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Assessing Middle-income Residents' Attitudes about Their Urban High-rise Condominium in Contemporary American Society

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Abstract

Most research on high-rise housing has focused on low-income residences, and usually the psychological and social well-being of women and children. The validity of such findings are questionable for other populations since high-rise living has served other groups and their various needs in particular settings. Lack of knowledge and understanding about high-rises has represented an obstacle to the accurate representation of American urban reality in residential environments. The review of literature and factor analysis identified important environmental factors. The survey was conducted in the selected downtown high-rise communities of major U.S. cities. Analyses revealed that there were unique characteristics of residents who prefer to live in this type of housing. It was also found that living in middle-income urban high-rise condominiums does not contribute significantly to the problems associated with high-rise living itself. Even though there were some deficiencies of social interaction and activities among residents, the middle-income condominiums were serving particular residents as maintenance-free and safe place imprinted by a positive image of sweet memories or sometimes by a window view presiding over downtown skyline.

Keywords: residential satisfaction, high-rise apartment

1. INTRODUCTION

While a preference exists in the United States for ownership of single-family dwellings, real estate costs and resident needs are making urban multifamily housing a viable alternative. According to demographers, single-person households, single parents, and other non-traditional 'families' are expected to increase in number over the next decades. This change in family composition may influence the need for a high density urban housing. However, past research has shown this type of housing, particularly high-rise apartments, has detrimental effects on the well-being of residents (Byrne et al., 1986; Hannay, 1984; Edwards et al., 1982; Saegart, 1980). Research has often focused on low-income residences, and usually the psychological and social well-being of women and children. Consequently, resident concerns, in terms of physical, social, and economic factors, have been overlooked in defining the values of high-rise dwellings. Riding with this consensus, it appeared that assistance and attention by the Federal government and blank condemnation by the general populace reflected a lost interest in building high-rise housing in recent years.

Attitude toward high-rise housing

Most research on housing satisfaction has indicated that single-family detached houses are preferred. The advantage of living in a traditional single-family house over urban multifamily housing has been frequently commented on. Michelson (1977) found that increased privacy, more space, private control of outside space, and adequate opportunity for handyman activities like gardening were main reasons for choosing to live in a detached house. Cooper-Marcus and Lindsay Hogue (1975) pointed out that the preference for a single-family detached house is a universal trend expressed by Americans in search of a private and unique form of independent dwelling by stating, "most people, and especially families, carry with them a conscious or unconscious memory of or aspiration toward the single-family house ..." The attitude toward a single-family house may be interpreted as a tangible sign of separate, unique and private physical spaces, and personal status.

Residents' attitudes toward high-rise housing have undergone a dramatic change. It appears that, whether in public housing or private luxury condominiums, the volume of standardized dwelling units, their frequent flat-roofed visual uniformity, and the relatively short construction time associated with the increased use of industrial fabrication contribute to lack of acceptance by the general populace. Michelson (1968) reported that 85% of urban residents preferred living in single family houses to an apartment buildings. This means that high-rise housing is not accepted as an ideal form of housing. Thus, the high-rise building type is rejected by most American as a family home because it gives no territory on the ground, violates the traditional image of what a house is, and is perceived unconsciously as a threat to one's self-image as a separate and unique personality (Cooper-Marcus, 1976). Jacobs (1993) argued that this type of urban housing lacks diversity and vitality, thus creating only dullness and discouraged street life. As a result, people do not have feelings for their neighbors, social interactions, or identity with their stereotyped, anonymous and inflexible residences. High-rise housing is often viewed as second-class housing by tenants, people who live adjacent to them in single-family neighborhood, and by developers, who

may view these developments as investments, not homes (Dreier, 1982).

