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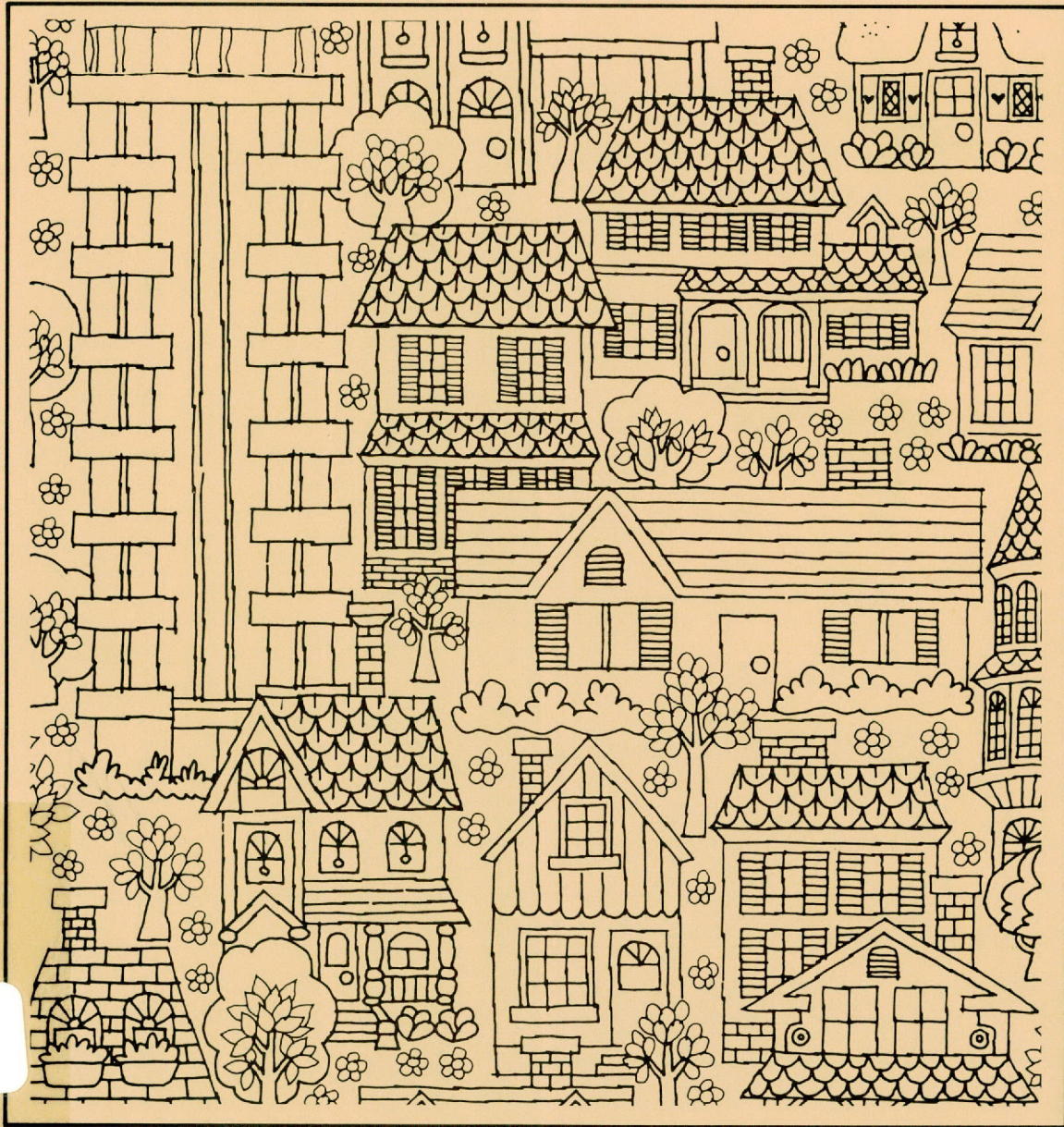
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**Satisfaction, Preferences
and Some Possible Determinants
Among Owners of Alternative
Types of Housing: A Comparative
Pilot Investigation**

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SATISFACTION, PREFERENCES AND SOME POSSIBLE DETERMINANTS

AMONG OWNERS OF ALTERNATIVE TYPES OF HOUSING:

A COMPARATIVE PILOT INVESTIGATION

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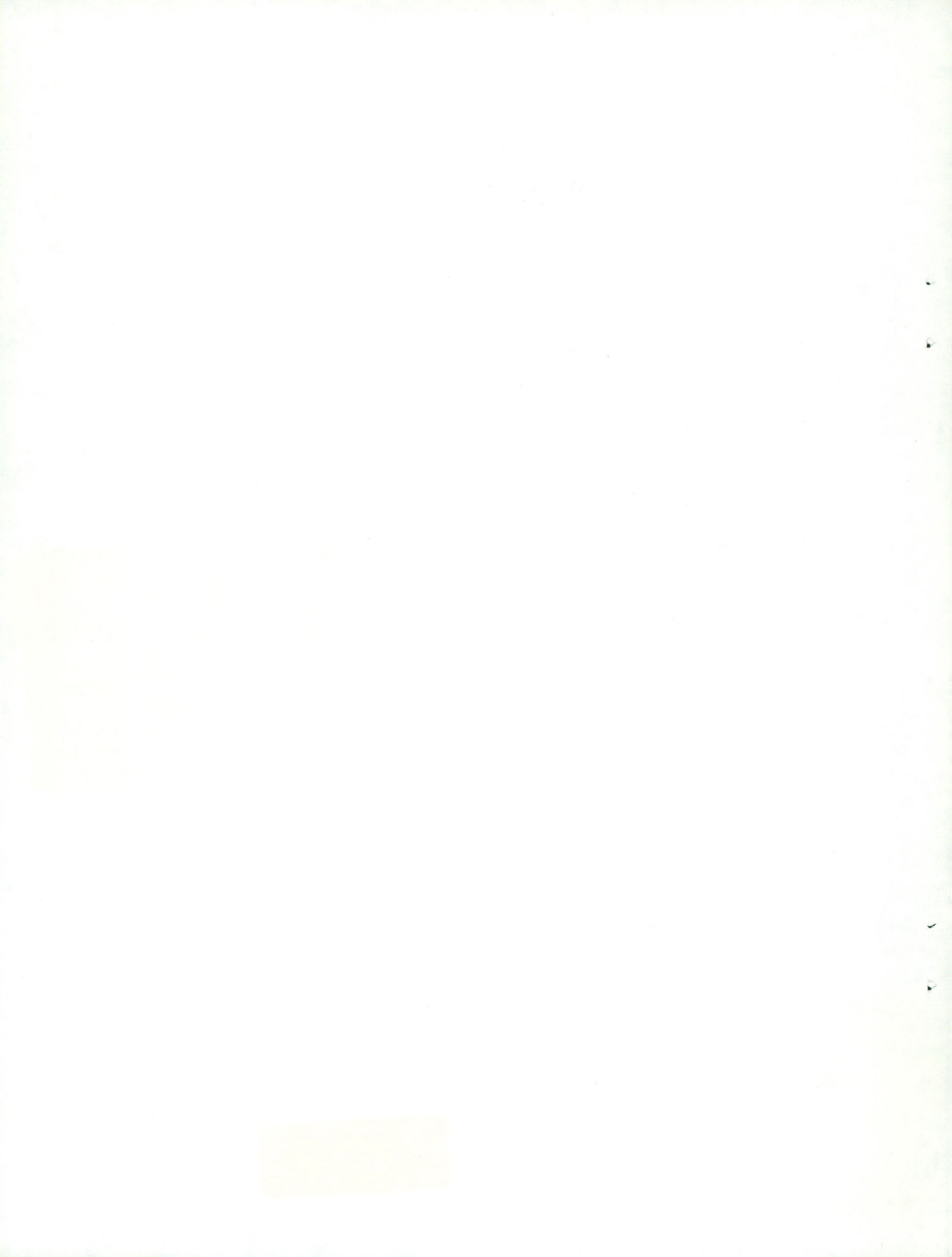
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SUMMARY OF IMPORTANT FINDINGS

Based on complete sampling of one condominium development, one townhouse settlement, and two subdivisions of single-family detached homes, the major findings of this study of differences among owner groups in satisfaction, preferences, and their determinants include the following:

1. The condominium households tended to be smaller and with fewer members who work full time compared to townhouse and single-family detached (SFD) households.
2. The condominium units studied were reported to be smaller in total square footage and in the numbers of bedrooms and baths.
3. The majority of condominium and townhouse owners reported membership in a homeowners association, and about half of the SFD homeowners reported membership.
4. Owners tended to be satisfied in general with their housing and with specific tangible and intangible housing attributes.
 - a. Condominium owners tend to be less satisfied than the other owner groups in terms of the dwelling's total size, closet space, parking, privacy and freedom from noise.
 - b. The portions of the owner groups who are members of a homeowner association were not found to differ in their satisfaction with aspects surrounding membership.
5. Owners of SFD homes expressed an overwhelming preference to purchase another one when in the market the next time, and over half of the townhouse and condominium owners also expressed a dominant preference for purchase of an SFD home and a slightly lower preference for purchase of a townhouse.
 - a. Very few owners of a townhouse or an SFD home expressed a preference to purchase a condominium, and fewer than 20 percent of the current condominium owners intend to purchase a condominium on the next cycle.
 - b. Approximately 40 percent of the townhouse owners and about 30 percent of the condominium owners intend to purchase a townhouse the next time in the market.
6. Two-thirds of the condominium and townhouse owners would again purchase a home where there is common ownership, whereas only one-fourth of the single-family detached owners would purchase a home with such provisions.
7. Over 50 percent of the condominium and townhouse owners, and over 35 percent of the SFD owners intend to remain in their homes two years or less.
8. Preferences for the various types of housing were largely unrelated to present owner satisfaction.

9. Of the prepurchase search factors, the owner groups did not differ in the number of days spent in active search for their home.
 - a. The condominium and townhouse owners tended to see fewer homes prior to purchase than did the SFD homeowners.
 - b. Approximately two-thirds of the homes seen by the townhouse owners were shown by a broker, whereas only 25 percent of those seen by condominium owners and 45 percent of those seen by SFD owners were with the accompaniment of a broker.
 - c. First-time buyers saw a fewer number of homes, saw a smaller percentage with a broker, and seemed to have a longer search period than did experienced buyers.
 - d. Prepurchase search factors do not serve to account for differences in owner satisfaction and preferences for alternative types of housing.

10. The owner groups placed great importance in having walk-in closets, a large master bedroom, a fireplace, and one bedroom per household member when searching for their present home.
 - a. Condominium and townhouse owners placed a much greater importance in having common lawn care and maintenance.
 - b. Condominium owners did not view having a kitchen which is large enough for a breakfast nook, a connected enclosed garage, a guest bedroom or study, and a private backyard as being very important in comparison with the evaluations of SFD and townhouse owners.
 - c. Housing attribute importance minimally accounted for differences in owner satisfaction.
 - d. Owner groups differed in the extent to which the importance of various housing attributes served to account for preferences regarding future purchase of particular types of housing.

11. Friends, advertisements, real estate salespersons, newspaper articles, books and pamphlets were solicited for information by the majority of owners in the process of searching for their present home, although a much smaller proportion of the condominium owners solicited information from brokers than did the other owners.

12. The owner groups did not differ in their attitudes regarding the security afforded by their home and aspects surrounding homeowner associations.
 - a. SFD owners hold more positive attitudes toward self-performed home maintenance/improvement activities than condominium and townhouse owners, although these attitudinal differences were found to be in part a function of group differences in their willingness to purchase a home involving common ownership.
 - b. The condominium owners hold less positive attitudes regarding their privacy and freedom from noise in their present home compared to the other owner groups.

- c. Attitudes toward environmental amenities, such as privacy and freedom from noise, are strongly related to owner satisfaction and to housing-type preferences to a lesser degree.
 - d. Attitudes toward self-performed home maintenance/improvement activities are weakly related to owner satisfaction, but are strongly related to preferences of condominium and townhouse owners regarding future purchase of alternative housing types.
 - e. Attitudes toward homeowner associations moderately account for owner satisfaction differences and only weakly explain housing-type preferences.
13. Owner groups did not differ in their frequency of playing tennis. However, condominium owners reported they swim, garden, and travel on business less regularly than other owner groups.
- a. The levels of participation in various activities were weakly and inconsistently correspondent with differences in owner satisfaction and preferences for alternative types of housing.
 - b. The more frequently townhouse owners travel on business, the greater is their overall satisfaction with their home; however, such was not the case for the other owner groups.

BACKGROUND AND PURPOSE OF STUDY

The enormous growth of the condominium and townhouse market over the past decade provides a strong indication that there is a sizeable segment of the total housing market both willing and able to invest in these relatively new options in ownership. A casual comparative assessment of recent homebuyers reveals several differences between purchasers of condominiums and single-family detached homes on the basis of general demographic and purchase-related characteristics, such as marital status, income and size of home purchased (U.S. League of Savings Associations 1981, p. 51).

Such regularly-collected data as those compiled by the League of Savings Associations are very useful for the market planning efforts of firms and agencies affiliated with the housing industry. Equally if not more important inputs to planning, however, are the levels of post-purchase satisfaction of new homeowners with the various product attributes or features of the housing option chosen, their preferences for future purchase of various types of housing, and the determinants of those levels of satisfaction and preferences. Across many industries, follow-up after the sale is unfortunately the exception and not the rule. In those cases where follow-up is done, it is often-times conducted within a month or so of the close, which is probably an insufficient time period to allow the purchaser to explore the pros and cons of the purchase.

A satisfied customer can be a tremendous asset to a firm and its industry, and a dissatisfied one, a distinct liability, particularly in the housing market where word-of-mouth communication is so powerful and extensive (Hempel and McEwen 1976). For the housing industry to enhance customer satisfaction

with housing purchases, it is necessary to determine the aspects surrounding purchase and use of a housing option that are satisfying and those that are dissatisfying so that needed adjustments can be made in future endeavors.

While it is impractical to effectively satisfy all consumers in all ways (even custom-built housing inevitably falls short of this goal), it is reasonable to expect that segments of the housing market have similar preferences and levels of satisfaction and that these market segments can be identified and described in terms of demographic and other characteristics.

Given that there is a continual need for valid and reliable information on owner satisfaction and preferences (as well as concerning individuals currently in the market), the issue becomes one of whether or not these data are regularly collected and available for use. The Survey Research Center at the University of Michigan collects attitudinal and satisfaction data regarding housing and other pressing issues through the longitudinal Survey of Consumer Attitudes. This survey is general in scope and thus is not of direct use to planning in the housing industry. Other longitudinal surveys also appear to be overly general for use in specific housing concerns.

Longitudinal tracking of consumer satisfaction with their housing and of their preferences for particular options and features would definitely serve an important function for the industry to use in detecting changes in satisfaction and preferences. While such study is desirable, the sizeable recurring cost makes this type of project prohibitive for a single firm and probably for the industry as a whole. As a result, it seems more appropriate to focus instead on specific portions of the housing industry which appear to have the greatest potential for assisting firms operating in the market to deliver the assortment of goods and services desired by consumers.

One area which seems to be very deserving of study is the condominium/townhouse market given its newness and rather unique characteristics of ownership rights, responsibilities and services (Leigh 1981, Leigh and Martin 1982). A detailed comparative examination of condominium and townhouse owners in relation to owners of single-family detached homes would prove helpful in finding out the strengths and limitations of each option as judged by the most important group--the owners themselves. Toward this end, a pilot investigation was conducted which examined facets of the ownership experience for each group and the factors contributing to those particular experiences. The formal, stated objective of this pilot study was:

to examine, on a comparative basis, selected owners of condominiums, townhouses and single-family detached homes in terms of their consumer behavior, preferences, and postpurchase satisfaction in order that commonalities and differences might be more fully understood.

The next section of this report provides a description of the manner in which the study was conducted, which will be followed by a presentation of the results, limitations and implications of this research.

METHODOLOGY

The approach used to conduct the study centered around four core areas--the types of housing to study, the location(s) in which to conduct the study, the survey instrument to be used, and the methods of sampling and interviewing to employ.

TYPES OF HOUSING TO STUDY

Apart from traditional single-family detached residences, two additional types of housing were selected for study--attached single-family residences (i.e., townhouses) and attached multi-family residences (i.e., condominiums). These non-traditional housing types are similar in that every homeowner in a unit holds title to the home occupied, shares ownership and control of the common property and facilities, and has a concomitant responsibility to provide financial support for maintaining the common areas (Harris 1981). The primary distinction between attached single-family and attached multi-family residences concerns the nature of the building construction; attached single-family dwellings share a common wall with adjacent neighbors, whereas attached multi-family dwellings are characterized by a given residence having neighbors above or below as well as usually adjacent to the residence. Moreover, attached multi-family residences tend to be smaller in total square footage of the living area than attached single-family residences.

The decision was made to focus on similarities and differences among owners of these three types of housing. Satisfaction and preferences for common ownership relative to exclusive private ownership should correspond closely between condominium and townhouse owners and differ between these owners and

single-family detached owners. Moreover, differences due to the proximity and number of adjacent neighbors and to square footage and other tangible housing attributes should provide for a broad-based comparison across housing types.

LOCATION FOR STUDY

Budgetary constraints dictated that the scope of the study be limited in terms of both geography and housing property values. To avoid introducing undue heterogeneity into the study sample, which could conceivably mask important differences between ownership types, the decision was made to select a geographical location which comprises all three types of housing with roughly comparable property values and extrinsic amenities.

Based on conversations with several members of the technical staff of the Texas Real Estate Research Center (TRERC), the metropolitan area of Houston was selected as the general geographical area from which a smaller, more restricted location would be selected. The Houston area housing market is diverse, with some residential neighborhoods having high densities of units per acre and others having very low densities. The high density areas are the locations where townhouse and condominium developments tend to be most prevalent (along with apartment complexes). They were believed to be poorly suited for a study of this nature since the nearby single-family detached residences differ markedly from the attached counterparts in terms of age of the dwellings, property values, and the likely length of time the property has been owned by a resident. Site visits substantiated this suspicion.

