAMILY INCOME
BEFORE TAXES

(Confidential)

- A. Under \$5,000
- B. \$ 5,001 to \$10,000
- C. \$10,001 to \$15,000
- D. \$15,001 to \$20,000
- E. \$20,001 to \$25,000
- F. \$25,001 to \$30,000
- G. Over \$30,001