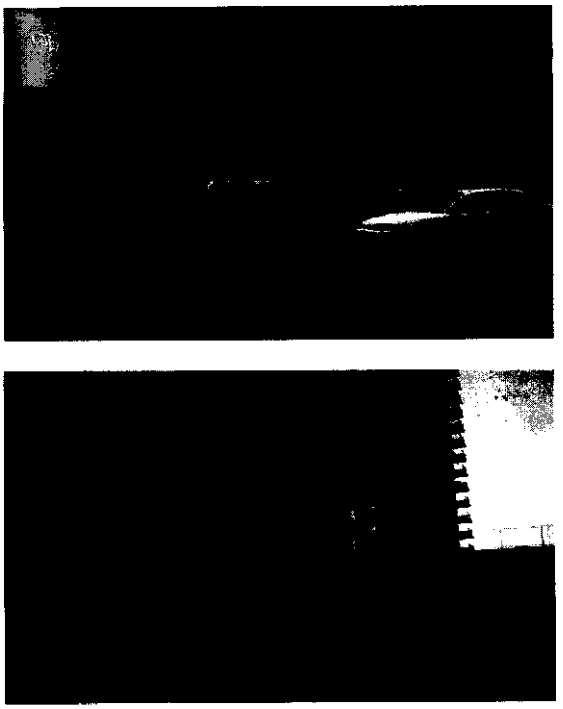

Figure 1. A Typical Low-income High-rise Apartment Building, Washington, D.C.

By the 1980s, approximately 15% of the nation's total housing stock consisted of multi-family units (Myers, 1990). Currently, multifamily housing makes up a major portion of American rental housing (Gilderboom, 1988). This fact suggests that, although residents prefer single-family housing as ideal for their permanent residences, some urban dwellers accept apartment housing for their particular life cycle stage (i.e., pre-family, post-family, or childless adults). Changing family composition and economic structure has created a new breed of tenant in recent years. These tenants no longer view apartment living as a stop-gap period of residency to be endured while saving for the purchase of a single-family home. The aging of the adult population and increasing housing costs have made it hard to achieve home ownership. In some cases, urban residents choose downtown high-rise residences for the city's cultural opportunities and job locations.

Moreover some research has identified positive attitudes toward high-rise apartment living. Mackintosh (1982) conducted research to examine the effects of high-rise living for the middle-income family in New York City. She concluded that well-designed and well-managed middle-income high-rises provided a satisfactory environment for families with young children. In particular, families with employed women and people who had grown up in apartments were the most satisfied with their housing. Ramirez (1981) found that a majority of high-rise residents agreed that high-rise condominiums use land economically, require less maintenance time, and are safer than other forms of dwelling. His research has shown that most residents did not believe that high-rise condominiums limit self-expression, are noisy, too crowed, or impersonal. Bubar (1968) reported that the majority of the residents in a middle-income high-rise complex in Los Angeles indicated design and prestige as the most favorable factors. Considering the early European approach toward high-rise buildings, where they first appeared, residents' attitudes correspond to those aspirations, achieving artistic emphasis, social distinction of individual, and demonstration of an abstract power.

Divergent attitudes toward high-rise housing indicate that high-rise apartments have their own advantages for certain groups and can be accepted as an alternative housing type in contemporary American society. After a controversial beginning at early this century and a period of reluctant tolerance, it appears today that high-rise housing is merging into the general pattern of housing in the United States.

Impacts of high-rise living

Psychological effects. There appears to be almost no limit to how high a high-rise building can be. Living off the ground in a high-rise has been associated with issues of negative psychological and social well-being of residents. The psychological effect of living above tree tops often leads to certain human problems over recognizing the importance of direct contact with natural surroundings.

It could be argued that high-rise living is difficult for larger families with many children, although these high-rises offer benefits to single people, couples, and small family units. Critics have been often focused on the well-being of women and children because they are usually cooped up all day in their small and cluttered apartments. Vliet (1983) reported that apartment children were purportedly more aggressive because they could not get back quickly to the safe shelter of their homes and, in order to survive, needed to learn to be tough. In a study on families in Hong Kong, Mitchell (1971) asserted that as floor height increased, people scored higher on an index of hostility, a measure of deep emotional stress. Nahemow and colleagues (1977) also found that elderly people in high-rise apartments were afraid of fire, uneasy that the elevator would leave them stranded, and anxious about having only one entry point to their apartments.