Suggestions provided by the TRERC staff and by R. Kent Dussair of CDS Research, Inc. led to the consideration of several recent, planned residential communities as possible locations for conducting the study. Each of these

communities is located within 40 miles of downtown Houston, and each has at least one condominium and one townhouse development in addition to detached single-family subdivisions of comparable age and price range. The external amenities, such as the geographical proximity to work and shopping, are common across the housing types within each community and serve to minimize any differences due to these factors.

The Woodlands, a planned residential and commercial venture of Mitchell Energy and Development Corporation, was the location selected for conducting the study. This community is currently composed of approximately 17,000 residents in approximately 5,000 homes.¹ The price range of the homes varies from \$40,000 to \$400,000, with the majority tending toward the lower end of the spectrum. Development construction of the community began in the early 1970s and is still in process.

While it will be tempting to extrapolate the findings from this study to similar planned communities in different locations, the reader is cautioned that generalization is limited to the planned community studied. It is believed, however, that general similarities and differences among the housing types generally should be similar to the Houston housing market and perhaps to other Texas metropolitan areas.

DEVELOPMENT OF SURVEY INSTRUMENT AND INTERVIEWING METHOD

The substantive areas to be addressed and the specific questions to be used were developed through an iterative process of interaction with the technical staff of TRERC. From the outset of the study, it was anticipated that

¹ Homes is used loosely to include single-family detached, single-family attached, and multi-family attached dwellings.

that telephone interviewing would be the mode of data collection, provided that suitable sample frames could be obtained at a minimal cost to TRERC. Questions were formulated with a telephone interviewing format in mind, and an effort was made to limit the number and depth of the questions to avoid infringement of a respondent's privacy and to minimize bias resulting from a lengthy and complicated questionnaire.

The final version of the questionnaire used to collect the data is shown in the Appendix. Eighteen multi-part questions, representing just over one hundred different measures for analysis, spanned numerous aspects of homeownership. The questions assessed such areas as prior ownership experience, the search process for the present home, and the focal aspects of the study--levels of satisfaction with the present home and preferences regarding alternative housing types.

As noted in the questionnaire, one of the household heads served as the respondent for the entire household and, as a result, responses to the attitude and satisfaction questions are only a partial representation of the entire household's respective attitudes and satisfaction. To the extent that areas of agreement and disagreement about housing have been discussed and resolved, however, the use of one household head as a spokesperson is defensible.

SAMPLE SELECTION, DESIGN AND RESULTS

In the planned community selected for study, a local branch of Interfaith, an interdenominational religious organization, annually publishes and distributes a directory of the community's inhabitants. For each household, the names and birthdates of the residents, their address, phone number and the

geographical location from which they last moved are provided. And perhaps most importantly, the subdivision (and type of dwelling) where a household resides is provided, which allowed for ease in stratification by housing type.

A new directory was scheduled for release in late July 1983. Through the invaluable assistance of Mr. Mel DuPaix, Director of Market Research for the Woodlands Group, and Ms. Laura Slinkard, computer analyst for the directory's sponsor, complete up-to-date lists were obtained of the residents of: (1) the one condominium development, (2) the older of two townhouse developments,² and (3) two subdivisions of single-family detached homes believed by the market research director to be of comparable price (generally \$50,000 - \$80,000). The four lists totaled 560 separate households of which 125 were condominiums, 135 were townhouses, 58 were single-family detached residences in one subdivision and 242 in the other.

The original plan was to obtain completed responses from 200 households -- 100 condominiums and townhouses and 100 single-family detached residences -- by sampling from a larger population. However, with only 560 residences provided in the lists, 46.4 percent of which are condominiums and townhouses, a census of all names with phone numbers listed was expected to be necessary to approach the 200 completed responses desired. This expectation was based on a predicted response rate of 30 percent (assuming 10 percent of the phone numbers will not be in service or will be listed incorrectly, 20 percent of the households will not own the residence, 30 percent will refuse to be interviewed, and 10 percent have unlisted phone numbers).

² The newer townhouse development was, at the time of data collection, less than a year old and not fully occupied.

A census of all names on the four lists was ultimately employed. As a way of minimizing the possibility of discussion between a respondent and a fellow owner who had not yet been contacted, all names on one list were phoned once before beginning another list, and callbacks commenced the next day following completion of the first round of calls made with a particular list to complete fieldwork as quickly as possible.

The sequence used was to begin with the list of condominium owners, then do the list of townhouse owners, and finally the two lists of owners of single-family detached homes. Condominium and townhouse owners were expected to be more difficult to find at home and, when contacted, would be more likely to refuse to be interviewed than would owners of traditional single-family detached residences. Thus, a number of callbacks would be necessary to approach 100 completed responses from these two groups.

In addition to a census sampling approach being necessary to achieve the planned sample size, the original stipulation that a household must have lived in the residence at least one year was relaxed somewhat to help toward this end. Residents qualified to be interviewed as long as they had lived in their residence for at least two months.

Telephone interviewing commenced July 27, 1983, and was completed August 7, 1983. Interviewing was restricted to the hours of 5:30 PM to 9:00 PM on weeknights and from 1:00 PM to 9:00 PM on weekends. The fieldwork was conducted by Kathi Jordan, a Ph.D. student in marketing at Texas A&M University and a professionally-trained and experienced interviewer.

The results of the interviewing phase are reported in Table 1. While a sampling procedure would have been more efficient for obtaining a broader range of households if more extensive lists had been available, the use of a

Table 1
Results of Telephone Survey Administration
by Type of Housing Owned

Outcome Category	Condominium Owners	Townhouse Owners	Single Family Detached: Subdivision #1 (SFD ₁) Owners	Single Family Detached: Subdivision #2 (SFD ₂) Owners	Total All Types of Housing
1. Completed Interview	55	31	18	96	200
a. Raw response rate (1 + 9)	(44.0%)	(23.0%)	(31.0%)	(39.7%)	(35.7%)
b. Effective response rate (1 + 6)	(52.9%)	(30.4%)	(33.3%)	(45.7%)	(42.6%)
2. Refused to be interviewed	19	35	20	70	144
a. Raw refusal rate (2 + 9)	(15.2%)	(25.9%)	(34.5%)	(28.9%)	(25.7%)
b. Effective refusal rate (2 + 6)	(18.3%)	(34.3%)	(37.0%)	(33.3%)	(30.6%)
3. Rentor	18	20	11	17	66
a. Percent of total	(14.4%)	(14.8%)	(19.0%)	(7.0%)	(11.8%)
4. Subtotal of Contacts made	92	86	49	183	410
a. Contact rate (4 + 9)	(73.6%)	(63.7%)	(84.5%)	(75.6%)	(73.2%)
5. No answer	$\frac{12}{\text{---}}$	$\frac{16}{\text{---}}$	$\frac{5}{\text{---}}$	$\frac{27}{\text{---}}$	$\frac{60}{\text{---}}$
a. Percent of total	(9.6%)	(11.9%)	(8.6%)	(11.2%)	(10.7%)
6. Total working, available telephone numbers	104	102	54	210	470
7. Phone number disconnected, not working or household moved	10	21	3	21	55
a. Percent of total	(8.0%)	(15.6%)	(5.2%)	(8.7%)	(9.8%)
8. Unlisted number	$\frac{11}{\text{---}}$	$\frac{12}{\text{---}}$	$\frac{1}{\text{---}}$	$\frac{11}{\text{---}}$	$\frac{35}{\text{---}}$
a. Percent of total	(8.8%)	(8.9%)	(1.7%)	(4.5%)	(6.3%)
9. Total: names listed in frame(s)	125	135	58	242	560

census approach carries the advantage that accurate estimates of completions, not-at-homes, and refusal rates could be obtained. As shown in Table 1, response rates differed markedly by type of housing, with the townhouse group having the lowest raw and effective response rates. The condominium group had the highest response rates, which was unexpected.

Eighty-six completed responses, or 43 percent of the total of 200, were owners of either a condominium or townhouse. This percentage is slightly lower than the proportion of condominium and townhouse listings relative to the total number of listings. The basis for the lower relative proportion of condominium and townhouse owners can be attributed primarily to the lower-than-expected response rate among the townhouse residents. Partial explanations for this occurrence can be obtained from Table 1: (1) nearly 25 percent of all names on the townhouse list had either an unlisted phone number or a disconnected phone -- since the lists were equally up-to-date, one can only assume that the townhouse resident group is a more security-conscious and mobile housing segment than single-family detached households and, to a lesser extent, than condominium owners; (2) the refusal rate among the townhouse listings was nearly as large as among the single-family detached groups; and (3) the percentage of households where there was no answer was the largest of the four groups.

Table 2 provides additional evidence of differences between townhouse residents and those living in other types of housing. The majority of the completed responses from townhouse owners required at least one callback for completion, whereas the majority of the respondents in the other owner groups were successfully reached on the first try. Taken together with the results of Table 1, one might speculate that townhouse owners lead more active life-

Table 2
 Number of Callbacks
 Required for Completion
 -Completed Interviews Only-

Number of Callbacks	Condominium Owners		Townhouse Owners		SFD1 Owners		SFD2 Owners		Total: all types	
	N	%	N	%	N	%	N	%	N	%
0	29	52.7	12	38.7	11	61.1	62	64.6	114	57.0
1	15	27.3	12	38.7	4	22.2	27	28.1	58	29.0
2	5	9.1	3	9.7	3	16.7	7	7.3	18	9.0
3 or more	<u>6</u>	<u>10.9</u>	<u>4</u>	<u>12.9</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>10</u>	<u>5.0</u>
Total Completed Interviews	55	100.0	31	100.0	18	100.0	96	100.0	200	100.0

Table 3
 Proportions of Respondents and Refusals
 who moved from selected geographical areas¹
 -Segmented by Type of Housing -
 (in percentages)

Geograph- ical area of last residence	Condominium Owners		Townhouse Owners		SFD1 Owners		SFD2 Owners		Totals: Groups Combined	
	Respondents (N=55)	Refusals (N=19)	Respondents (N=31)	Refusals (N=35)	Respondents (N=18)	Refusals (N=20)	Respondents (N=96)	Refusals (N=70)	Respondents (N=200)	Refusals (N=144)
Houston	20.0%	36.8%	41.9%	42.9%	38.9%	50.0%	20.8%	25.7%	25.5%	34.7%
Other lo- cation in Texas	58.2	36.8	6.5	11.4	22.2	0.0	39.6	34.3	38.0	24.3
Outside of Texas	20.0	26.3	38.7	28.6	38.9	45.0	36.5	38.6	32.5	35.4
Not Given	<u>1.8</u> 100.0%	<u>0.0</u> 99.9%	<u>12.9</u> 100.0%	<u>17.1</u> 100.0%	<u>0.0</u> 100.0%	<u>5.0</u> 100.0%	<u>3.1</u> 100.0%	<u>1.4</u> 100.0%	<u>4.0</u> 100.0%	<u>5.6</u> 100.0%

¹ obtained from community directory information.

styles and/or tend to have more demanding jobs which require late hours or extensive travel. Several of the questions included in the survey allowed for a partial assessment of this issue. These results will be addressed in a subsequent section.

Table 3 provides a comparison of owners who participated and those who refused to be interviewed in terms of the geographical location from which they last moved (as reported in the community directory). On the basis of the total distribution as well as the type of housing, there does not appear to be a consistent or large systematic difference between respondents and those who refused in terms of the general location of their last residence.

By way of conclusions regarding the results of the survey administration, it is important to provide a point of comparison for assessing the adequacy of the current effort. Kerin and Peterson (1983) recently reported results of an analysis of over 250,000 initial attempts to reach potential respondents by phone as part of work done by a major marketing research firm. While the results are not directly comparable to the results here, several noteworthy comparisons can be made. Kerin and Peterson report that 34.7 percent of all first-dialing attempts were "no answers." However, if calls made inadvertently to business numbers are deleted from the total number of dialing attempts, 36.2 percent were "no answers." By way of comparison, the corresponding total figure in the present study is 39.8 percent. No answer outcomes on the first dialing attempt ranged from 45.2 percent for the townhouse residence list to 43.2 percent for the condominium list to about 37 percent for the single-family detached residence listings. Admittedly, no attempt was made at the onset of fieldwork to collect data in a form more directly comparable to the extensive study of Kerin and Peterson. Nevertheless, the similarity in "no answer"

outcomes does provide a measure of credence for the sampling results obtained.

As with virtually all surveys, one can only assume that nonrespondents have similar characteristics to those of respondents and that their responses would have been similar had they participated. The reader should be cautioned against generalizing the findings of this study to the population of nonrespondents as well as respondents, even though there is no clear evidence to indicate distinct differences.

The next section provides a description of the results of the study, with particular attention paid to similarities and differences among owners of the various types of housing considered.

RESULTS

Discussion of the results of the study is organized into three major segments. First, results concerning the descriptive characteristics of the respondents and their housing will be presented. Second, results will be discussed which centered around the primary relationships of interest: (1) satisfaction levels with various aspects of homeownership and the home owned among owners of different types of housing, and (2) differences in preferences among owner groups for particular types of housing. Third, preference and satisfaction correlates, such as factors surrounding the search for and purchase of the present home, will be outlined in an attempt to isolate possible determinants of owner satisfaction and preferences.

HOUSEHOLD AND HOUSING CHARACTERISTICS

Household Demographics

Tables 4 and 5 provide a description of the households from which information was obtained. Table 4 shows results of analyses of variance for those factors which could be considered to be continuous variables; whereas the factors shown in Table 5 were more appropriately considered to be categorical variables which dictated the use of a Chi-square test.

Turning first to Table 4, the two measures pertaining to the size of the household are particularly demonstrative of large differences between households across housing types. Condominium households are clearly smaller than the others; in fact, over 50 percent are single-member households, and only 12 percent reported having three or more in residence. In contrast, 50 percent of the townhouse respondents live with one other person and 30 percent live

Table 4
 Analysis of Variance Results of Differences
 in Selected Household Demographic Characteristics
 Between Owner Groups

Demographic Characteristic	F-ratio	Degrees of Freedom (d.f.)	Mean Squared Error (MSe)	Means ¹				
				Overall	Condominium Owners (n)	Townhouse Owners (n)	SFD1 Owners (n)	SFD2 Owners (n)
<u>Size of House- hold</u>								
Number in household	13.93 ^b	3,195	1.17	2.40	1.64 (55)	<u>2.37</u> (30)	<u>2.83</u> (18)	<u>2.77</u> (96)
Number in household be- low 18	6.81 ^b	3,195	0.77	0.62	0.20 (55)	0.53 (30)	<u>0.78</u> (18)	<u>0.85</u> (96)
<u>Employment</u>								
Number in household that work full-time	3.58 ^a	3,195	0.48	1.27	<u>1.04</u> (55)	1.20 (30)	<u>1.39</u> (18)	<u>1.41</u> (96)
Number that work part-time	na	na	na	0.08	0.06 (55)	0.17 (30)	0.0 (18)	0.07 (96)
Number in house- hold that work (full or part time)	3.34 ^a	3,195	0.53	1.35	1.09 (55)	1.37 (30)	1.39 (18)	<u>1.48</u> (96)
Number in house- hold that are retired	0.32	3,195	0.20	0.14	0.11 (55)	0.17 (30)	0.22 (18)	0.14 (96)
<u>Time Spent in Transit to Work</u>								
Total Household (in minutes)	0.99	3,167	643.71	30.09	25.26 (47)	28.74 (23)	35.13 (16)	32.18 (85)
Chief Wage Earner (in minutes)	0.87	3,167	490.17	25.23	22.11 (47)	24.39 (23)	32.13 (16)	25.88 (85)

Key: na-not appropriate for testing due to violation of assumptions

^a p<.05
^b p<.001

Notes: ¹ Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Table 5
Chi-Square Results
of Selected Household Demographic Characteristics
Between Owner Groups

Demographic Characteristic	Condonimium Owners		Townhouse Owners		SFD1 Owners		SFD2 Owners		Total: All Types		Chi- Square	d.f.
	N	%	N	%	N	%	N	%	N	%		
<u>Household Income</u>												
Less than \$30,000	17	32.1	3	10.0	2	11.8	10	10.9	32	16.7	36.72 ^a	9
\$30,000 - \$39,999	19	35.8	4	13.3	3	17.6	24	26.1	50	26.0		
\$40,000 - \$49,999	12	22.6	3	10.0	4	23.5	24	26.1	43	22.4		
\$50,000 and over	<u>5</u>	<u>9.4</u>	<u>20</u>	<u>66.7</u>	<u>8</u>	<u>47.1</u>	<u>34</u>	<u>37.0</u>	<u>67</u>	<u>34.9</u>		
	53	100.0	30	100.0	17	100.0	92	100.0	192	100.0		
Number Missing	(2)		(1)		(1)		(4)		(8)			
<u>Occupation of Chief</u>												
<u>Wage Earner</u>												
Professional	23	46.9	14	56.0	7	41.2	45	51.1	89	49.7	na	na
Other White Collar	24	49.0	10	40.0	6	35.3	33	37.5	73	40.8		
Blue Collar	<u>2</u>	<u>4.1</u>	<u>1</u>	<u>4.0</u>	<u>4</u>	<u>23.5</u>	<u>10</u>	<u>11.4</u>	<u>17</u>	<u>9.5</u>		
	49	100.0	25	100.0	17	100.0	88	100.0	179	100.0		
Number Missing	(6)		(6)		(1)		(8)		(21)			

Key: na-not appropriate for testing due to violation of assumptions

^a p < .001

with two or more individuals. The majority of single-family detached households were three or more in number. These results compared quite favorably with the 1981 Home Buyer Survey conducted by the U.S. League of Savings Associations (1981). Regarding the presence of individuals under 18, the 85 percent of condominium households without children was not much different from the 70 percent for townhouse residences, but stood in stark contrast with the single-family detached households.

The employment results are very similar to the results on the size of the household in terms of the nature and extent of differences among owner groups. Of particular interest are the results regarding the number of retired individuals in households. Across all types of housing, approximately 10 percent of the households have at least one retired resident. However, no significant differences across owner groups were found.