Effects on social interaction. House-bound residents of high-rises may miss a wide range of social interactions on street level. High-rise buildings are associated with the high-density that often makes people's relationships superficial, specialized, instrumental, and impersonal. Cooper-Marcus (1974) contended that women in high-rise apartments were less likely to know their neighbors and more likely to spend time alone in their apartment with pre-school children. Mehrabian (1976) argued that socially

adept urban dwellers who must live in extremely dense, complex, unpredictable, and unpleasant environment, tended to search for privacy and low-load living spaces, (namely apartments) because apartments are designed to ensure maximum privacy, security, and low loads (e.g., good soundproofing, no children, or door-to-door salesman). Indeed, high-rise residents must face an large number of building neighbors and consequently suffer from social withdrawal engendered by unregulated social load.

Concepts of residential satisfaction

Apartment housing may never be a totally satisfactory substitute for a detached single-family house. It seems that sensitively designed housing that considers basic human "needs, values, and beliefs" might still promote residential satisfaction. Dissatisfaction with one's residential environment results in vandalism, poor maintenance, crime and the exodus of tenants. A practical approach to issues of values and attitudes is an explicit investigation of residents' satisfaction with attributes of the living environment. It is in this way that we conceive of residents' attitudes as a global representation of their response to the quality of the residential environment. Fried and Gleicher (1961) were among the first to suggest that resident satisfaction might be a more appropriate criterion for evaluating the quality of housing than observed physical characteristics, such as structure and plumbing. Thus, the concept of resident satisfaction with aspects of their living environment has become the preeminent indicator for judging the success of housing development, measuring incipient residential mobility, and assessing residents' perceptions of inadequacies in their current housing (Galster, 1987).

The review of the previous research on housing and residential satisfaction indicated several important factors for the evaluation of residential quality and provided a main framework for exploring in-depth analysis of housing attributes. Among them, site appearance, management, maintenance, safety, similar neighbors, interior space quality, outdoor facilities, social networking places were most frequently cited elements (Anthony et al., 1990; Galster, 1987; Cooper-Marcus & Sarkisian, 1986; Weidemann et al., 1982; Francescato et al., 1977; Wekerle, 1977). Moreover, residents in a high-rise living environment are likely to expect many of the residential amenities provided in single-family dwellings. Such traditional elements as outdoor social activities, private space, play areas for children, and a distinctive architectural treatment that promotes identity and self-expression are all important since these are directly related to a lack of traditional single-family amenities. The extent to which high-rise residents will be satisfied with these elements will determine the physical, social, or cultural value of a particular type of urban housing. The conception of residential satisfaction for an evaluation is diagrammed in Figure 2.

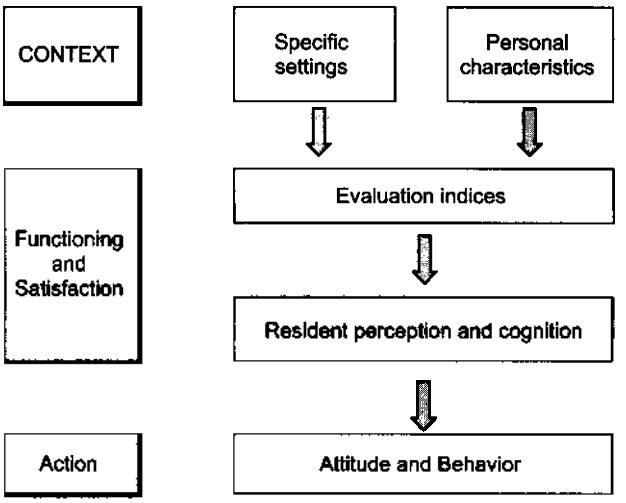

Figure 2. General outline of determinants and consequences of residential satisfaction

Effects on physical well-being. Compared with single-family housing, high-rise housing represents a very different style of living. Apartments provide attached but isolated dwelling units, which typically place individuals in close proximity to other residents. One might expect high-rise residents to be more concerned with feelings of crowding, noise, or fire safety. In fact, there are many features of high-rise apartment housing that could influence the physical well-being of residents (i.e., aesthetic quality of building appearance, lack of storage space, upkeep of dwelling unit, recreational facilities, security systems). When such basic requirements as sunshine, light, space, good site layout, upkeep are neglected, high-rise structure itself is likely to affect the physical well-being of occupants and be potential slums.

Research Objectives

Based upon the statement of the problems associated with high-rise condo, this research first identifies which aspects of American condos are related to residents' satisfaction. Then it investigates the degree of satisfaction in order to evaluate residents' attitudes about their dwelling units. Finally it conducts regression analysis to find out the direct predictors of overall satisfaction.