The results on household income and occupation of the chief wage earner in the household, which are shown in Table 5, provide further evidence of demographic differences among the owner groups. Condominium households were clearly the lowest-income group, in part on account of the small percentage of those households with two or more wage earners. Single-family detached households and particularly townhouse households reported substantially higher incomes than the condominium group; the modal income category for the two former groups was \$50,000 and more. When the income results are considered together with results concerning the occupation of the chief wage earner, it is evident that the income differences do not appear to be largely a function of occupational differences between the housing groups. As a point of comparison for the income differences, the U.S. League of Savings Associations (1981) noted that the median income of 1981 condominium purchasers (\$44,210) was larger

than that of purchasers of single-family detached homes (\$38,183), which is the opposite of the findings in the present study. It should be noted, however, that the bulk of the condominium developments, which tend to be situated within major urban areas, are likely to be priced at a premium due to locational advantages. Hence, it is not surprising that higher median incomes would be characteristic of U.S. condominium purchasers in comparison with single-family detached home purchasers.

Prior Ownership Experience

Other characteristics besides demographics serve to differentiate owners of various types of housing. The proportion of first-time buyers for given types of housing is one factor that the 1981 Home Buyer Survey found to differ between purchasers of condominiums and single-family detached dwellings, with 16.1 percent of condominium purchasers being first-time buyers compared to 12.7 percent of purchasers of single-family detached homes (U.S. League of Savings Associations 1981). In the present study, 63.6 percent of the 55 condominium owners were first-time buyers, which is a substantially different figure from the 25.8 percent of the 31 townhouse owners, the 16.7 percent of the 18 owners of a single-family detached home in one subdivision, and the 31.3 percent of the 96 owners in the other subdivision (Chi-square = 24.74, $p < .001$, $df = 3$, $n = 200$). Given that the 1981 Home Buyer Survey involved purchasers of all types of homes and all economic categories of buyers, the substantially different percentages are not surprising. The direction of the percentage difference between condominium and single-family detached homeowners does, however, correspond to the 1981 survey.

Of the 123 respondents in the present study who were not first-time buyers, 53.7 percent had owned one home prior to the present one, 23.6 percent had owned two homes, and 36.6 percent had owned more than two homes. The percentage differences between owners of various types of housing were not statistically significant (Chi-square = 8.47, $p > .20$, $df = 6$, $n = 123$). However, large differences were noted among owners of different types of housing in terms of the number of years of prior ownership experience that this subgroup of owners had accumulated. The 19 condominium and 21 townhouse owners with experience averaged 18.74 and 21.09 years, respectively, compared to 11.73 years for the smaller group of single-family detached homeowners ($n=15$) and 11.61 years for the larger group ($n=66$) [$F(3,118) = 3.89$, $p < .05$, Mean Square Error (MSE) = 168.10]. Thus, the condominium and townhouse owners who have held title on other residences where they lived are likely to be older than comparable single-family detached homeowners; however, age was a demographic characteristic which was not assessed in the study and cannot be examined in a more direct manner.

One factor which should be of particular interest to the real estate community is the consistency of home purchases for this subgroup of owners. Twenty percent of the 20 condominium owners with prior experience and 17.4 percent of the comparable subgroup of townhouse owners reported that their previous housing purchases were the same type of housing as they presently own. In comparison, 86.7 percent of the smaller subgroup of 15 single-family detached homeowners and 87.9 percent of the larger group of 66 were consistent in the type of housing owned presently and previously. Differences among the condominium and townhouse subgroups with the two single-family detached subgroups are highly significant (Chi-square = 57.96, $df = 3$, $p < .001$). While

it is possible that the condominium and townhouse owners who were not consistent could have previously purchased a type of housing besides a single-family detached dwelling, in all likelihood these owners made a change from owning a single-family detached home to either a townhouse or a condominium. One particular goal for this study is to develop an understanding of the nature and extent of such changes in the type of housing owned and the underlying basis for its occurrence, and many of the analyses described later in this report were directed toward that end.

Present Ownership Characteristics

Owners of different types of housing were found to differ in the length of time they have lived at their present address. Condominium owners tend to have lived in their homes a shorter period of time than either of the single-family detached groups, who, in turn, have lived at their address a shorter period of time than townhouse owners [$F(3,196) = 16.87, p < .001, MSE = 339.58$]. Based on all 200 respondents, the respective average number of months for condominium owners, townhouse owners, and the two groups of single-family detached homeowners are 16.76, 46.0, 30.0 ($n=18$), and 26.52 ($n=96$) months. The basis for these sizeable group differences can be partially attributed to variations across groups in the completion dates of the respective housing units, but these differences also are likely a function of variations in turnover and mobility. A second measure which concerned whether the dwelling was new or used when it was purchased provides additional evidence of differences in ownership. Almost all (98.2 percent) of the condominium owners, 85.4 percent of the larger ($n=96$) and 66.7 percent of the smaller ($n=18$) groups of single-family detached homeowners purchased the dwelling when it was

new, whereas 54.8 percent of the townhouse owners purchased a new unit (Chi-square = 29.49, df = 3, $p < .001$, n = 200).

Housing Features

Table 6 provides results of analyses on the housing features which could be assumed to be continuous. In terms of self-reported total square footage, it should be noted that some responses were discrepant with the range of square footage supplied by the market research director of the development corporation: condominium units -- 680 to 1106 square feet; townhouse units -- 1000 to 1950 square feet; and single-family detached housing units -- 1300 to 1800 square feet. While the self-reported square-footage figures are important in that they reflect perceptions of the owners, they should not be considered to be accurate. Analysis of self-reported square footage on a per-household-member basis revealed a significant difference between condominium and townhouse owners, which tends to reveal that, at the least, townhouse owners on average think they have more space. The results on the number of bedrooms and baths tend to coincide with the differences found for the square footage reports. The greater average number of bedrooms within the larger of the single-family detached groups, when coupled with the associated square footage, indicates that the four-bedroom homes in this group are likely to have somewhat smaller rooms in comparison.

Table 7 presents cross-tabulation results of two measures of housing features which were not assumed to be continuous measures. The results on membership in a homeowner association indicate strong percentage differences among housing types. In large measure, the basis for the significant effect is due to a larger number of condominium and townhouse owners as a group re-

Table 6
 Analysis of Variance Results of Differences
 Between Owner Groups in Selected Housing Features of Unit Owned

Housing Feature	F	df	MSe	Means ¹				
				Overall	Condominium Owners (N)	Townhouse Owners (N)	SFD1 Owners(N)	SFD2 Owners(N)
Square Footage of the Heated and Cooled Area	89.68 ^b	3,171	84,500	1465.4	<u>865.50</u> (46)	<u>1753.00</u> (26)	<u>1736.00</u> (14)	<u>1648.90</u> (89)
Square Footage per Household Member	2.96 ^a	3,170	104911.25	706.89	<u>600.30</u> (46)	<u>817.22</u> (25)	666.84 (14)	737.29 [*] (89)
Number of bedrooms	117.41 ^b	3,196	0.322	2.72	<u>1.51</u> (55)	<u>2.90</u> (31)	<u>3.11</u> (18)	<u>3.27</u> (96)
Number of Baths	51.44 ^b	3,196	0.170	1.81	<u>1.22</u> (55)	<u>2.00</u> (31)	<u>2.06</u> (18)	<u>2.03</u> (96)

Key: a p<.05
 b p<.001

Notes:¹ Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Table 7
Chi-Square Results of Differences in
Selected Housing Features
Between Owner Groups

<u>Housing Feature</u>	<u>Condominium Owners</u>		<u>Townhouse Owners</u>		<u>SFD₁ Owners</u>		<u>SFD₂ Owners</u>		<u>Total: All Types</u>		<u>Chi-Square</u> (df=3)
	N	%	N	%	N	%	N	%	N	%	
<u>Membership in a Homeowner Association</u>											
Member	44	84.6	23	74.2	9	50.0	56	58.9	132	67.3	13.22 ^a
Not a Member	8	15.4	8	25.8	9	50.0	39	41.1	64	32.7	
Totals	52	100.0	31	100.0	18	100.0	95	100.0	196	100.0	
Don't Know	(3)		(0)		(0)		(1)		(4)		
<u>Enclosed Parking</u>											
Have	18	32.7	26	83.9	17	94.4	95	99.0	156	78.0	na
Do Not Have	37	67.3	5	16.1	1	5.6	1	1.0	44	22.0	
Totals	55	100.0	31	100.0	18	100.0	96	100.0	200	100.0	

Key: ^ap<.01

na-not appropriate for testing due to violation of assumptions

porting membership than the group of single-family detached homeowners. It is somewhat surprising, however, that any of the condominium and townhouse owners reported that their household is not a member since it is a standard facet of ownership where there is common property. Regarding the presence of enclosed parking, condominium owners differed substantially from the other owner groups; however, it is unclear as to why there was not total consensus among this group in their reports since the condominium units were built with carports. It is somewhat understandable though for an owner to respond in a biasing manner as though they have a housing feature which was desired but not received (e.g., the condominium owners reporting they have an enclosed garage). The townhouse respondents, on the other hand, were probably accurate in their assessments because the units were built with a one-car enclosed garage and an attached carport; owners which utilize the enclosed portion for storage and the carport for parking the car would likely have responded "no" to the question. The same can be said about the two "no" respondents from the groups of single-family detached homeowners whose enclosed garage portion might have been converted into a play area for the children or the like.

Summary

Taken together, the results concerning household and housing characteristics provide a general indication that somewhat distinct characteristics of the housing options studied serve different market segments. These segments are defined on the basis of their household demographics and of their prior and present homeownership experience. Subsequent sections concern the identification of similarities and differences among these segments on other dimensions.

SATISFACTION AND PREFERENCES

Satisfaction Differences

Table 8 presents results of survey questions that concerned the levels of overall owner satisfaction with the housing and with specific housing attributes. Each of these questions was measured on a five-point scale which ranged from dissatisfied (1) to satisfied (5) with a neutral point (3).

For the measure of overall satisfaction, only 4 percent of the total sample responded on the dissatisfied side of the continuum and 8.5 percent responded at the midpoint. While the respondents were largely overall satisfied with their housing, the comparison among owner groups indicated the single-family detached homeowners were more satisfied than the condominium owners and, to a lesser extent, than the townhouse owners.

The 14 measures of satisfaction with specific housing attributes are divided into three groups: (1) measures which form an additive (or summated) scale because the items all concern tangible housing attributes and were found as a group to be reasonably consistent internally as measured by Cronbach's coefficient alpha (Cronbach 1951); (2) measures which form an additive scale because they relate to intangible attributes and were found to be internally consistent; and (3) other satisfaction items not found to be reliable additions to either of the two scales above and are not internally consistent as a group themselves or any smaller combination thereof. An unweighted additive scale was constructed with the set of reliable tangible attributes, and one was constructed with the set of reliable intangible attributes, both of which were used for analysis purposes. In addition, an additive scale of all 14 items was constructed and analyzed since the reliability assessment indicated that none of the items should be deleted.

Table 8
Analysis of Variance Results of Differences Between Owner
Groups in Their Satisfaction with Housing Attributes

Measures of Satisfaction ¹	F	df (3,196) ²	Mean Squared Error	Means ⁸				
				Overall	Condominium Owners(N) ³	Townhouse Owners(N) ⁴	SFD ₁ Owners (N) ⁵	SFD ₂ Owners (N) ⁶
Overall Satisfaction (item) ⁷	2.66 ^a		0.79	4.41	<u>4.15</u>	4.35	<u>4.56</u>	<u>4.55</u>
<u>Satisfaction with Tangible Attributes</u>								
1. Size of Heated and cooled area	3.49 ^a		1.04	4.33	<u>3.98</u>	<u>4.61</u>	<u>4.61</u>	<u>4.39</u>
2. Size of Master Bedrooms and Baths	0.87		1.59	4.08	4.27	3.97	3.78	4.05
3. Number of Bedrooms and Baths	2.18		1.10	4.39	4.16	4.71	4.17	4.45
4. Closet Space	9.73 ^c		2.13	3.72	<u>2.87</u>	<u>3.94</u>	3.44	<u>4.18</u>
5. Kitchen Facilities	1.21		1.08	4.43	4.42	4.48	4.83	4.33
6. Den/Living Area	3.35 ^a		0.76	4.59	<u>4.38</u>	<u>4.35</u>	4.56	<u>4.78</u>
7. Quality of construction and trimwork	3.82 ^a	3,195	2.28	3.62	<u>3.33</u>	<u>3.16</u>	3.29 (17)	<u>3.99</u>
8. Parking	8.99 ^c		1.73	4.09	<u>3.38</u>	3.97	4.11	<u>4.53</u>
Summated Scale (Cronbach alpha = .69)	5.95 ^c	3,195	30.16	33.21	<u>30.80</u>	33.19	32.59 (17)	<u>34.70</u>
<u>Satisfaction with Intangible Attributes</u>								
1. Privacy	5.94 ^c		0.86	4.62	<u>4.20</u>	<u>4.81</u>	4.44	<u>4.82</u>
2. Freedom from Noise	9.67 ^c		1.09	4.51	<u>3.87</u>	<u>4.65</u>	4.56	<u>4.81</u>
Summated Scale (Cronbach alpha = .71)	10.05 ^c		2.97	9.12	<u>8.07</u>	<u>9.45</u>	9.00	<u>9.64</u>
<u>Other Satisfaction Items</u>								
1. Location	1.48		0.52	4.82	4.93	4.61	4.94	4.79

(Table 8 continued)

	F	df	MSe	Overall	Condominium	Townhouse	SFD ₁	SFD ₂
2. Security	0.89	3,189	0.30	4.82	4.76 (51)	4.73 (30)	4.93 (17)	4.86 (95)
3. Costs of ownership	2.07	3,193	1.26	4.25	4.22	3.83 (30)	4.18 (17)	4.41 (95)
4. Appreciation Potential	3.34 ^a	3,181	1.14	4.45	4.24 (49)	<u>4.10</u>	4.38 (16)	<u>4.70</u> (89)
<u>Overall Sum-</u> <u>rated Scale:</u> <u>All 14 Items</u> <u>(Cronbach</u> <u>alpha=.77)</u>	6.62 ^c	3,173	55.16	61.00	<u>57.39</u> (46)	60.21 (29)	59.92 (13)	<u>63.28</u> (89)

Notes: ¹ Items measured on a five-point scale where 1=dissatisfied, 2=somewhat dissatisfied, 3=about equally satisfied and dissatisfied, 4=somewhat satisfied and 5=satisfied.

² df=3,196 except where noted.

³ n=55 except where noted.

⁴ n=31 except where noted.

⁵ n=18 except where noted.

⁶ n=96 except where noted.

⁷ Question 5 on questionnaire.

⁸ Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Key: ^a $p < .05$

^b $p < .01$

^c $p < .001$

Examination of the overall means for the 14 separate satisfaction items reveals substantial differences among them, ranging from a low of 3.62 for the item concerning satisfaction with the quality of construction and trimwork to a high of 4.82 for the items concerning satisfaction with the location and with security. The highly positive level of satisfaction with the security of the homes is particularly worthy of note since a recent newspaper article reported that security and energy efficiency are Houston homebuyers' most important concerns (Donovan 1983). It should be mentioned that the item with the lowest mean, satisfaction with the quality of construction and trimwork, had only one-fourth of the respondents reporting they were dissatisfied or somewhat dissatisfied. Thus, the owners interviewed were satisfied with the attributes of their housing which were assessed.

Results for the summated scale of satisfaction with tangible attributes exhibit strong differences among owner groups, with condominium owners clearly being the least satisfied of the owner groups. Examination of the results for the separate items comprising this scale reveals that several items seem to have been major contributors to the strong effects for the scale. In particular, the levels of satisfaction with parking and closet space differ substantially between condominium owners and the larger group of single-family detached owners and, to a lesser extent, the other two groups of respondents. For the tangible attributes which were significant at the .05 level, the averages for the condominium group were consistently less positive than those for the larger of the single-family detached homeowner groups.

With the exception of the total size of the heated and cooled area and the number of bedrooms and baths, the results on the examined tangible attributes are not ones which can be readily generalized to other locations for

making comparisons of owners of different housing types. It is reasonable to expect, though, that condominiums tend to be smaller in total size than other housing types. Therefore, the results showing that condominium owners are the least satisfied group with the total size of their dwelling should replicate across other populations. It also is noteworthy that the results on satisfaction with the number of bedrooms and baths, another likely generalizable attribute, did not reveal significant differences even though the actual number of bedrooms and baths differed among housing types. Presumably the owners purchased a dwelling with the number of bedrooms and baths desired.

Results for the summated scale of satisfaction with intangible housing attributes and for the separate items indicate strong and consistent differences among owners of condominiums and owners of townhouses and the larger of the two single-family detached groups. Not surprisingly, condominium owners were the least satisfied with the intangible housing attributes of privacy and freedom from noise. While these results are to be expected, builders/developers could enhance their marketing effort to the extent that they are able to incorporate features into the design of condominium units which would place condominiums on a more even footing with single-family units on these dimensions.

The four satisfaction items that were not found to be internally consistent with either the tangible or intangible attributes satisfaction scales generally provide few additional insights above and beyond the other items addressed. The absence of significant differences across types of housing units concerning owner satisfaction with the location of their housing essentially coincides with the results enumerated in Table 4 regarding the time spent in transit to work. Given the planned community is located outside of the city

limits of Houston and the owners likely made a deliberate choice to live away from the hustle and bustle of city life, the commonality of location satisfaction is not surprising. Likewise, similar security standards of the developer and/or the housing market imposed on the builders in the area likely contributed to the absence of differences. The results for these two items are likely unique to the planned community studied and, perhaps, to the Houston housing market; in fact, location satisfaction would most definitely be more variable if a larger geographical area were the focus of study. Satisfaction with security of the home also would likely vary across more diverse locations. The item concerning satisfaction with the potential for appreciation of the home owned was the only one of these items found to differ significantly across owners of different housing types; however, the underlying basis for the effect is likely a function of the particular groups of owners studied.

The results for the summated scale of the 14 attribute satisfaction items coincide with the satisfaction results for the two separate dimensions of attributes--tangible and intangible. Moreover, the reliability analysis indicated that the scale reliability shows good internal consistency and that none of the 14 items should be deleted. Thus, the four items not found to be reliable for either satisfaction scale (e.g., tangible or intangible attributes) do appear to be somewhat similar to items used in scale construction of these subsidiary scales.

The correlation between the summated overall satisfaction scale and the single item of overall satisfaction is .544($p < .001$, $n = 177$), which indicates that nearly 30 percent of the variability in the overall satisfaction measure is accounted for by a composite of the 14 items. On the other hand, the correlation of the summated satisfaction scale of tangible attributes with the

single-item overall satisfaction measure is .545 ($p < .001$, $n = 199$), whereas the summated satisfaction scale for intangible attributes was correlated .30 ($p < .001$, $n = 200$) with the single-item overall satisfaction measure. Thus, the composite of eight tangible attributes seems to account for the bulk of the variability explained by the 14-item summated overall satisfaction scale.