2. METHODOLOGY

Sampling. By considering geographically disparate locations, reflected in U.S. Census track maps, four high-rise apartment communities across the United States were selected as the target population (n= 1,235): Park West Village in New York , N. Sandburg Terrace in Chicago, The Constock in Los Angles, and The Sussex in Houston. In selecting these sites, similarities such as exterior building forms and landscaping elements, proximity to CBD (Central Business District) area, income-level, type

of ownership were controlled. Since each high-rise complex had a different numbers of residents, disproportionate stratified random sampling was used. With the intensive follow-up procedures, 248 residents responded to the survey out of a sample size of 400 (response rate =62%).

Figure 3. Survey site: New York-The Park west, Chicago-North Sandburg Village, Houston-The Sussex, Los Angeles-The Constock (clockwise from the top left)

Instrumentation and measures. A mail questionnaire on a five-point Likert scale was designed to evaluate the degree of satisfaction with urban high-rise condominium: 1=strongly dissatisfied and 5=strongly satisfied. Fifty-five survey statements and items were developed by modifying existing instrumentation and on the basis of the pilot survey. Forty-one questions were contained in pre-identified factor sets. The remaining questions requested socio-demographic or descriptive information. After the pilot-test and initial factor analysis, the revised survey packet including a questionnaire, a cover letter, a return envelope and return postage was mailed out on mid-February 1997.

Table 1. Residents' responses of high-rise condominiums

Survey site	No. of Population.	No. of Sample	No. of Returned	Response Rate
New York	500	100	68	68%
Chicago	326	100	76	76%
Los Angeles	180	100	46	46%
Houston	192	100	58	58%
Total	1,198	400	248	62%

3. RESULTS

Descriptive statistics for the scales are presented in Table 2. In order to validate the conceptualization of residential satisfaction, a principal component factor analysis was performed for the whole set of questions. The Kaiser-Meyer-Olkin (KMO) measure (=.8770), which tests sampling adequacy, indicated that a factor analysis was adequate since correlation between pairs of variables can be explained by the other variables. Based on a Scree plot, seven components were retained producing a simple structure that explained 58.19% of the variance. For interpretation, variables with component loadings greater than 0.40 were retained. Four items did not load on any of the seven factor sets. The scales were labeled Unit, Safety, Social, Identity, Neighbor, Manage and Visual. The scale scores are means of the non-missing component items. They therefore reflect actual satisfaction with all features in the respondent's primary setting. The overall mean for residential satisfaction was 4.16 (SD=.78). The internal consistency reliability of the seven dependent measures was acceptable, as test results exhibited consistency level with Cronbach's alpha ranging from .7312 to .9910.

Table 2. Descriptive Statistics of Survey questionnaire Components

Factor Name	item s	M	SD	alpha	Variance explained
UNIT Physical quality of dwelling unit	7	3.66	.86	.8109	9.70
SAFETY Safety and securities	5	4.29	.70	.7836	8.47
SOCIAL Social interaction between neighbors	6	2.82	.95	.8628	10.62
IDENTITY Self-expression and place-identity	5	4.07	.79	.7868	7.17
NEIGHBOR Physical qualities of neighborhood environment	3	3.79	.99	.9910	6.28
MANAGE Management and Maintenance	6	4.15	.73	.8455	9.87
VISUAL Aesthetics and visual comforts	4	4.02	.81	.7312	6.10
Total	36	4.16		.9237	58.19

The degree of residential satisfaction

As shown in Table 2, degree of satisfaction with each of the factors was different. Mean satisfaction was 3.66 for physical quality of dwelling unit, 4.29 for safety and security, and 2.82 for social interaction. It was 4.07 for self-expression and place-identity, 3.79 for physical qualities of neighborhood environment and 4.15 for

management and maintenance. For aesthetics and visual comfort about high-rise condominiums, the mean satisfaction was 4.02. Therefore, the most satisfying factors in the high-rise living environment were safety and security. Ramirez (1981) found that high-rise condominiums are safer than other forms of dwelling. On the other hand, the least satisfying factor was social interaction with neighbors. Michelson (1977) noted that in housing estates with a large and transient population, social activities with neighbors is generally rare or totally nonexistent.

On the other hand, Pearson Correlation analysis indicated that except for social interaction, each of these factors correlated highly (p=.001) with each of the others. In particular, management and maintenance indicated strong linear relationship with overall satisfaction with high-rise condos. Social interaction with neighbors does not show a close relationship with overall satisfaction and other factors, implying this factor does not contribute to residential satisfaction.

Table 3. Pearson Product-Moment Correlation Matrix for the Factors Identified

Factors	Unit	Safety	Social	Identity	Neighbor	Manage	Visual
Unit	1.00						
Safety	.447	1.00					
Social	.291	.270	1.00				
Identity	.658	.454	.358	1.00			
Neighbor	.480	.407	.092	.469	1.00		
Manage	.521	.485	.290	.585	.504	1.00	
Visual	.579	.525	.372	.645	.396	.616	1.00
Overall	.597	.515	.350	.582	.471	.699	.591

* Except for Neighbor-Social factor relationship, each cell indicates high correlation each other in the above table atp=.001 level

Description of the survey respondents and housing related characteristics

About 33.6% (or n=83) of the respondents had lived in their current apartments ten years or more, whereas 23% (or n=57) had lived in their home less than two years. The average length of tenure in their current home was six years. The respondents were mainly divided into four cultural groups; 81.5%(n=202) were Caucasian, 8.1% (n=20) were African American, 6.5% (n=16) were Hispanic, 2.0% (n=5) were Asian, and 2.0% were others which included American Indian. More than half were female (62.5% or n=155) and males accounted for 37.5% (n=93) of the responses. Nearly 35.7% of the respondents were in the age group of sixty or more years, whereas residents between 50-59 accounted for 15.2% of the responses. The other age groups all represented 18% of the total responses.

Table 4 shows characteristics of the respondents for marital status and educational attainment. Most commonly, more than half (56.5% or n=139) were single residents though they lived in a number of housing locations. Nearly 18.7% (n=46) of the respondents were divorced, separated, and widowed. The majority of the respondents (75.2% or n=185) indicated that they were unmarried. Married residents comprised 24.8% of the residents. Over 87% of the respondents (n=216) hold at least a baccalaureate, with 37.9% holding a Master's degree or more (n=94).

Table 4. Descriptive Statistics and Chi-square Test for the Personal Characteristics

Personal Characteristics	Frequency (%)	Overall Sat. Mean	SD	χ^2 (D.F.)	Sig.
Length of Residency	n=247				
1-2 years	57(23.1%)	4.02	.66	23.15	.026**
3-5 years	69 (27.9%)	4.10	.82	(12)	
6-9 years	38 (15.4%)	4.20	.72		
10 or more	83 (33.6%)	4.31	.74		
Age	n=247				
0 -29	27 (11.1%)	4.12	.60	33.08	.007*
30-39	46 (18.9%)	3.95	.77	(12)	
40-49	47 (19.3%)	4.08	.86		
50-59	37 (15.2%)	4.03	.66		
60, or more	87 (35.7%)	4.39	.71		
Educational Attainment	n=248				
grade	1 (0.4%)	4.00	.99	8.07	.780
high school	31 (12.5%)	4.29	.81	(12)	
college	122 (49.2%)	4.17	.77		
master or more	94 (37.9%)	4.14	.70		
Income	n=248				
$0 - $19,999	5 (2.3%)	3.00	.71	32.63	.001*
$20 - $39,999	47 (21.3%)	4.11	.80	(12)	
$40 - $59,999	77 (34.8%)	4.22	.72		
$60 - $79,999	39 (17.6%)	4.16	.60		
$80,000 +	53 (24.0%)	4.26	.76		
Employment Status	n=248				
Full-time	153 (61.7%)	4.09	.72	13.83	.086
Part-time	16 (6.5%)	4.33	.78	(8)	
Not employed /Retired	79 (31.9%)	4.31	.78		
Marital Status	n=246				
	61 (24.8%)	4.13	.79	8.95	.346
Married	139 (56.5%)	4.25	.68	(8)	
Single	46 (18.7%)	3.98	.84		
Other					
Race	n=248				
Caucasian	202 (81.5%)	4.17	.76	10.38	.846
African/Ameri.	20 (8.1%)	4.50	.62	(16)	
Hispanic	16 (6.5%)	4.00	.65		
Asian	5 (2.0%)	4.00	.71		
Other	5 (2.0%)	4.00	.70		
Gender	n=248				
Male	93(37.5%)	4.10	.71	7.48	.113
Female	155(62.5%)	4.22	.77	(4)	