Of the individual attribute satisfaction measures, satisfaction with the quality of construction was the strongest contributor to overall satisfaction ($r = .58$, $n = 199$); however, several other items also were found to have correlations above .30 with overall satisfaction, including the levels of satisfaction with the total size of the dwelling, the number of bedrooms and baths, the living area, parking, and freedom from noise. Moreover, only satisfaction with security, yard care and maintenance were not found to be positively and significantly related to overall satisfaction. Each of the attributes assessed appears to contribute to overall satisfaction and, therefore, no one factor should be discounted to a great extent by a builder.

To determine if the satisfaction differences noted between condominium owners and the other groups are due to either the smaller total square footage of condominiums or the greater incidence of first-time buyers within the ranks of condominium owners relative to the other groups, each of the satisfaction measures reported in Table 8 was subjected to an analysis of covariance with square footage and whether or not the owner was a first-time buyer. With the exception of the tangible-attribute satisfaction summated scale and the individual intangible attribute, privacy satisfaction, the initial removal of the effects of square-footage differences and of proportionate differences of first-time buyers served to have very little impact on the significance of mean differences found and reported in Table 8. In the case of the summated

satisfaction scale with the eight tangible attributes, introduction of the covariates served to reduce considerably the significance level of the owner group effects [$F(3,193) = 3.60, p < .02, MSE = 29.13$] as a result of the significant covariate, proportionate differences of first-time owners [$F(1,193) = 5.54, p < .02$]. The average of first-time homeowners was just short of two scale-points lower than the non-first-time homeowners and resulted in adjusted means for the owner groups which approached the overall mean for the scale. For the item, privacy satisfaction, the effect of partialing the total square footage [$F(1,194) = 2.85, p < .10, MSE = 0.82$] resulted in a somewhat reduced effect of owner-group differences [$F(3,194) = 4.10, p < .01$], although the impact on the mean differences among the groups was minimal. In general, the differences in satisfaction among condominium owners and the other groups cannot be attributed exclusively to their having less total square footage or to their general lack of prior ownership experience.

Table 9 presents results of analyses of the measures of satisfaction with facets surrounding membership in a homeowner association, based on the subgroup of owners who are members. As noted in Table 7, there are 137 of the 200 owners who reported their household is a member of an association. For the analysis results shown in Table 9, 16 of these members chose not to respond to the item concerning their satisfaction with the monthly dues; 24 did not respond to the measure regarding the level of satisfaction with the association in general; and approximately one-half did not respond to the satisfaction measures associated with yard care and maintenance because these services are not being performed. While the missing data points for the service-related items are justifiable, the nonresponses to the measures of overall satisfaction with the association and with the monthly dues raise some ques-

Table 9
 Analysis of Variance Results of Differences Between Owner Groups in
 Their Satisfaction with Homeowner Association
 -Subgroup of Members-

<u>Association Factors</u> ¹	<u>F</u>	<u>df</u>	<u>MSe</u>	Overall	Means			
					Condominium Owners (N)	Townhouse Owners (N)	SFD1 Owners (N)	SFD2 Owners (N)
Overall Satisfaction with the association	2.49	3,109	2.16	3.83	3.33 (39)	3.96 (23)	3.80 (5)	4.20 (46)
Monthly Dues	2.96 ^a	3,117	1.84	3.77	3.48 (42)	3.87 (23)	2.88 (8)	4.12 (48)
Yard Care Services	1.89	2,68	1.51	4.07	3.86 (42)	4.27 (22)	-	4.71 (7)
Other Maintenance	0.91	3,66	1.66	4.06	3.98 (40)	3.95 (22)	5.0 (2)	4.67 (8)

Key: ^ap<.05

Notes: ¹ Items measured on a five-point scale where 1=dissatisfied, 2=somewhat dissatisfied, 3=about equally satisfied and dissatisfied, 4=somewhat satisfied, and 5=satisfied.

tions concerning the likely responses these owners might have given if they had responded because the owners were, for the most part, very cooperative in responding to the survey. Perhaps they were dissatisfied with the association and did not respond to avoid the prospect of being asked to provide detail. On the other hand, these nonrespondents may not be active participants in their association or use any recreational facilities which are provided, and, as a result, they may not have felt qualified to respond. At any rate, the results were not particularly illuminating or revealing of major differences among owner groups, which is somewhat surprising given the different functions served by an association when there is or is not common property involved.

Preferences for Different Types of Housing

Respondents were asked the probability of purchasing the same type of housing (i.e. single-family detached, single-family attached, or multi-family attached), and they were then asked the respective probabilities of purchasing each of the other remaining types (see question 13 on questionnaire in the Appendix). While these three questions should be considered to be related to and/or conditional on one another, each should also be viewed as separate and distinct since there was no stipulation made on the respondent for the three possibilities to sum to 100 percent.

Two sets of measures were constructed from the three probability measures to also consider conditional aspects as well as to view each measure as distinct in analysis. One set of measures was simply formed by restricting each individual respondent's answers to the three questions to sum to 100 percent. The other set was formed by assigning a probability of 100 percent if an individual's probability of purchase for a particular housing type was larger than

the corresponding probabilities for the other two types (which were in turn assigned probabilities of 0 percent); in cases where dominant housing types were not clearcut for an individual respondent (i.e., tied responses), the unadjusted probabilities were used. This latter set of measures can be considered as indicating the proportion of respondents which prefer one housing type relative to the other two, hereafter labeled the relative preference dominance.

Results for these three sets of measures examined across owner groups are given in Table 10. As noted in the table, mean differences among owner groups were found to be strongly significant for each probability measure across the three sets of measures, regardless of the particular assumption used to construct the measures. Rather than belaboring the nature of the mean differences among owner groups which do not fully take into account the conditional nature of the probability measures, a focus on the relationships among the results for the measures both within and across owner groups seems to be of greater potential interest and use to the reader. It should be mentioned briefly, though, that Multivariate Analysis of Variance (MANOVA) results revealed strongly significant effects due to owner-group differences when each set of house-type purchase probabilities was examined.³

³ The relevant statistics for analysis of the respective measures are:

	Wilk's Lambda	Approximate F	Degrees of Freedom	Significance Level
Unadjusted Probabilities	.657	10.40	9,465	.0000
Measures Sum to 100 percent (Multi-family Attached 6,378 .0000	Deleted for analysis)		.670	13.95
Relative Preference Dominance (Multi-family Attached Measure Deleted for analysis due to redundancy) 6,378 .0000			.730	10.72

Table 10
Analysis of Variance Results of Differences Between Owner
Groups in Their Reported Probabilities of Purchasing
Particular Types of Dwellings on the Next Housing Purchase

Probability Measure	F	df	MSe	Overall	Means ²			
					Condominium Owners (N)	Townhouse Owners (N)	SFD ₁ Owners (N)	SFD ₂ Owners (N)
<u>Unadjusted Probabilities</u>								
Single-family Detached	20.84 ^b	3,193	0.10	0.78	<u>0.58</u> (55)	<u>0.57</u> (30)	<u>0.87</u> (18)	<u>0.95</u> (94)
Single-family Attached (Townhouse)	19.86 ^b	3,194	0.11	0.28	<u>0.47</u> (55)	<u>0.50</u> (31)	<u>0.21</u> (18)	<u>0.10</u> (94)
Multi-family Attached (Condominium)	11.27 ^b	3,194	0.07	0.16	<u>0.32</u> (55)	0.19 (31)	<u>0.01</u> (18)	<u>0.08</u> (94)
<u>Probabilities Restricted to Sum to 100% (1.0)</u>								
Single-family Detached	28.84 ^b	3,187	0.09	0.72	<u>0.46</u> (53)	<u>0.52</u> (29)	<u>0.85</u> (17)	<u>0.90</u> (92)
Single-family Attached (Townhouse)	21.80 ^b	3,187	0.05	0.19	<u>0.32</u> (53)	<u>0.37</u> (29)	<u>0.15</u> (17)	<u>0.06</u> (92)
Multi-family Attached (Condominium)	13.07 ^b	3,187	0.03	0.10	<u>0.22</u> (53)	<u>0.10</u> (29)	<u>0.01</u> (17)	<u>0.04</u> (92)
<u>Relative Preference Dominance¹</u>								
Single-family Detached	22.09 ^b	3,187	0.13	0.77	<u>0.54</u> (53)	<u>0.52</u> (29)	<u>0.85</u> (17)	<u>0.97</u> (92)
Single-family Attached (Townhouse)	16.41 ^b	3,187	0.10	0.17	<u>0.30</u> (53)	<u>0.43</u> (29)	<u>0.15</u> (17)	<u>0.02</u> (92)
Multi-family Attached (Condominium)	5.58 ^a	3,187	0.05	0.06	<u>0.16</u> (53)	0.05 (29)	<u>0.00</u> (17)	<u>0.01</u> (92)

Notes: ¹ Constructed by assigning a 1 to a type of housing if there is clearcut dominance relative to the other two types, (and 0 probabilities to those measures); in the case of ties for dominance, probabilities for those were left as given.

² Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Key: ^a p < .01

Several important points about the unadjusted probability results are worthy of note. First, the largest average purchase probability, irrespective of current housing type, was for a single-family detached home. This finding is particularly important since the current housing type was always the first of the three questions asked. Therefore, many condominium and townhouse owners must strongly prefer a single-family detached home for their next purchase since the single-family detached housing probability question followed the one regarding their present type.

A second important finding concerning housing-type preferences is that, based on the summed averages to the unadjusted probabilities for each particular owner group, the condominium owners are unquestionably the least committed to their present housing-type (and likely the most receptive to purchasing other types). The single-family detached homeowners are the most committed to their present type, and townhouse owners fall between the two extremes. This finding is based on the summed average housing-type probabilities for the respective condominium, townhouse, and smaller and larger single-family detached owner-groups of 1.37, 1.26, 1.10, and 1.13.

The second set of probability measures (i.e., where each respondent's unadjusted housing-type probability responses were adjusted or weighted to sum 100 percent) allows for more direct interpretation of the differences in probabilities of purchase of particular housing-types. For the groups of condominium and townhouse owners, these results provide additional evidence that a single-family detached home is the most commonly preferred option for their next home just as it is for current owners of that type. As was the case with the unadjusted probability measures, the multi-family attached type of housing is unquestionably the least preferred option of the three.

The third set of probability measures in effect provided an assessment of the proportion of respondents in a particular owner group who reported a dominant preference for one housing type over the other two. As can be noted in Table 10, only 16 percent of the condominium owners expressed a dominance for that type of housing. Slightly less than one-half (43%) of the townhouse owners anticipated again purchasing a townhouse when in the market, however, neither of these groups are as partial to their present housing type as are single-family detached homeowners.

Given the sequence in which the questions were asked, respondents likely used their present housing type as a point of reference for responding to the subsequent housing-type probability questions. Thus, the percentage reported for the measures of relative preference dominance should be fairly accurate estimates of the likely type of home preferred. As a point of comparison, a recent article in Multi-Housing News (Hayes 1983) reported results of a study that showed single-family detached housing as the most preferred option by over 55 percent of those sampled, which was followed by a preference for a townhouse which was given by nearly 20 percent, and by a preference for a condominium by about 15 percent of the respondents. Thus, the relative preferences for particular types of housing found in the present study also appear to exist in the broader population to the extent that the Multi-Housing News study provided a representative indication of preferences outside of the planned community in which this study was conducted.

Table 11 presents Chi-square results of two additional expectation and preference measures which could not be assumed to be continuous. The first measure presented in the table is based on a follow-up question to the housing type probability measures that assessed whether or not the respondent would

purchase a dwelling where there is joint or common ownership. Results indicated very strong differences among the owner groups, with the majority of the effect due to only 22.8 percent of the two groups of single-family detached owners reporting they would purchase a dwelling with common ownership of some of the real property, compared to two-thirds of the owner groups who are presently living in a dwelling with common ownership provisions reporting they would again purchase that type of dwelling. While it is not entirely clear as to the underlying reasons behind the 75-plus percent of the single-family detached homeowners reporting they would not purchase a dwelling with common ownership, presumably it is partly a function of preferences for privacy and partly a function of individualistic tendencies.

The second measure reported in Table 11 concerned the length of time the respondents plan to remain in their present residence. Results indicate a weak effect among owner groups. In particular, more than one-half of the condominium and townhouse owner groups intend to remain at their present residence less than three years whereas 37.9 percent of the single-family detached homeowners plan to live at their present address less than three years.

Summary

The results presented in this section provide strong and consistent evidence of differences in satisfaction and preferences among owners of different types of housing. In particular, owners of condominiums were found to be less satisfied than owners of single-family detached homes regarding numerous attribute dimensions. Townhouse owners generally reported satisfaction levels which were not substantially different from those given by single-family detached homeowners. Therefore, the common ownership provision, which is char-

Table 11
Chi-Square Results of Differences Between Owner Groups in
Expectation Regarding Future Housing Purchases

Measure	Condominium Owners		Townhouse Owners		SFD ₁ Owners		SFD ₂ Owners		Total: All Types		Chi-Square	df
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>		
Would purchase dwelling where there is joint or common ownership?												
Yes	36	66.7	21	67.7	5	27.8	20	21.5	82	41.8	39.49 ^b	3
No	<u>18</u>	<u>33.3</u>	<u>10</u>	<u>32.3</u>	<u>13</u>	<u>72.2</u>	<u>73</u>	<u>78.5</u>	<u>114</u>	<u>58.2</u>		
Totals	54	100.0	31	100.0	18	100.0	93	100.0	196	100.0		
Don't Know	(1)	-	(0)	-	(0)	-	(3)	-	(4)	-		
Length of time planned to remain in present residence?												
0-2 years	30	55.6	15	55.6	5	33.3	31	38.8	81	46.0	11.57 ^a	6
3-5 years	16	29.6	4	14.8	4	26.7	32	40.0	56	31.8		
6 years or longer	<u>8</u>	<u>14.8</u>	<u>8</u>	<u>29.6</u>	<u>6</u>	<u>40.0</u>	<u>17</u>	<u>21.3</u>	<u>39</u>	<u>22.2</u>		
Totals	54	100.0	27	100.0	15	100.0	80	100.0	176	100.0		
Don't Know	(1)	-	(4)	-	(3)	-	(16)	-	(24)	-		

Key: ^a < p .10
^b < p .001

acteristic of both condominiums and townhouses, does not appear in and of itself to result in lower (or higher) levels of satisfaction in comparison with traditional single-family detached residences.

By the same token, though, there are marked differences between owners of housing types with common ownership and owners of single-family detached homes in terms of their preferences for particular types of housing. Approximately one-half of both the condominium and townhouse owners have a dominant preference to again purchase a dwelling with common ownership and the remainder intend to purchase a traditional detached home. Compared to an overwhelming preference among single-family detached homeowners for again purchasing that type of home, the groups of owners in condominiums and townhouses are decidedly mixed in their preferences and appear to form several different market segments as a result.

POSSIBLE ANTECEDENT CORRELATES WITH SATISFACTION AND PREFERENCES

Establishment of differences among the owner groups in terms of their satisfaction, preferences and other factors should provide the housing construction market with important information about homeowners, their likes and dislikes. As a means of better understanding the marketplace, an examination of selected antecedent factors which may contribute to the formation of owner satisfaction and preferences also is necessary. In particular, factors associated with the search process for the homes purchased by the respondents are potentially important contributors to their satisfaction and to the formation of preferences regarding housing alternatives. Moreover, consumer attitudes toward general aspects of ownership which are believed to differ across types of housing should serve as inputs to consumer satisfaction and preferences for

particular housing types. Finally, participation in various activities may affect satisfaction with particular features of the home owned and may have a corresponding influence on preferences toward alternative housing types. Each of these sets of antecedent factors will be evaluated across owner groups and in relation to consumer satisfaction and preferences. Before addressing these relationships, the degree of association between measures of satisfaction and measures of preferences for alternative types of housing should first be examined.

Relationships Between Satisfaction and Preferences

Table 12 shows correlations between selected indicants of consumer satisfaction with the home owned and the three unadjusted probability measures regarding future purchase of particular types of housing. For the satisfaction indicants, only the three scales and the measure of overall satisfaction were reported in Table 12 and subsequent tables; however, analyses of individual components of the scales were conducted and will be reported if departures from the composite scale are noted.⁴ The same holds true for the measures of preferences; the three unadjusted probability measures serve as the representatives of preferences, but the adjusted and/or dominance probability constructions will be addressed if necessary.⁵

Correlations reported in Table 12 were computed for the total set of respondents, for the condominium and townhouse owners considered as a group, and for the set of single-family detached homeowners. As should be expected if satisfaction is not specific to a particular type of housing and/or does not

⁴ See Table 8 for a description of these measures.

⁵ See Table 10 for a description of these measures.

Table 12
Pearson Product-Moment Correlations of
Satisfaction Indicators with Preferences for
Various Types of Housing

Measures of Satisfaction	Measures of Unadjusted Probabilities of Purchasing Various Housing Types								
	Prob. (Single-Family Detached)			Prob. (Single-Family Attached)			Prob. (Multi-family Attached)		
	All Owners (N)	Condominium and Townhouse Owners (N)	Single Family Detached Owners (N)	All Owners (N)	Condominium and Townhouse Owners (N)	Single Family Detached Owners (N)	All Owners (N)	Condominium and Townhouse Owners (N)	Single Family Detached Owners (N)
Overall Satisfaction (item) ¹	.02 (197)	-.06 (85)	-.11 (112)	.02 (198)	.14 (86)	.10 (112)	-.10 (198)	-.09 (86)	.04 (112)
Satisfaction with Tangible Attributes Scale ²	.05 (196)	-.05 (85)	-.10 (111)	-.07 (197)	.10 (86)	.00 (111)	-.15 ^a (197)	-.11 (86)	-.02 (111)
Satisfaction with Intangible Attributes Scale ²	.03 (197)	-.13 (85)	-.10 (112)	.07 (198)	.26 ^b (86)	.16 ^a (112)	-.04 (198)	.04 (86)	.10 (112)
Overall Satisfaction Scale ²	.08 (176)	-.04 (75)	-.13 (101)	-.01 (176)	.22 ^a (75)	.05 (101)	-.10 (176)	-.01 (75)	.03 (101)

Key: ^a p < .05

^b p < .01

Notes: ¹Question 5 on questionnaire.