Note: Scoring was 1=strongly dissatisfied, and 5= strongly satisfied.
*p<.01 **p<.05

The educational attainment of these high-rise resident is well above the national average of 1990 U.S. Census data; slightly more than 20% of the population had a Bachelor's degree or higher. Over 68% of the respondents (or n=169) indicated that they were employed on a full-time or part-time basis, whereas 32% of the survey respondents were not employed or retired. The annual household income in the $40,000 to $59,000 group was found to be the median in this survey. The respondents have a considerably higher income than the national median. According to the 1990 Census, the national median family income for household is $35,225. In particular, the median income of U.S. cities surveyed in this research shows slight differences from other cities or counties (Chicago, $30,707; New York City, $34,360; Los Angeles, $34,364; Houston, $30,248). Sixty-six percent of the respondents reported an annual household income of $40,000 or more. Only 2.3% of the respondents indicated an annual household income less than $19,999.

A Chi-square analysis was performed on these personal characteristics by the degree of overall satisfaction. It was found that three of these variables, length of residence (χ^2=23.15, p-value=.026), age (χ^2=33.08, p-value=.007), and income (χ^2=32.63, p-value=.01) significantly differed by the degree of satisfaction. It is evident from the analysis that a group of residents who have resided for 10 years or more and whose income range is over $80,000 tend to report higher satisfaction than any other groups. It also revealed that the age group of 60 or more was more satisfied with their high-rise condos.

Regression analyses

In order to find the direct predictors of overall satisfaction, a stepwise multiple regression was performed for all the factors explored. As indicated in Table 5, there were three important predictors of overall satisfaction accounting for 58% of the variance in the variables entered: Management and maintenance, Physical quality of dwelling unit and safety and securities.

Table 5. Trimmed Model of Residential Satisfaction

Environment Variables	b	β	Sig.
Constant	.262		.259
Management and maintenance	.505	.469	.000*
Physical quality of dwelling unit	.233	.252	.000*
Safety and securities	.170	.153	.003*
Social interaction	.076	.094	.039
Self-expression and place-identity	.077		.209
Physical qualities of neighborhood environment	.068		.193
Aesthetics and visual comfort	.087		.154
R^2	.586		
Adjusted R^2	.578		

*p≤.01

The most important predictor of residential satisfaction was management and maintenance (beta = .469). Several studies reported that maintenance and managerial aspect were highly correlated with residential satisfaction (Cooper-Marcus, 1986; Weidemann & Anderson, 1982). Quality of the dwelling unit and consistent maintenance followed by supportive management policy are one of the competitiveness against other type of housing. Households experiencing a high level of safe and secured environment were more likely to be satisfied with their housing.

4. DISCUSSIONS AND CONCLUSION

The problems inherent in the urban high-rise apartment buildings are not specific to a single personal characteristics, much less to a single physical environment; perhaps with the multifaceted character of housing, when there are discrepancies between residents' various expectations and their environmental settings, frustrations and less dependence on this residential type of housing might develop. Descriptive statistics of personal data showed that the typical high-rise resident was a single, employed, Caucasian with a college educational background. This group also had lived in their current high-rise condominiums for 6 to 9 years, with an income, ranging from $40,000 to $59,999. All age groups of both genders were found to be generally representative high-rises. Contrary to general assumptions about high-rise building as inappropriate housing alternative, these group of resident were highly satisfied with their residences implying that these groups were ideally suited to this type of housing.

It was expected that there would be certain differences in satisfaction from all environmental factors. The mean score of each factor explored from the Factor Analysis indicated that safety/security (Mean score = 4.29) was the most satisfactory elements in downtown middle-income high-rise residences. This implies that safety concerns may be widespread in low-income high-rise housing in which economic characteristics of residents may also contribute to fear of crime. Respondents indicated that management and maintenance (Mean score = 4.15) was another highly satisfactory factor. Well-maintained grounds, no litter, and no "junk lying around" were a prerequisite to satisfaction mere so than any other specific physical elements and presented a positive image of a comfortable and safe environment.