²See Table 8 for description.

have a major impact on preferences, only an isolated instance of a significant correlation was noted for the total set of respondents. And in only two instances was there an indication of different patterns of relationships between single-family detached owners and those with common property provisions.

These two instances centered around preferences regarding single-family attached housing in which it was found that for both of the subgroups, a greater level of satisfaction with intangible attributes of their current housing tended to be associated with a corresponding greater reported probability of purchase of a single-family attached home on the next housing purchase. In addition, the significant positive correlation between the overall satisfaction scale and the probability of purchase of a single-family attached home on the next purchase found for the groups of owners with common property could be due to a number of possible factors, and any conclusions would be premature.

The lack of significant relationships between the satisfaction and preference measures indicates that they are in fact measuring different levels of specificity and different domains surrounding homeownership. However, the relatively low variability of the satisfaction measures may account for part of the results. Nevertheless, all of these measures were retained and used for the assessment of relationships with the selected prepurchase factors, attitudes and activity patterns.

Prepurchase Factors

A number of aspects of the prepurchase search process were assessed, including the emphasis and extent of the search effort, the importance of particular housing features, and the types of sources from which information was sought. For each of these domains, comparisons among owner groups will be

given, and the relationships of consumer satisfaction and housing-type preferences with these prepurchase search factors will be assessed.

The Emphasis and Extent of Prepurchase Search. Table 13 shows results of comparisons among owner groups in terms of several important dimensions of reported prepurchase search behavior. The owner groups were not found to differ significantly on the basis of the reported number of days spent actively searching for their present residence; however, it should be noted that there was a large variability in the responses, which could have masked small differences. Restriction of the range of responses through recoding, however, served to reduce both the variance and size of the F-statistic. Strong differences were noted in the number of homes seen, with single-family detached homeowners having a much larger average compared to condominium owners. In addition, condominium owners reported a much lower percentage of these homes which were seen with a broker, yet they reported a larger percentage on the average number of homes which they considered making an offer to purchase than did the groups of townhouse and single-family detached owners. While these results are not entirely clearcut, it does appear that the condominium owners in this study approached the search process somewhat differently.

Before examining the relationships of these prepurchase search factors and the factors of primary interest, satisfaction and preferences, two additional sets of analyses which were conducted with these prepurchase search dimensions will be presented. Table 14 shows results of comparisons made among respondents whose previous residence was in the Houston vicinity, those who relocated from another part of Texas, and those who moved from another location. Table 15 provides results of comparisons between respondents who were first-time purchasers and those who were not.

Table 13
Analysis of Variance Results of Differences Between Owner
Group in the Emphasis of Prepurchase Search Behavior

Measure of Prepurchase Search Behavior	F	df	MSe	Owner Group Means ⁴				
				Overall	Condo-minium (N)	Townhouse (N)	SFD1 (N)	SFD2 (N)
Length of Active Search for Home (in days)	2.11	3,195	25968.20	109.63	146.78 (55)	106.73 (30)	41.78 (18)	101.98 (96)
Recorded ¹	1.67	3,195	1.14	2.90	2.89 (55)	2.80 (30)	2.44 (18)	3.03 (96)
Approximate Number of Homes Seen	6.20 ^c	3,194	491.45	19.29	<u>10.04</u> (55)	<u>14.97</u> (29)	<u>28.89</u> (18)	<u>24.10</u> (96)
Recorded ²	8.86 ^c	3,194	1.08	2.53	<u>1.98</u> (55)	<u>2.34</u> (29)	<u>3.00</u> (18)	<u>2.80</u> (96)
Percentage of Homes Seen with Broker	6.06 ^c	3,192	1818.15	43.58	<u>25.95</u> (55)	<u>66.39</u> (28)	42.22 (18)	<u>47.33</u> (95)
Recorded ³	5.90 ^c	3,192	2.83	1.76	<u>1.05</u> (55)	<u>2.61</u> (28)	1.72 (18)	<u>1.93</u> (95)
Percentage of Homes Seen that Considered Making Offer to Buy	4.36 ^d	3,191	535.51	18.70	<u>28.31</u> (54)	<u>16.71</u> (28)	15.11 (18)	<u>14.51</u> (95)

Key: ^a $p < .05$
^b $p < .01$
^c $p < .001$

Notes: ¹ Recorded, where 1=1-3 days, 2=4-20 days, 3=21-60 days, and 4=over 60 days.
² Recorded, where 1=1-4 homes, 2=5-10 homes, 3=11-20 homes, and 4=over 20 homes.
³ Recorded, where 0=0%, 1=1-40%, 2=50%, 3=51-95%, and 4=96-100%.
⁴ Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Table 14
 Analysis of Variance Results of the Emphasis and Extent of Prepurchase
 Search Behavior by Geographical Location of Last Residence

Measure of Prepurchase Search Behavior	F	df	MSe	Overall	Means for Geographical Locations ⁴		
					Houston (N)	Other Locations in Texas (N)	Else-where (N)
Length of active search for home (in days)	1.44	2,188	27031.88	112.53	135.08 (50)	120.79 (76)	85.54 (65)
Recorded ¹	6.17 ^b	2,188	1.07	2.93	<u>3.2</u> (50)	<u>3.05</u> (76)	<u>2.57</u> (65)
Appropriate number of Homes Seen	2.75	2,187	536.24	19.72 (50)	19.54 (50)	15.57 (76)	24.78 (64)
Recorded ²	4.58 ^a	2,187	1.17	2.55	2.56 (50)	<u>2.29</u> (76)	<u>2.84</u> (64)
Percentage of Homes Seen with Broker	2.21	2,185	1943.23	43.89	47.24 (50)	35.68 (74)	50.78 (64)
Recorded ³	1.90	2,185	3.022	1.78	1.92 (50)	1.47 (74)	2.02 (64)
Percentage of Homes Seen that Considered Making Offer to Buy	2.93	2,184	564.22	18.68	13.92 (50)	23.73 (74)	16.54 (63)

Key: ^ap < .05
^bp < .01

Notes: ¹Recorded, where 1=1-3 days, 2=4-20 days, 3=21-60 days, and 4=over 60 days.
²Recorded, where 1=1-4 homes, 2=5-10 homes, 3=11-20 homes, and 4=over 20 homes.
³Recorded, where 0=0%, 1=1-40%, 2=50%, 3=51-95%, and 4=96-100%.
⁴Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and means which are not underscored are not significantly different from any of the other means.

Table 15
 T-Test Results Concerning Differences in the Emphasis and Extent
 of Prepurchase Search Behavior Between First-Time Buyers and Those with Experience

Measure of Prepurchase Search Behavior	t-test	MSe	Means	
			First-time Buyers (n)	Experienced Buyers (n)
Length of active search for home (in Days)	1.71	26150.33	134.36 (77)	94.02 (122)
Recoded ¹	1.96	1.13	3.09 (77)	2.79 (122)
Approximate number of homes seen	-3.35 ^c	504.22	12.60 (77)	23.55 (121)
Recoded ²	-3.18 ^b	1.15	2.22 (77)	2.72 (121)
Percentage of homes seen with Broker	-2.46 ^a	1910.03	34.03 (77)	49.76 (119)
Recoded ³	-2.60 ^a	2.96	1.36 (77)	2.02 (119)
Percentage of homes seen that considered making offer to buy	1.19	562.12	21.21 (77)	17.07 (118)

Key: ^ap<.05
^bp<.01
^cp<.001

Notes: ¹Recoded where 1=1-3 days, 2=4-20 days, 3=21-60 days, and 4=over 60 days.
²Recoded, where 1=1-4 homes, 2=5-10 homes, 3=11-20 homes, and 4=over 20 homes.
³Recoded, where 0=0%, 1=1-4%, 2=50%, 3=51-95%, and 4=96-100%.

The results shown in Table 14 are not particularly demonstrative of more extensive search behavior by respondents who already lived within the Houston vicinity; in fact, the respondents who moved from outside of Texas on average saw a greater number of homes, even though the number of days spent searching tended to be less than residents who moved from a location within the state but outside of the Houston vicinity.

The results presented in Table 15 reveal strong differences between first-time and experienced owners in their search behavior. Owners with prior ownership experience tended to rely more heavily on a broker for showing them homes which were available, tended to see a greater number of homes, and tended to accomplish the task in a fewer number of days. It appears that the more experienced purchasers were in fact more adept in locating a suitable home. Perhaps this group was more realistic in working within their constraints and had a better feel for the housing features which were desired.

Table 16 shows relationships among the measures of search behavior and between these measures and those of satisfaction and preferences. The recoded measures of the length of the search process, the number of homes seen, and the percentage seen with a broker are given in the table because the reduced variability of each measure across the respondents served to correct for a portion of the measurement error inherent in the responses. This allowed for more precise assessment of relationships with satisfaction and preferences. The intercorrelations among the measures of search are self-explanatory and intuitive. Regarding the relationships between search and satisfaction, the lack of any significant correlations implies that the nature and extent of search does not seem to have an effect on the supposedly resultant satisfaction. It should be recognized that several factors likely affect any associa-

Table 16
Pearson Product-Moment Correlations Among Measures of Search Behavior and
between Search Dimensions and Measures of Satisfaction and Preferences⁵

	A. Intercorrelations Among Measures of Search Behavior				B. Correlations with Measures of Satisfaction			C. Correlations with Unadjusted Probability Measures of Preference			
	(1)	(2)	(3)	(4)	Overall Satisfaction (Item) 4	Satisfaction with Tangible Attributes Scale	Satisfaction with Intangible Attributes Scale	Overall Satisfaction Scale	Probability of Purchasing Single-Family Detached	Probability of Purchasing Single-Family Attached	Probability of Purchasing Multi-Family Attached
(1) Length of active search for home (in days) [recoded] ¹	1.0				-.04 (199)	.01 (198)	-.06 (199)	-.09 (176)	.07 (196)	-.13 ^b (197)	.03 (197)
(2) Approximate number of homes seen [recoded] ²	.25 ^d (198)	1.0			.05 (198)	.04 (197)	.03 (198)	.02 (175)	.18 ^c (195)	-.18 ^c (196)	-.18 ^c (196)
(3) Percentage of homes seen with ³ broker [recoded] ³	.01 (196)	.16 ^b (196)	1.0		-.06 (196)	.03 (195)	.05 (196)	.07 (173)	.13 ^b (193)	-.12 ^a (194)	-.11 ^a (194)
(4) Percentage of homes seen that considered making offer to buy	-.18 ^c (195)	-.52 ^d (195)	-.06 (195)	1.0	-.04 (195)	-.04 (194)	.03 (195)	.02 (172)	-.09 (192)	.06 (193)	.20 ^c (193)

Key: ^ap < .10
^bp < .05
^cp < .01
^dp < .001

Notes: ¹Recoded, where 1=1-3 days, 2=4-20 days, 3=21-60 days, and 4=over 60 days.
²Recoded, where 1=1-4 homes, 2=5-10 homes, 3=11-20 homes, and 4=over 20 homes.
³Recoded, where 0=0%, 1=1-40%, 2=50%, 3=51-95%, 4=96-100%.
⁴Question 5 on questionnaire (see Appendix).
⁵N in parentheses.

tion between search and satisfaction, namely, whether or not the respondent was a first-time purchaser, any financial constraints operative, the type of housing purchased, the nature and sequence of houses seen, and the fact that most respondents were highly satisfied with their housing (and thus there was little variability among them). Although Westbrook (1979) noted mixed results in his assessment of search-satisfaction relationships for several products, the idea that increased search should lead to a more optimal and satisfying purchase is intuitively appealing, but appears to be unrealistic in the housing market where the outcome of search is so heavily dependent on the ability of a broker to correctly assess customer needs and constraints and on the sequence in which houses are seen. Hempel (1976), in his study of single-family detached homeowners, found little association between the extent of search and satisfaction. If nothing else, the lack of significant relationships between search and satisfaction seems to imply that there were not unreasonable expectations created through more extensive search which carried over to resultant satisfaction nor were there strong dissatisfied responses due to a lack of search.

Part C of Table 16 shows correlations between measures of search behavior and those regarding preferences for particular types of housing. The results indicate moderate association between search for the present home and current preferences for particular types of housing. The number of days spent searching for the present home was found to be negatively related to the probability of purchasing a single-family attached home, particularly among single-family detached owners. In addition, the significant positive association between the percentage of homes seen that the respondent considered making an offer to buy and the probability of acquiring a multi-family attached home on the next

purchase was largely confined to the condominium owner group. The significant correlations involving the search measures of the number of homes seen and the percentage seen with a broker are largely due to differences among owner groups both in their search behavior and reported preferences; the correlations tended to be much smaller and nonsignificant when each owner group was evaluated separately.

Importance of Housing Attributes During Search Process. Table 17 displays results of comparisons among owner groups in terms of the importance of 12 housing attributes, some of which were common across housing types (e.g., a large master bedroom) and others which likely differed across types (e.g., common lawn care and maintenance). As noted in the table, responses regarding only five attributes were found to differ significantly across owners of different types of housing, and in each of these cases the results were indicative of strong differences among owner groups. For particular attributes, common lawn care and maintenance was unquestionably a determinant attribute from the standpoint of predicting the likely type of housing ultimately purchased; more than 50 percent of the variability in the responses were explained by mean differences among housing types. Townhouse owners and, to a lesser extent, condominium owners reported they placed a great emphasis on this attribute when in the market, in comparison with the two groups of single-family detached homeowners who tended either to prefer to not have this feature or to feel that it was not important. A similarly strong determinant attribute involved a private backyard. The condominium owners tended to not place a great emphasis on such a feature compared to the townhouse and single-family detached owners who largely felt the attribute was essential. The other three significant attributes were similar in that condominium owners

Table 17
Analysis of Variance Results of Differences Between Owner Groups in the
Importance of Selected Housing Attributes during Prepurchase Search¹

Attribute Importance Measure	F(3,196)	MSe	Overall	Means ²			
				Condominium Owners (N=55)	Town-house Owners (N=31)	SFD ₁ Owners (N=18)	SFD ₂ Owners (N=96)
Large Master Bedroom	1.53	0.633	1.38	1.22	1.52	1.22	1.45
Walk-in closet	1.48	0.381	1.59	1.51	1.45	1.61	1.68
Kitchen large enough for Breakfast nook	10.06 ^a	0.650	1.00	<u>0.53</u>	0.90	<u>1.33</u>	<u>1.23</u>
Connected, enclosed garage	9.96 ^a	0.538	1.25	<u>0.82</u>	1.19	<u>1.44</u>	<u>1.48</u>
Fireplace	0.35	0.509	1.37	1.33	1.32	1.28	1.42
Formal dining room	1.41	0.713	0.90	0.73	0.84	1.11	0.97
One bedroom per household member	1.44	0.665	1.35	1.29	1.52	1.61	1.27
Guest bedroom/study	9.15 ^a	0.463	1.35	<u>0.95</u>	<u>1.55</u>	1.39	<u>1.51</u>
Private backyard	25.33 ^a	0.465	1.31	<u>0.64</u>	<u>1.39</u>	<u>1.50</u>	<u>1.63</u>
Security features	0.47	0.619	1.17	1.15	1.32	1.17	1.14
Common recreation facilities	1.83	0.551	1.02	0.84	0.97	1.06	1.13
Common lawn care and maintenance	76.03 ^a	0.364	0.72	<u>1.36</u>	<u>1.61</u>	<u>0.33</u>	<u>0.14</u>

Key: ^ap < .001

Note: ¹ Respondents were asked to respond whether the attribute was considered essential (coded 2), desirable (coded 1), or undesirable or not important, both of which were coded 0 for analysis. See question 10 of questionnaire in the Appendix.

² Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Figure 1

Mean Profiles of Owner Groups Concerning the Importance¹
of Selected Housing Attributes during Prepurchase Search

Attribute Importance Measure

Large master bedroom

Walk-in closet

Kitchen large enough for a
breakfast nook

Connected, enclosed garage

Fireplace

Formal dining room

One bedroom per household
member

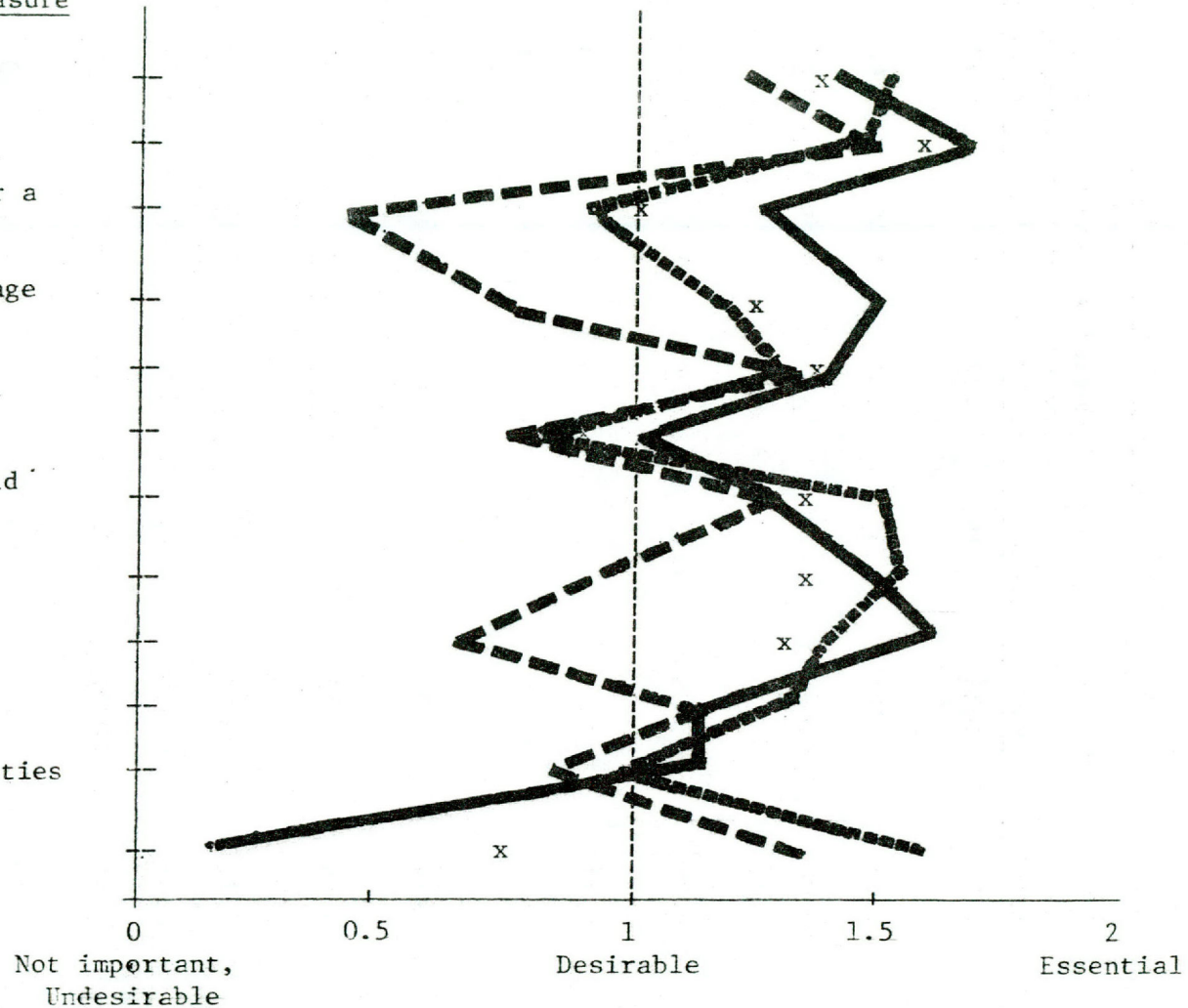
Guest bedroom/study

Private backyard

Security features

Common recreation facilities

Common lawn care and
maintenance



Key:
 - - - - - Condominium Owners
 Townhouse Owners
 _____ Single-family Detached Owners

Note: ¹ Overall means for attributes are indicated by an "x".

were consistently less demanding in terms of their purchase having these attributes--a kitchen large enough for a breakfast nook, a connected and enclosed garage, and a guest bedroom/study. Taken together, these five significant attributes provide for a clear delineation of market segments for particular types of housing on the basis of preferences for particular housing attributes.

Figure 1 displays the profiles of each of the separate owner groups in terms of mean responses regarding the importance of particular attributes. A number of the attributes tended to be viewed as either desirable or essential by all groups, including a large master bedroom, walk-in-closet space, a fireplace, and one bedroom per household member. Other attributes were largely considered desirable or essential by all groups except condominium owners -- i.e., a connected and enclosed garage, a guest bedroom/study, and a private backyard. A formal dining room, common recreational facilities, and perhaps security features were the only attributes where responses did not differ significantly across groups and in which responses tended toward the more negative end of the spectrum relative to other attributes; however, it should be emphasized that respondents in the main did deem these attributes as desirable.

While it is inappropriate to generalize these findings to other populations, the results do indicate several aspects worthy of consideration for generalization. First, spaciousness of the bedroom areas and closets seem to be similarly desired across the owner groups. Second, the condominium owners seemed to place less importance on most attributes than did the other owner groups, with the exception of common lawn care and maintenance, which is a distinguishing aspect of townhouse and condominium ownership. Perhaps the

condominium owner group tended to be less discriminating due to the tradeoffs which were required because of limited financial resources since many were in the market for the first time. Third, the townhouse owners appeared to desire or require attributes similar to single-family detached owners, with the exception of the two attributes noted. Thus, each of the owner groups appears to have had a distinct set of criteria used to evaluate the various housing types.

Table 18 shows correlations among the housing attribute importances which were assessed and between these importance measures and the indicators of satisfaction developed. The correlations among attribute importance measures are provided for comparison purposes; as might be expected, the relationships among attributes tend to coincide with the patterns of mean differences among owner groups.

For the correlations with the indicators of satisfaction, there were several instances where satisfaction measures were found to relate to attribute importance measures, but even for these instances, the correlations were not very large. Relationships of note include (1) the positive correlations of the importance of security features with the overall satisfaction item and the satisfaction with tangible attributes scale; (2) the positive correlations of the importance of a private backyard with all satisfaction measures except the overall satisfaction item, and (3) the negative correlations of the importance of common lawn care and maintenance with all satisfaction measures except the overall satisfaction item. In these latter two sets of significant relationships, the results can be attributed primarily to differences among owner groups in satisfaction levels and in the importance of these attributes. In the case of the relationships involving the importance of security features,

Table 18
Pearson Product-Moment Correlations Among Measures of Importance of Selected Housing Attributes
and Between These Measures and Measures of Satisfaction¹

Measure	A. Intracorrelations Among Measures of Importance of Selected Housing Attributes (n=200)												B. Correlations with Measures of Satisfaction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Overall Satisfaction Attributes Scale ² (Item) ²	Satisfaction with Tangible ³ Attributes Scale ³ (n=199)	Satisfaction with Intangible ³ Attributes Scale ³	Overall Satisfaction Scale ³ (n=177)
Large Master bedroom (1)	1.0												.09	.08	.03	.14 ^b
Walk-in Closet (2)	.26 ^d	1.0											.00	-.05	.01	-.04
Kitchen large enough for a breakfast nook (3)	.05	.16 ^b	1.0										-.01	.03	.06	.01
Connected enclosed garage (4)	.10 ^a	.26 ^d	.38 ^d	1.0									.05	.09	.08	.03
Fireplace (5)	.20 ^c	.19 ^c	.07	.11 ^a	1.0								.04	.04	.04	.07
Formal dining room (6)	.17 ^c	.09	.34 ^d	.14 ^b	.21 ^d	1.0							.09	-.02	-.06	-.07
One bedroom per household member (7)	.03	.04	.13 ^b	.10 ^a	-.01	.06	1.0						-.10 ^a	-.01	-.01	.00
Guest bedroom/study (8)	.17 ^c	.08	.21 ^d	.21 ^d	.19 ^c	.08	.02	1.0					.06	.02	.08	.04
Private backyard (9)	.16 ^b	.20 ^c	.42 ^d	.35 ^d	.14 ^b	.18 ^c	.18 ^c	.38 ^d	1.0				.06	.17 ^c	.17 ^c	.11 ^a
Security features (10)	.06	-.01	.11 ^a	.21 ^d	.10 ^a	.09	.03	.13 ^b	.09 ^a	1.0			.18 ^c	.14 ^b	.03	.07
Common recreation facilities (11)	.12 ^b	.15 ^b	.17 ^c	.11 ^a	.20 ^c	.11 ^a	.05	.21 ^d	.20 ^c	.14 ^b	1.0		.07	.00	.05	.03
Common lawn care and maintenance (12)	.00	-.08	-.25 ^d	-.19 ^c	.06	-.08	.00	-.07	-.34 ^d	.12 ^a	-.02	1.0	-.01	-.16 ^b	-.15 ^b	-.16 ^b

Key: ^ap<.10
^bp<.05
^cp<.01
^dp<.001

Notes: ¹N=200 except where noted in parentheses.
²Question 5 on questionnaire (see Appendix).
³See Table 8 for description.

the basis for the sizeable correlations was restricted almost exclusively to the condominium and townhouse owner groups. Their desire for security features was strongly related to their overall satisfaction response ($r = .40$, $p < .001$, $n = 86$) and, to a lesser degree, to their composite satisfaction responses regarding tangible attributes ($r = .23$, $p < .02$, $n = 86$). While the basis for the positive correlation with the tangible attribute satisfaction scale is not entirely clearcut, the other significant relationships do appear to be reasonably straightforward and plausible.

Table 19 presents correlation results between importance measures for particular housing attributes and measures of preferences for various types of housing. Correlations are presented for the total set of respondents and for the owner groups of various housing types since the groups were often found to differ dramatically in the nature and extent of particular attribute-importance/housing-type preference relationships. For this reason, only the relationships for the subgroups will be addressed in detail.

Relationships for the single-family detached homeowner group exhibited the weakest pattern of correlations in comparison with the condominium owners and the townhouse owners. In many respects, the weak correlations among the single-family detached homeowners can be attributed to their overwhelming preference to again purchase a single-family detached home; hence, there was a smaller degree of variability to be explained by attribute importance factors.

Several of the sets of results definitely deserve mention; however, it is beyond the scope of this report to examine all relationships in detail.

First, the patterns of correlations of the three preference measures with the prepurchase attribute importances of a large kitchen and a formal dining room provide correlational evidence that a number of condominium and townhouse ow-

Table 19
Pearson Product-Moment Correlations Between Measures of Importance of
Selected Housing Attributes and Measures of Preferences

--Both Aggregated and Disaggregated by Housing Type Owned--

Attribute Importance	Unadjusted Probability of Purchasing a Single-Family Detached Home				Unadjusted Probability of Purchasing a Single-Family Attached Home				Unadjusted Probability of Purchasing a Multi-Family Home			
	Total sample (n=197)	Condo- minium Owners (n=55)	Town- house Owners (n=30)	Single- Family Detached Owners (n=112)	Total Sample (n=198)	Condo- minium Owners (n=55)	Town- house Owners (n=31)	Single- Family Detached Owners (n=112)	Total Sample (n=198)	Condo- minium Owners (n=55)	Town- house Owners (n=31)	Single- Family Detached Owners (n=112)
Large master bedroom	.08	.16	-.06	.02	.04	-.02	.33 ^b	.04	-.08	-.20 ^a	.10	.04
Walk-in closet	.06	-.16	-.10	.20 ^b	-.03	-.06	.15	.06	.03	.19 ^a	.15	-.06
Kitchen large enough for a breakfast nook	.30 ^d	.20 ^a	.59 ^d	-.06	-.31 ^d	-.06	-.49 ^c	-.13 ^a	-.28 ^d	-.28 ^b	-.20	-.10
Connected, enclosed garage	.14 ^b	-.22 ^b	.37 ^b	-.06	-.17 ^c	.07	-.33 ^b	.08	-.18 ^c	.00	-.29 ^a	.02
Fireplace	-.02	-.02	-.26 ^a	.07	.13 ^b	.11	.49 ^c	.03	.08	.11	.26 ^a	.02
Formal Dining Room	.15 ^b	.14	.24 ^a	.03	-.19 ^c	-.45 ^d	-.04	-.02	-.10 ^a	-.10	-.08	-.02
One bedroom per household member	-.12 ^b	-.37 ^c	-.05	.04	.04	.24 ^b	-.17	-.01	.03	.30 ^b	-.25 ^a	-.07
Guest bedroom/study	.19 ^c	.27 ^b	-.14	.08	-.09	.00	.25 ^a	-.10	-.28 ^d	-.26 ^b	.00	-.23 ^c
Private backyard	.22 ^d	.08	-.06	.00	-.25 ^d	-.11	.01	-.07	-.27 ^d	-.15	.02	-.13 ^a
Security features	-.11 ^a	-.30 ^b	.13	-.05	-.06	-.03	.09	-.24 ^c	-.08	-.02	-.01	-.20 ^b
Common recreational facilities	.15 ^b	.06	.15	.07	-.11 ^a	.05	.12	-.18 ^b	-.08	-.01	.07	-.07
Common lawn care and maintenance	-.50 ^d	-.32 ^c	-.46 ^c	.01	.45 ^d	.19 ^a	.40 ^b	-.01	.35 ^d	.24 ^b	.24 ^a	.06

Key: ^ap<.10
^bp<.05
^cp<.01
^dp<.001

ners would have likely preferred a single-family detached home instead of the type purchased. As a consequence, they plan to purchase one on the next go-around.

Second, for several attributes -- a connected, enclosed garage, one bedroom per household member and a guest bedroom or study -- the pattern of correlations differed between condominium and townhouse owners. Since the townhouses have both a one-car enclosed garage and a carport, it appears that those townhouse owners who placed a greater importance on having a covered enclosed garage now seem to report a greater probability of purchasing a single-family detached home and a lower probability of purchasing either of the other options, perhaps as a result of experiences and constraints noted with their current home. On the other hand, the condominium owners who placed a greater importance on acquiring a home with a connected, enclosed garage appear to have changed their attribute priorities, based on the correlation evidence noted. In the case of the attribute of one bedroom per household member, the correlational patterns for the condominium owners are likely to be spurious since many of the condominium owners constitute single-member households. For the townhouse owners, a similarly spurious pattern likely exists, except that many of these owners have two bedrooms and a two-member household. For the guest bedroom/study attribute, the pattern of correlations for condominium owners can be attributed to the tradeoff compromises which were required by some when the condominium purchase was made and a resultant desire to remedy the situation on the next housing purchase.

The third important set of findings in the analysis shown in Table 19 concerns the importance of the security features attribute. Note that the more important or essential it was to have security features, the lower the

probability of a condominium owner purchasing a single-family detached home on the next purchase cycle. The importance of security features among the group of condominium owners was not, however, related to the probabilities of purchasing either a single-family attached townhouse or a multi-family attached condominium. For the owners of a single-family detached home, the pattern of correlations was opposite that of the condominium owners. Thus, it appears as though some condominium owners do not feel that a single-family detached home is as safe as a condominium or townhouse, and that a number of single-family detached homeowners do not feel the common ownership types are as safe as their present housing type.

Fourthly, the significant correlations for the total sample involving the importance of having a private backyard and common recreational facilities can be attributed to group differences in both attribute evaluations and housing-type preferences since the correlations for the separate groups tended to be nonsignificant.

Finally, and perhaps most importantly, the consistent and similar patterns of relationships involving the attribute importance of common lawn care and maintenance for both the townhouse and condominium owner groups indicate that individuals who desired this amenity prior to purchase tend to continue to desire this feature as evidenced by (1) the positive correlations with probabilities of purchase of a single-family attached and of a multi-family attached type of dwelling, and (2) the negative correlations with the probability of purchase of a single-family detached home. In addition, the direction and magnitude of the correlations for the total set of respondents accentuate and further substantiate the tendency to continue to prefer a housing type with or without common ownership, depending on the type currently owned.

In summary, the importance of various attributes prior to the purchase of the present home of the respondent did not serve to account to a great extent for the reported levels of satisfaction. There were several moderately-strong relationships noted in accounting for expressed preferences for particular types of housing when each of the owner groups was examined separately and, to a lesser extent, when examined in aggregate fashion.

Use of Various Sources of Information. Table 20 shows results involving the use of various sources of housing-related information when the owners were actively searching for their present homes. Of these usage results, strong differences were noted among owner groups regarding use of the real estate salesperson for obtaining information. The much lower proportion of condominium owners who used this source in comparison with the other groups coincides the findings reported in Table 13 regarding the percentage of homes seen with a broker. In addition, a greater proportion of condominium owners reported use of residents of the neighborhood for information compared to other owner groups. In fact, a greater proportion of condominium owners as a general rule tended to report use of each of the personal sources (except for co-workers) compared to the other owner groups. Apart from the significant differences, the results correspond to what might be expected -- the most logical and accessible sources tended to have been used by the majority of owners, and the other sources were not used by very many of the owners.

The relationships between usage of particular sources during the search process and owner satisfaction and preferences are not presented. An absence of significant relationships provides a tentative indication that particular sources did not appear to have a widespread impact on consumer satisfaction after the sale or on housing-type preferences.

Table 20
Proportion of Respondents Reporting Use of Selected Sources
of Information when Searching for Present Home

Information Source	Condominium Owners (N=55) (%)	Townhouse Owners (N=31) (%)	SFD ₁ Owners (N=18) (%)	SFD ₂ Owners (N=96) (%)	Total: All Types (N=200) (%)	Chi square (df=3)
<u>Personal Sources</u>						
Friends	72.7	58.1	50.0	61.5	63.0	3.96
Resident of neighborhood	40.0	25.8	27.8	20.8	27.5	6.50 ^a
Relatives	38.2	29.0	16.7	29.2	30.5	3.27
Co-workers	43.6	45.2	55.6	50.0	48.0	1.09
<u>Business-Related Sources</u>						
Real Estate Salesperson	38.2	77.4	61.1	60.4	57.0	13.80 ^c
Advertisements	63.6	48.4	72.2	57.3	59.0	3.35
Legal counsel	7.3	16.1	5.6	6.3	8.0	3.37
Financial Institution	10.9	25.8	11.1	5.2	10.5	n.a.
Home Inspection Service	5.5	9.7	0.0	6.3	6.0	1.93
<u>Neutral Sources</u>						
Newspaper articles, books and pamphlets	58.2	38.7	61.1	58.3	55.5	4.24
Local Board of Realtors	7.3	19.4	0.0	15.6	12.5	6.13

Key: ^a p < .10
^b p < .05
^c p < .01

n.a. not appropriate due to violation of assumptions of test.

Summary of Results Concerning Prepurchase Factors. The results of analyses involving prepurchase factors demonstrated important differences in search behavior and attribute considerations among owner groups. The relationships of prepurchase factors to present owner satisfaction tended to be weak; however, search factors, and particularly attribute considerations, were associated with current preferences for various types of housing during the next purchase cycle. In the case of the importance of particular housing attributes, the relationships to housing-type preferences often differed among owner groups, which provides an indication of the possible existence of distinct segments of the housing market in terms of (1) the current type of housing owned, (2) attributes which were deemed important, and (3) preferences for particular housing types on the next purchase cycle.

Attitudes Regarding Aspects of Home Ownership

Eleven attitudinal questions were addressed near the end of the survey. These questions provided for the assessment of such important dimensions as general feelings toward home maintenance/improvement responsibilities, toward homeowner associations, and toward environmental aspects of their present home.