On the other hand, the analyses showed that social interaction between neighbors was the least satisfying factor (Mean score=2.82). There are several possibilities that may explain this lack of social activity. Since the high-rise structure was invented to provide maximum privacy and social isolation between units, these environment offer rare opportunities to residents for expressing their diverse feelings for neighbors. The increasing number of employed women, and single professionals, the diverse socio-demographic composition of residents, and high turnover rate are believed to inhibit

social networking with neighbors. In downtown high-rise communities with a large and transient population, social activities with neighbors are superficial, impersonal, and specialized. When people do not know many other neighbors by face, and particularly in the lower socio-economic classes, the residents often feel socially isolated. The deterioration of the social climate in high-rise condominiums has often been viewed as one of the deficiencies in this type of housing.

Regression analyses predicted that management and maintenance was the most important predictor for overall satisfaction. One reason is that for relatively high income groups, for single adults, for elderly households, and in cases where the trade-offs with desirable conditions (e.g., proximity to jobs, little home maintenance, excellent public transportation) can be obtained only with centralized high-rise residences, this type of residential structure can be highly satisfactory.

Although it is popularly believed that living in high-rise dwellings is hazardous and stressful for certain vulnerable disadvantaged groups, a particular group of middle-class residents were found to be satisfied with this type of housing when they were aesthetically pleasing and well-maintained. This finding suggests that blanket condemnation of high-rise housing without considering specific contexts is inappropriate. Moreover, such an attitude has the potential to stifle any project designed to analyze the substantial values or conflicts in dwelling. Consequently, critics of middle-income high-rise living environments need to focus on social, political, or economic consequences rather than on the physical factors per se. Instead of researching about separate physical, psychological, and interpersonal qualities of homes, an integrated approach calls for an examination of their very definition and values.

Limitations

Because of the location of the target populations (i.e., metropolitan areas of the selected major cities), it is not possible to generalize the results to high-rise condominiums in other areas of these cities, or American cities of other sizes. The results cannot be generalized to families with children, non-Caucasians or predominantly male subject groups. The results also cannot be generalized from this middle-income sample to other income level populations. Moreover, any conclusions concerning the measurement of factors related to residential satisfaction must be limited to the responses of residents who live in high-rise buildings of twenty-eight stories or less. It is possible that those who did not reply to the survey were less supportive of high-rises. Conclusions regarding resident attitudes and their evaluations will have to be limited to the assessable independent variables provided by the responses to the survey questionnaires.

Implications

The findings of this research clearly point to the need for further study on high-rise housing. One of the prime concerns is to extrapolate from the findings, and to provide feedback on specific design features that lead to more residential satisfaction. Tangible design criteria that should be studied are: (1) aesthetics of building forms, (2) qualities of interior/exterior materials, (3) design of public space, (4) location of accessory buildings, (5) parking and circulation, (6) functional comfort. Apart from the main conclusion that high-rises are appropriate for specific segments of society, it is not possible to scientifically support other recommendations. There are a few suggestions, however, that appear to be appropriate. They include: (1) provide opportunities for personalization on the building exterior, such as balconies or planters; these may be particularly important on visually uniformed structure where less self-expression is displayed; (2) visually emphasize the means of egress from upper floors, and provide a sufficient number of elevators to reduce waiting time; and (3) maximize views from lower floors. Views were one of the reasons residents liked upper floors. Using these basic features, future research needs to address design standards for particular groups in particular spaces to promote the well-being of high-rise residents. Interpreting changes in degree of satisfaction was complex because of confounding variables and results in uneven conclusions regarding the phenomena. Inclusion of a theory of environmental aesthetics will have direct applicability to satisfaction related studies. Another potential research direction is the impact of high-rise environments on middle-class children. It may be that this group of children is able to compensate for the lack of social and play opportunities by providing design solutions and special programs. Finally, a change in attitude and understanding is required of residents and designers. This involves an enhanced understanding and an acceptance of the living experience of condominiums as an appropriate housing type that exists in every place and every community for a particular group of residents. The goal here is not only to evaluate the attitude of inhabitants but rather to recognize and accept it as one of viable housing type.

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