Attitude Differences Among Owner Groups. Table 21 shows results concerning differences in attitudes among owner groups. The table is arranged according to the major dimensions of attitudes assessed. The first attitudinal dimension listed, do-it-yourself home maintenance/improvement, is reliably expressed as a function of three items -- attitudes toward home repair, yardwork and home improvement. As might be expected, owners of single-family detached homes have much more positive attitudes toward participation in home repair,

Table 21
Analysis of Variance Results of Differences between Owner Groups in Their
Attitudes Regarding Selected Aspects of Home Ownership

Attitude Measure ¹	F	df	MSe	Overall	Means ⁷			
					Condominium Owners ² (n) ³	Townhouse Owners ⁴ (n) ⁵	SFD1 Owners ⁶ (n) ⁵	SFD2 Owners ⁶ (n) ⁵
<u>Do-it-yourself Home</u>								
<u>Maintenance Improvement</u>								
Home repair ⁶	4.92 ^b	3,196	3.65	3.20	2.65	2.52	3.61	3.66
Yardwork ⁶	7.53 ^c	3,196	4.03	3.68	2.89	2.94	4.06	4.30
Home improvement ⁶	2.58	3,196	4.31	4.06	3.67	3.45	4.50	4.39
Summated Scale (Cronbach alpha =.86)	6.17 ^c	3,196	27.45	10.94	9.22	8.90	12.17	12.34
<u>Perceived Environmental Amenities</u>								
Safety	0.63	3,196	0.88	6.13	6.20	6.00	6.33	6.09
Freedom from noise	28.24 ^c	3,196	1.77	5.57	4.20	5.61	6.22	6.21
Privacy	4.47 ^b	3,196	1.34	5.85	5.36	5.97	5.94	6.06
Summated Scale (Cronbach alpha =.50)	14.64 ^c	3,196	5.82	17.54	15.76	17.58	18.50	18.36
<u>Homeowner Associations</u>								
Restrict homeowner's freedom ⁶	0.86	3,196	3.52	3.39	3.60	3.42	3.78	3.19
Operate in best interest of owners	3.15 ^a	3,183	1.92	5.19	4.79 (53)	5.00 (29)	5.17 (18)	5.51 (87)
Summated scale (Cronbach alpha=.46)	0.60	3,183	6.66	8.75	8.47 (53)	8.45 (29)	8.94 (18)	8.98 (87)
<u>Miscellaneous Items</u>								
Owning makes good financial sense	1.39	3,196	0.60	6.49	6.33	6.61	6.67	6.50
Have freedom to modify exterior of home	4.69 ^b	3,194	3.66	3.04	2.22 (55)	3.26 (31)	3.28 (18)	3.39 (94)
Have freedom to modify interior of home	2.04	3,196	0.29	6.30	6.40	6.39	6.33	6.20

Key: ^ap<.05
^bp<.01
^cp<.001

Notes: ¹See question 14 on questionnaire in the Appendix for the exact question form.
²N=55, except where noted.
³N=31, except where noted.
⁴N=18, except where noted.
⁵N=96, except where noted.
⁶Scaling for these measures were cast in reverse for analysis, i.e. strongly disagree=7, strongly agree=1) to facilitate comparisons across measures and for ease in scale construction.
⁷Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

yardwork and, to a lesser extent, home improvement activities than do the condominium and townhouse owner groups. However, even the single-family detached owners were not very positive about these activities.

Attitudes toward environmental amenities of safety, privacy, and freedom from noise are not nearly as internally consistent as are those items constituting the home maintenance/improvement dimension, yet they do appear to be marginally consistent internally; deletion of the safety item from the scale, however, resulted in an increase in coefficient alpha to a more respectable .61. In comparison with the two highly-significant items of privacy and freedom from noise, no differences were noted among owner groups in attitudes toward feelings of safety in their present home, in part due to the strongly-positive attitudes noted. Despite the unreliability of and lack of differences found for the safety item, results for the summated scale and for the separate items of privacy and freedom from noise indicated strong differences between the condominium owner group and the groups of townhouse and single-family detached homeowners. However, all groups tend to hold positive attitudes toward these environmental amenities. These results correspond closely with results reported in Table 8 concerning owner satisfaction with these attributes; in fact, the Pearson product-moment correlation for the privacy satisfaction and attitude measures is .50 ($p < .001$, $n = 200$), and for the freedom-from-noise measures is .44 ($p < .001$, $n = 200$).

The third attitudinal dimension involves homeowner associations. Two questions assessed attitudes regarding the relationship between the owner and the association. As can be seen, the summated scale indicated marginal reliability and no differences among groups; however, the results for the separate items revealed that attitudes toward associations operating in the best inter-

ests of the owners were more positive among the group of single-family detached homeowners than among condominium owners. This result is presumably a function of there being a greater proportion of association members among the condominium owners who invariably have a broader range of experiences with homeowner association operation, some of which are likely negative.

In addition to these three general dimensions, three miscellaneous attitude items also were assessed. Condominium owners tended to disagree more fully with the statement concerning whether they can modify the exterior of their home in comparison with the other owner groups. All groups tended to agree with the other items, and no significant differences were detected.

These findings of attitude differences among the owner groups provide additional evidence regarding the existence of reasonable clearcut market segments being served by various housing options available. While these attitudinal differences may be distinct and unrelated to specific aspects of ownership, in all likelihood some of the differences may be attributable to facets associated with ownership. As a means of assessing this possibility, owner-group differences for the summated attitude scales were examined after first controlling either for membership in a homeowner association or for whether or not they are willing to purchase a home where there is a common ownership provision. Results of these analyses are shown in Table 22.

Several important conclusions can be drawn from the analysis of covariance results presented in Table 22. First, it should be noted that both covariates were important in accounting for variability in attitudes toward home maintenance/improvement activities, and the direction of mean differences was indicative of more positive attitudes among the individualistically-inclined subset in each instance (e.g., not a member of a homeowner association, not

Table 22
Analysis of Covariance Results of Differences Across Owner Groups in Their Attitudes Toward Selected Aspects of Home Ownership

--Controlling for Membership in a Homeowner Association--

Summated Attitude Scale ¹	F	df	Means		F	df	MSe	Adjusted Means				
			Member	Nonmember				Overall Mean	Condominium Owners (n)	Town-house Owners (n)	SFD ₁ Owners (n)	SFD ₂ Owners (n)
			(n)	(n)								
Do-it-yourself home maintenance/improvement	6.34 ^a	1,191	10.33 (132)	12.33 (64)	4.23 ^b	3,191	27.26	10.98	9.65 (52)	9.00 (31)	11.93 (18)	12.17 (95)
Perceived environmental Amenities	1.29	1,191	17.39 (132)	17.81 (64)	15.13 ^c	3,191	5.83	17.53	15.60 (52)	17.57 (31)	18.54 (18)	18.39 (95)
Homeowner Associations	1.64	1,179	8.87 (127)	8.35 (57)	1.33	3,179	6.55	8.71	8.19 (50)	8.40 (29)	9.08 (18)	9.04 (87)

--Controlling for Willingness to Purchase where Common Ownership--

	F	df	Willing Not willing to purchase purchase		F	df	MSe	Overall Mean	Condominium Owners (n)	Town-house Owners (n)	SFD ₁ Owners (n)	SFD ₂ Owners (n)
			(n)	(n)								
Do-it-yourself home maintenance/improvement	27.51 ^c	1,191	8.67 (82)	12.52 (114)	2.10	3,191	25.66	10.91	9.80 (54)	9.66 (31)	11.76 (18)	11.80 (93)
Perceived environmental Amenities	0.41	1,191	17.43 (82)	17.65 (114)	12.06 ^c	3,191	5.72	17.56	15.58 (54)	17.37 (31)	18.62 (18)	18.57 (93)
Homeowner Associations	0.09	1,179	8.87 (77)	8.76 (107)	0.97	3,179	6.51	8.80	8.44 (52)	8.32 (29)	9.00 (18)	9.14 (85)

Key: ^a p < .05
^b p < .01
^c p < .001

Note: ¹ See Table 21 for a description of scale composition.

willing to purchase where there is a common ownership provision). Moreover, neither covariate served to account to a significant degree for owner attitudes toward home environment amenities or toward homeowner association/owner relationships. In the case of attitudes toward perceived environmental amenities, no differences were expected due to either homeowner association membership or willingness to purchase a home with a common property provision unless some third factor, such as the type of housing owned, were spuriously captured by either covariate, which apparently was not the case. In the case of attitudes toward homeowner associations, one would expect for attitudes to differ between members and nonmembers; however, no differences were noted for the summated scale or for the separate items. Respondents who were association members did, though, have somewhat more positive attitudes in comparison with nonmember respondents.

Second, results of the impact of partialling each of the covariates indicated several possible explanations for the differences among owner groups in their attitudes toward self-performance of home maintenance/improvement activities. Despite the significant difference between members and nonmembers of a homeowner association, owner-group differences in attitudes were still apparent after removal of the effects of the covariate. In contrast, control for the strong effects of whether or not one is willing to purchase a home with common ownership provisions served to reduce the effects of owner-group differences to a nonsignificant level. One possible explanation for this result is that a willingness to purchase a home with a common ownership provision may be largely due to a dislike for performing home maintenance/improvement activities (relative to those who "like" these activities). Moreover, positive attitudes toward home maintenance/improvement and an unwillingness to

purchase where there is common ownership are both expressions of individualistic tendencies, just as is owning a single-family detached home. To the extent that these suppositions are true, the overlap among these factors would contribute to the results noted.

Relationships of Attitudes with Satisfaction and Preferences. Table 23 shows correlations among the attitude scales and measures of satisfaction and preferences for the total sample and for each of the groups of owners of different types of housing. As prefatory information, the intercorrelations among the attitude scales were not significant for the single-family detached homeowners. The attitude scales were, however, found to be strongly interrelated in both the condominium and townhouse owner groups. In both groups, the relationships of the home maintenance/improvement attitude scale with the perceived environmental amenities and homeowner association attitude scales were strong and negative, and the relationship between the perceived environmental amenities attitude scale and the homeowner association scale was positive and somewhat weaker. Thus, the differences in the pattern of relationships among attitude dimensions between detached and attached owner groups tend to correspond to what might be expected, since the attitude dimensions reflect areas likely to be evaluated differently among groups.

Several general conclusions can be made about the relationships shown in Table 23. First, of the various supposed determinants of owner satisfaction and preferences, these general attitudinal dimensions exhibit the strongest and most consistent relationships with satisfaction and preferences. Second, both the attitude-satisfaction relationships and the attitude-preference relationships are strong, yet each set is unique. Third, the patterns of correlations tend to differ somewhat among owner groups.

Table 23
 Pearson Product-Moment Correlations of Attitude Measures with Satisfaction and Preference Measures
 -Both Aggregated and Disaggregated by Housing Type Owned-
 (N in Parentheses)

Summated Attitude Scale ²	Satisfaction Measures ¹			Preference Measures			
	Overall Satisfaction (Item)	Satisfaction with Tangible Attributes Scale	Satisfaction with Intangible Attributes Scale	Overall Satisfaction Scale	Unadjusted Probability of Purchasing a Single-Family Detached Home	Unadjusted Probability of Purchasing a Single-Family Attached Home	Unadjusted Probability of Purchasing a Multi-Family Attached Home
<u>Do-it-yourself home maintenance/improvement</u>							
Total Sample	-.03 (200)	.06 (199)	-.08 (200)	-.03 (177)	.31 ^d (197)	-.32 ^d (198)	-.38 ^d (198)
Condominium Owners	-.03 (55)	.03 (55)	-.16 (55)	-.17 (46)	.38 ^c (55)	-.35 ^c (55)	-.53 ^d (55)
Townhouse Owners	-.32 ^b (31)	.16 (31)	-.09 (31)	.07 (29)	.36 ^b (30)	-.29 ^a (31)	-.52 ^b (31)
Single-Family Detached Owners	-.06 (114)	-.08 (113)	-.21 ^b (114)	-.16 ^a (102)	-.02 (112)	-.09 (112)	-.07 (112)
<u>Perceived Environmental Amenities</u>							
Total sample	.29 ^d (200)	.35 ^d (199)	.66 ^d (200)	.51 ^d (177)	.09 (197)	-.04 (198)	-.04 (198)
Condominium Owners	.22 ^a (55)	.34 ^c (55)	.69 ^d (55)	.51 ^d (46)	-.25 ^b (55)	.22 ^a (55)	.36 ^c (55)
Townhouse Owners	.44 ^c (31)	.55 ^d (31)	.75 ^d (31)	.67 ^d (29)	-.26 ^a (30)	.39 ^b (31)	.01 (31)
Single-Family Detached Owners	.16 ^b (114)	.10 (113)	.39 ^d (114)	.24 ^c (102)	.20 ^b (112)	.01 (112)	-.10 (112)
<u>Homeowner Associations</u>							
Total Sample	.23 ^d (187)	.15 ^b (186)	.11 ^a (187)	.22 ^c (167)	-.12 ^b (185)	-.04 (186)	.04 (186)
Condominium Owners	.16 (53)	.06 (53)	.08 (53)	.12 (44)	-.40 ^d (53)	.05 (53)	.19 ^a (53)
Townhouse Owners	.32 ^b (29)	.01 (29)	.26 ^a (29)	.21 (27)	-.10 (28)	.19 (29)	.09 (27)
Single-Family Detached Owners	.23 ^c (105)	.22 ^b (104)	.03 (105)	.22 ^b (96)	-.06 (104)	-.11 (104)	-.02 (104)

Key: ^ap < .10
^bp < .05
^cp < .01
^dp < .001

Notes: ¹See Table 8 for a description of these measures.
²See Table 21 for a description of the composition of these scales.

Several comments should be made about the most important relationships in Table 23. Concerning the attitude-satisfaction relationships, it should first be mentioned that attitudes toward selected environmental amenities are strongly and consistently related to all satisfaction measures, especially the scale concerning satisfaction with intangible attributes of their present home. The strong correlation of the environmental amenities attitude scale with the associated intangible-attribute satisfaction scale simply reveals that attitudes and satisfaction are highly-interrelated and overlapping concepts. The significant correlations of this attitude scale with the other satisfaction indicators provide insights into the important roles that perceptions of such intangible environmental amenities as privacy, security, and freedom from noise contribute to owner satisfaction. It is quite true that many builders place an emphasis on these factors in their construction projects, and it should be comforting for them to see the important role such factors do seem to have in providing satisfaction after the sale. In addition to this major finding, it also should be mentioned that the attitude-satisfaction results concerning the homeowner-association attitude scale indicate that the significant correlations for the total sample tend to be restricted to the townhouse and/or single-family detached owner groups. While it was expected that owners of condominiums and townhouses would reflect a tendency to be satisfied with their home if the required experience of association membership were positive, and dissatisfied if the experience were negative, the condominium owner group in this study did not correspond to this speculation.

The results concerning the attitude-preference relationships also offer several points worthy of note. First, attitudes toward home maintenance/improvement responsibilities are strongly related to preferences for types of

housing among the owner groups with common property provisions and are unrelated to preferences among the single-family detached owners. It does seem reasonably clear, based on these results and on results reported in Table 20, that future housing preferences of present condominium and townhouse owners seem to segment each group into two subsegments based on attitudes toward home maintenance/improvement. Thus, through acquiring such attitude information from these owners, a builder may be able to predict the likelihood of a particular townhouse or condominium owner deciding to purchase a single-family detached home. A second important set of results concerns the other two attitude dimensions and their relationships to housing-type preferences. Once again, among condominium and townhouse owners there was some evidence of significant attitude-preference correlations, but this was generally not the case for the single-family detached owner group or for the total sample. While considerably weaker than in the case of its relationships to satisfaction, attitudes toward the selected environmental amenities do appear to exert influence on housing-type preferences among these groups of owners of attached housing. Thus, it might be in a builder's best interest to pay even more attention to providing features which further improve condominium and townhouse owner evaluations of privacy, security, and freedom from noise, if in fact an emphasis is placed on attempting to ensure that a switch is not made over to a single-family detached home on the next purchase cycle. While such an emphasis seems a bit far-fetched given the spaciousness of Texas, it may become much more important in the near future as housing densities increase in urbanized areas.

Frequency of Participation in Selected Activities

The final set of possible determinants of owner satisfaction and preferences for various types of housing involved the frequency in which the respondent participates in four activities which were posited to differ across owner groups -- swimming, playing tennis, gardening, and business-related travel. Table 24 presents results of owner-group comparisons for these activity dimensions. The frequency of participation in gardening was unquestionably an important basis for distinguishing among owner groups, with the groups of single-family detached owners indicating much more frequent participation than did townhouse owners, who, in turn, reported more frequent participation than did condominium owners. With the exception of the frequency in which tennis is played, each of the activity dimensions indicated a less frequent participation by condominium owners relative to at least one of the other owner groups. One finding which was somewhat surprising involved the frequency in which condominium and townhouse owners reportedly travel on business. It was expected that one reason for purchasing a home of either of these types was because of travel and time demands of a person's job. Such appears to have been the case for the townhouse owners if their current level of business-related travel is any indication; over one-half of these owners indicated being often or regularly away from home on business-related travel (compared to less than 43 percent of the single-family detached owners). The condominium owners, on the other hand, were more likely to report never or seldom being away on a business trip, with only 25.9 percent that indicated being often or regularly away on business. Given the large proportion of first-time purchasers and with smaller household sizes among the condominium owners (and likely younger, too), perhaps their jobs do not yet demand extensive amounts of travel.

Table 24
 Analysis of Variance Results of Differences Between Owner Groups
 in Their Frequency of Participation in Selected Activities

Activity ¹	F	df	MSe	Overall	Means ⁶			
					Condominium Owners ²	Town- house Owners	SFD ₁ Owners	SFD ₂ Owners
Swimming	2.46 ^a	3,195	0.97	2.66	<u>2.38</u>	2.63	2.67	<u>2.83</u>
Play tennis	0.29	3,195	1.10	1.94	1.98	2.07	1.83	1.90
Gardening	15.76 ^c	3,195	1.19	2.25	<u>1.47</u>	<u>2.03</u>	<u>2.56</u>	<u>2.71</u>
Travel on business	3.14 ^b	3,194	1.21	2.38	<u>2.04</u>	<u>2.77</u>	2.39	2.46

Key: ^a p < .10
^b p < .05
^c p < .001

Notes: ¹ Coded 1=Never, 2=Seldom, 3=Often, and 4=Regularly.
² N=55, except for the measure, "travel on business," where N=54.
³ N=30
⁴ N=18
⁵ N=96
⁶

Means which have a different number of underscores are significantly different from one another based on a 95% Scheffe multiple comparison; means which have the same number of underscores are not significantly different; and, means which are not underscored are not significantly different from any of the other means.

Table 25 shows correlation results of the four activity dimensions with the measures of satisfaction and preferences. In general, the correlations are small, with only selected instances of significant relationships. In fact, it appears that the levels of participation in selected activities are the weakest set of possible determinants of owner satisfaction and preferences which were examined. Of the particular activity dimensions, the frequency in which tennis is played was consistently unrelated or else was weakly related to owner satisfaction and preferences. Swimming frequency also was not related to indicators of owner satisfaction; however, it did exhibit selected associations to housing type preferences.

The frequency of travel on business and of gardening were related in selected instances to owner satisfaction. In particular, the positive and significant correlation among the townhouse owners of the frequency of business travel with the level of overall satisfaction could be due to heavy business travelers being easier to please than the counterpart owners who must travel less frequently, but it is more likely the case that the townhouse mode of living is more suitable and, as a result, more satisfying to the frequent business traveler. The correlations between owner satisfaction with intangible attributes and the frequency of gardening are somewhat unclear and merit further study since condominium owners, in particular, do not individually own land where gardening might take place.

Specific results concerning housing-type preference relationships with the activity dimensions can be summarized fairly easily: (1) the significant correlations for the frequency of gardening are attributable to differences between the single-family detached owners and the groups of condominium and townhouse owners, and (2) the weak to nonsignificant correlations for the fre-

Table 25
Pearson Product-Moment Correlations Between Measures of the Level of Participation
in Selected Activities and Measures of Satisfaction and Preference
-Both Aggregated and Disaggregated by Housing Type Owned-
(N in Parentheses)

Measures of Preference ²	Measures of Level of Participation in Selected Activities ¹			
	Swim	Tennis	Garden	Travel on Business
Overall Satisfaction (item)				
Total Sample	-.04 (199)	.11 ^a (199)	.04 (199)	.02 (198)
Condominium Owners	-.15 (55)	.16 (55)	-.04 (55)	-.09 (54)
Townhouse Owners	.13 (30)	.26 ^a (30)	.11 (30)	.36 ^b (30)
Single-Family Detached (SFD) Owners	-.11 (114)	.06 (114)	-.11 (114)	-.07 (114)
Satisfaction with Tangible Attributes Scale				
Total Sample	-.03 (198)	.00 (198)	.09 (198)	-.06 (197)
Condominium Owners	-.08 (55)	.01 (55)	.09 (55)	-.08 (54)
Townhouse Owners	-.01 (30)	.16 (30)	.00 (30)	-.05 (30)
SFD Owners	-.11 (113)	-.03 (113)	.08 (113)	-.15 ^a (113)
Satisfaction with Intangible Attributes Scale				
Total Sample	.07 (199)	-.03 (199)	.24 ^d (199)	.03 (198)
Condominium Owners	-.11 (55)	.04 (55)	.25 ^b (55)	-.01 (54)
Townhouse Owners	.04 (30)	.15 ^b (30)	.24 ^a (30)	-.13 (30)
SFD Owners	.11 (114)	-.16 ^b (114)	.01 (114)	-.04 (114)
Overall Satisfaction Scale				
Total Sample	.00 (176)	-.01 (176)	.10 ^a (176)	-.02 (175)
Condominium Owners	-.08 (46)	-.04 (46)	.19 (46)	.14 (45)
Townhouse Owners	-.07 (28)	.19 (28)	.05 (28)	-.10 (28)
SFD Owners	-.03 (102)	-.09 (102)	-.15 ^a (102)	-.14 ^a (102)

Unadjusted Probability of Purchasing a Single-Family Detached Home				
Total Sample	.16 ^c (196)	.08 (196)	.15 ^b (196)	.14 ^b (195)
Condominium Owners	.21 ^a (55)	.15 (55)	-.13 (55)	.19 ^a (54)
Townhouse Owners	-.01 (29)	.06 (29)	-.04 (29)	-.12 (29)
SFD Owners	.07 (112)	.13 ^a (112)	-.03 (112)	.20 ^b (112)
Unadjusted Probability of Purchasing a Single-Family Attached Home				
Total Sample	-.09 (197)	.04 (197)	-.21 ^d (197)	.02 (196)
Condominium Owners	.12 (55)	.20 ^a (55)	-.04 (55)	.31 ^b (54)
Townhouse Owners	-.11 (30)	.10 (30)	.10 (30)	.23 (30)
SFD Owners	-.03 (112)	-.13 ^a (112)	-.07 (112)	-.16 ^b (112)
Unadjusted Probability of Purchasing a Multi-Family Attached Home				
Total Sample	-.16 ^b (197)	-.01 (197)	-.18 ^c (197)	-.07 (196)
Condominium Owners	-.23 ^b (55)	-.01 (55)	.02 (55)	.04 (54)
Townhouse Owners	.07 (30)	.09 (30)	-.10 (30)	.12 (30)
SFD Owners	-.05 (112)	-.08 (112)	-.01 (112)	-.13 ^a (112)

Key: a p < .10
b p < .05
c p < .01
d p < .001
p < .001

Notes: ¹ Measured where 1=Never, 2=Seldom, 3=Often, and 4=Regularly.
² See Table 8 for a description of these measures.

quency of travel on business tend to be a consequence of differences among owner groups in the respective patterns of relationships. The more frequently a condominium owner travels on business, the greater are the stated probabilities of purchasing a single-family detached home and of purchasing a townhouse, which is likely indicative of an expectation of continued upward mobility. The single-family detached homeowner who travels frequently on business trips appears to have reported a greater probability of purchase of another single-family detached home and a lower probability of purchase of either of the common ownership options, compared to the less-frequent business traveler in this owner group. It does appear, based on these travel-frequency/preference results, that ownership of a single-family detached home possesses a measure of status and comfort among frequent business travelers which supercedes the convenience of common ownership.

Given the obvious importance of consumer lifestyles in influencing preferences for alternative types of housing, additional study of the range and extent of engagement in activities, such as those assessed here, appears to be warranted. Such study should provide additional insights into suitable bases for further segmentation of the housing market, which is definitely needed for use by builders and brokers.

LIMITATIONS

Prior to addressing the implications of this study, it is important to delineate the shortcomings and limits of generalization of the findings. The stated purpose of this study was to conduct a pilot investigation of similarities and differences among owners of different types of moderately priced housing. Cost constraints dictated that only owners in one location, a specific planned community within the Houston metropolitan area, could be studied. As a consequence, the limits of absolute generalization do not extend much beyond the subdivisions which were canvassed and, perhaps, to other groups of owners of moderately priced housing in the vicinity. Moreover, the study findings are further limited in their generalization because of the number of households contained in the sampling frame that either could not be contacted or refused to be interviewed; it is questioned whether the refusals would have responded in a similar manner to those who did complete the interview. In addition to these limitations concerning the nature and scope of the groups of homeowners studied, responses to the questions which required respondent recall of their household's prepurchase search behavior were likely to be somewhat biased due to memory error. Furthermore, only one household head was interviewed in those instances where there was more than one. To the extent that the other household head would have responded differently, particularly to the satisfaction, preference and attitude questions, the results could vary accordingly. However, this limitation was believed to have a minimal impact.

Despite the presence of these limitations, the comparisons among owner groups on dimensions that were not unique to the study location are likely to

be generalizable in a relative sense to similar owner groups in other suburban areas. Although the characteristics of various market segments were examined in a bivariate context, it was beyond the scope of this study and technical report to provide a multivariate account of possible factors which determine owner satisfaction and preferences.

SUMMARY AND CONCLUSIONS

Results of this study clearly revealed important and significant differences among the groups of owners of condominium units, townhouses, and single-family detached homes. For example, smaller households, lower household income and smaller houses characterized condominium owners relative to townhouse and single-family detached homeowners. While all residents tended to be more satisfied than dissatisfied with general and specific aspects of their housing, condominium owners were consistently the least-satisfied owner group. Consumer preferences for alternative types of housing tended to reflect a dominant desire to purchase a single-family detached home when next in the market.

Consideration of various factors which might account for the satisfaction and preference differences provided indications that owner groups differed in their search behavior for their present home and stressed different sets of attributes in that search. While condominium and single-family detached homeowners differed in the housing attributes stressed, townhouse owners mirrored single-family detached owners in the tangible housing features desired and resembled condominium owners in the common convenience amenities desired. In addition to differences in prepurchase search behavior, consumer attitudes differed among owner groups as did their participation in selected activities related to the housing options studied. In general, the relationships of these factors to owner satisfaction and preferences were weak to moderate in strength, although there were selected instances of strong associations. For example, attitudes toward selected aspects surrounding home ownership tended to be significantly related not only to owner satisfaction, but to housing-type preferences as well.

The results of this pilot study do have important implications for the housing industry in general and to individual components in particular. First, the prevailing preference for purchase of a single-family detached home, even among the majority of condominium and townhouse owners, indicates that widespread acceptance of higher-density housing among the home-buying public will likely require the presence of significant constraints, such as prohibitive prices for single-family detached homes. Evidenced by the number of first-time buyers who purchased a condominium, some members of the housing market already find single-family detached homes initially prohibitive.

Second, the findings that satisfaction and preferences are not explained very well by an owner's prepurchase search behavior should demonstrate to builders and brokers alike that development of owner satisfaction and housing-type preferences rests with the owners and their present home. To the extent that builders and developers can accommodate the attributes desired by potential purchasers at a reasonable and affordable price, the customer will likely be satisfied and opt to purchase a given type of home again. It is clear from the results presented here that this task is a formidable one given the number of possible combinations of attributes possible. But, the results also indicate the presence of segments of owners that have reasonably distinct characteristics and preferences.

Third, the approach taken in this study and the questionnaire used are readily generalizable to other locations for the conduct of a similar type of investigation. Moreover, it can be easily modified to incorporate other types of housing, such as patio and mobile homes. Fourth, this study did find evidence that it may be suitable to employ surrogate measures of owner satisfac-

tion through the use of attitude statements instead. Such an approach might be appealing to a builder or developer desiring to conduct a study of owner satisfaction, yet is concerned about bias which might be present due to asking owners directly.

As an aid in planning future building activities, current owners should be considered for input. Otherwise, their satisfaction and preferences must be assumed. While current owners of homes in a given vicinity will not necessarily be the only potential purchasers of new housing construction or even the primary ones, it is nevertheless important to assess results of prior efforts and to incorporate that information when planning future activities just as it is essential that the current and future status of the housing market be considered. The potential consequences are entirely too devastating to be discounted.

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APPENDIX

Questionnaire Used in Study

Respondent Number _____

Phone Number _____

Name _____

Address _____

Hello, Am I speaking with one of the heads of the household?

(If no, ASK: Is one available to come to the phone?)

(If yes, ASK: May I please speak with one of them?)

If the response is no, thank them and try another number.

If the heads of the household are not available, ASK: When might I call again to speak to them? TIME _____

When the household head is on the phone:

Hello, I am calling on behalf of Dr. James Leigh, Professor of marketing, at Texas A&M University. Dr. Leigh is conducting a study of homeowners in the Houston area.

1. Do you own or rent this home? _____ own
_____ rent

If rent, thank them and try another number.

If own, then respond: Great! Your participation in this important study will help us achieve an accurate sample of Houston area homeowners. You can rest assured that your responses will be kept confidential and anonymous. The survey should take at the most ten minutes. May I proceed?

2. For how long have you owned your home? _____ years
(If less than 1 year, thank them for their response and try another number).

Was your home new when you purchased it? _____ yes
_____ no

If no, How old was it when you purchased it? _____ years

3. What is the type of housing structure?
 _____ 1 Detached single family
 _____ 2 Attached single family (no dwelling above or below yours)
 _____ 3 Attached multi-family (a dwelling above or below yours)
 _____ 4 Other _____ PROBE
4. What about the type of ownership? Do you have
 _____ exclusive use and ownership of all the land and improvements, or
 _____ joint or common ownership of some of the real property.
5. Which of the following phrases best describes how you feel about your home?
 _____ 1 Dissatisfied
 _____ 2 Somewhat dissatisfied
 _____ 3 About equally satisfied and dissatisfied
 _____ 4 Somewhat satisfied
 _____ 5 Satisfied
 _____ 8 Don't know
6. Now, I'm going to ask you about your satisfaction with particular features of your home. How satisfied are you with

	D	SWD	E	SWS	S	DK
Size (of the heated and cooled area) _____ square feet.	1	2	3	4	5	8
Size of Master bedroom and bath	1	2	3	4	5	8
Number of bedrooms and baths _____ bedrooms _____ baths	1	2	3	4	5	8
Closet space	1	2	3	4	5	8
Kitchen facilities	1	2	3	4	5	8
Living area/Den	1	2	3	4	5	8
Quality of construction and trimwork	1	2	3	4	5	8
Costs of ownership	1	2	3	4	5	8

	D	SWD	E	SWS	S	DK
Potential for appreciation	1	2	3	4	5	8
Location	1	2	3	4	5	8
Privacy	1	2	3	4	5	8
Freedom from noise	1	2	3	4	5	8
Security	1	2	3	4	5	8
Do you have enclosed parking?	1	2	3	4	5	8
_____ yes						
_____ no						

7. Are you a member of a homeowners association? _____ **yes** _____ **no**

If yes, how satisfied are you with:
the association

1 2 3 4 5 8

the monthly dues

1 2 3 4 5 8

yard care services

1 2 3 4 5 8

other maintenance services

1 2 3 4 5 8

What recreational facilities are provided?

_____ swimming pool

_____ tennis courts

_____ game room

_____ other _____ PROBE

_____ other _____ PROBE

We'd also like to know how you went about locating and purchasing your present home and your plans for the future:

8. Was this your first home purchase? _____ **yes**
_____ **no**

If no, ask how many prior to the present one? _____

Over approximately how many years? _____

Were they all within the greater Houston area?

_____ **yes**

_____ **no**

Were they all See question 3? _____ **yes**
_____ **no**

If no, why did you make the change to a different type of housing? _____

9. For how long were you actively (i.e. physically inspecting homes) searching for your present residence? _____ (put into days if the respondent uses another dimension)

Approximately how many homes did you see over this time period? _____

What percent of these were seen with a real estate agent? _____

What percent of these did you consider making an offer to purchase? _____

Out of all the homes you looked at, were they all in the same general area of Houston? _____ yes
_____ no

10. I'm going to read a list of housing features. For each one, indicate whether it was deemed Essential, Desirable, Undesirable, or Not Important, when you were looking for your present residence:

	E	D	UD	NI
A master bedroom large enough for a kingsize bedroom suite	1	2	3	4
Walk-in closet space in bedrooms	1	2	3	4
A kitchen large enough for a breakfast nook	1	2	3	4
Connected, enclosed garage	1	2	3	4
Fireplace	1	2	3	4
Formal dining room	1	2	3	4
One bedroom per household member	1	2	3	4
Guest bedroom/study	1	2	3	4
Private backyard	1	2	3	4
Security features within the house	1	2	3	4
Common recreation facilities	1	2	3	4
Common lawn care and maintenance	1	2	3	4

11. I am going to read a list of sources you might have received information or advice from while you were in the market for your home. Did you receive information/advice from:

- _____ the real estate salesperson
- _____ friends
- _____ residents of the neighborhood
- _____ relatives
- _____ co-workers
- _____ previous owner of the home (Ask only if no on question 2b)
- _____ advertisements
- _____ newspaper articles, books or pamphlets
- _____ the local Board of Realtors
- _____ legal counsel
- _____ employee of lending institution
- _____ employee of home inspection service

12. How long do you think you will remain in your present residence?

- _____ 1 1 to 2 years
- _____ 2 3 to 5 years
- _____ 3 6 to 10 years
- _____ 4 More than 10 years
- _____ 8 Don't know

13. Assume that you are now in the market for your next residence, what is the probability that you would purchase a See question 3 (and then follow with the other three options in the order noted below)?

- Detached single family _____ %
- Attached single family _____ %
(townhouse)
- Attached multi-family _____ %
(condominium)

Would you (add again if response to question 4 was "joint or common ownership") purchase a residence where there is joint or common ownership of some of the real property (i.e. such as with condominiums).

_____ **yes**
_____ **no**

14. I'm going to read several statements about housing options. For each one I read, please indicate whether you:

	SD	D	SWD	N	SWA	A	SA
Compared to renting, home ownership makes good financial sense	1	2	3	4	5	6	7
I feel safe in my home	1	2	3	4	5	6	7
I am seldom bothered by noise coming from my neighbors	1	2	3	4	5	6	7
I have more important and interesting things to do than to spend my time: On home repairs	1	2	3	4	5	6	7
On yardwork	1	2	3	4	5	6	7
On making home improvements	1	2	3	4	5	6	7
I have the freedom to do as I please in modifying:							
the exterior of my home and yard	1	2	3	4	5	6	7
the interior of my home	1	2	3	4	5	6	7
My home provides me with enough privacy	1	2	3	4	5	6	7
Homeowner Associations:							
restrict a homeowner's freedom	1	2	3	4	5	6	7
operate in the best interests of the members	1	2	3	4	5	6	7

Now, a few final questions about your household.

15. How many are in your household? _____

How many are under 18? _____

16. Of the adults in your household, how many (if none write "0"):

_____ work full-time outside the home?

_____ work part-time outside the home?

_____ are retired?

For each person who works,

	#1 (Respondent)	#2 (Other Adult)
occupation	_____	_____
distance to work	_____	_____

17. Is total household income greater than

_____ \$30,000

_____ \$40,000

_____ \$50,000

18. How often do you and/or your household members

	Never	Seldom	Often	Regularly
go swimming	1	2	3	4
play tennis	1	2	3	4
garden	1	2	3	4
travel on business	1	2	3	4

That concludes the questions. On behalf of Dr. Leigh and Texas A&M, your cooperation and participation are sincerely appreciated.

The Texas Real Estate Research Center is committed to serving the educational needs of the citizens of Texas on topics related to real estate and urban economics. Your completion of this questionnaire will help us accomplish this end.

NAME _____ ADDRESS _____
CITY _____ STATE _____

Present principal business _____

To what professional organization do you belong? _____

What magazines/periodicals do you read most regularly to stay abreast of real estate topics?

- (1) _____ (2) _____
- (3) _____ (4) _____

To what degree did this publication or audio visual meet your needs?

- Too technical _____
- Not technical enough _____
- Too brief _____
- Too detailed _____
- Other comments _____

What information/topics/issues related to real estate do you need to know more about?

Have you had previous contact with Texas Real Estate Research Center?

No _____ Yes (if YES, specify) _____

- Realty Reports
- Tierra Grande
- Center publications
- Seminars, workshops, short courses
- Other (specify) _____

We appreciate your cooperation and assistance.

Return this questionnaire to:
Publications Room
Texas Real Estate Research Center
Texas A&M University
College Station, Texas 77843

