

THE ROLES OF PROPINQUITY AND HOMOGENEITY IN FACILITATING  
SOCIAL INTERACTION AND SUPPORT: A CASE STUDY OF A UNIVERSITY  
APARTMENT COMPLEX

by

POOJA KUKREJA

B. ARCH., Punjab University, India, 1986

---

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1989

Approved by:



Major Professor

TABLE OF CONTENTS

	Page
LIST OF FIGURES.....	iii
LIST OF TABLES.....	iv
ACKNOWLEDGEMENTS.....	vii
Chapter	
1. INTRODUCTION.....	1
Purpose of the study.....	4
2. REVIEW OF THE LITERATURE	
Definitions.....	6
Significance of Social Interaction.....	7
Factors Influencing Social Interaction.....	9
The Role of Propinquity.....	10
Relative Importance of Homogeneity versus Propinquity.....	13
Homogeneity.....	16
Privacy and Territoriality.....	18
The Role of personality.....	20
Significance of Social Support.....	23
Significance of the Proposed Research.....	26
3. THE RESEARCH PROBLEM	
Research Objectives.....	28
Dependent Variables.....	28
Independent Variables.....	29
Key Issues.....	30

	Page
4. RESEARCH METHODOLOGY	
Background of Jardine Terrace Apartments.....	32
Specific Location of the Study.....	32
Sample Selection and characteristics.....	33
Research Tools.....	35
Data Collection Procedures.....	37
5. ANALYSES.....	38
Descriptive Analyses of Personal and Social	
Homogeneity and Time factor.....	41
Descriptive Analyses of Social Interaction	
and Support.....	45
Analyses of the Seven Key Issues.....	52
6. CONCLUSIONS.....	115
Significance of the completed Research.....	115
Summary of the Findings.....	116
Fit with Previous Research findings.....	117
Recommendations.....	120
 BIBLIOGRAPHY.....	 124
APPENDIX.....	129
Survey Questionnaire	

LIST OF FIGURES

Figure	Page
1. Site Plan of Jardine Terrace.....	21
2. Apartment Location and Number Schedule.....	34
3. Site Plan of Jardine Terrace showing Frequency of Social Interaction.....	53
4. Site Plan of Jardine Terrace showing Frequency of Social Support.....	55
5. Site Plan of Jardine Terrace showing Satisfaction with Social Interaction.....	59
6. Site Plan of Jardine Terrace showing Satisfaction with Social Support.....	61

## LIST OF TABLES

Table	Page
1. Mean Scores and Standard Deviation Scores for Environmental Propinquity Variables.....	39
2. Correlation matrix for Social Desirability Score and measures of Frequency and Satisfaction with Social Interaction and Support.....	40
3. Correlation matrix for Environmental Propinquity Variables.....	57
4. T-tests predicting differences in Frequency of Social Interaction for Student Status.....	64
5. T-tests predicting differences in Frequency and Satisfaction with Social Interaction for Nationality.....	66
6. Multiple Regression Analysis of Social Homogeneity on Satisfaction with Social Interaction.....	67
7. Multiple Regression Analysis predicting Satisfaction with Social Interaction.....	70
8. Multiple Regression Analysis predicting Satisfaction with Social Interaction for Females...	73
9. Multiple Regression Analysis predicting Frequency of Social Support among Females.....	74
10. Multiple Regression Analysis predicting Satisfaction with Emotional help among Females.....	75

Table	Page
11. Multiple Regression Analysis predicting Satisfaction with Tangible help among Females.....	77
12. Multiple Regression Analysis predicting Frequency of Social Interaction for Males.....	79
13. Multiple Regression Analysis predicting Frequency of Social Support for Males.....	80
14. T-tests predicting differences in Frequency and Satisfaction with Social Interaction and Support for weak and good English skills of respondents....	82
15. Multiple Regression Analysis predicting Frequency of Social Interaction.....	85
16. Multiple Regression Analysis predicting Satisfaction with Social Interaction.....	87
17. Multiple Regression Analysis predicting Frequency of Social Support.....	88
18. Multiple Regression Analysis predicting Satisfaction with Emotional help.....	90
19. Correlation matrix for specific aspects of Social Interaction and Support.....	92
20. Multiple Regression Analysis (Invite) .....	93
21. Multiple Regression Analysis (Telephone).....	95
22. Multiple Regression Analysis (Personal Problems).....	96
23. Multiple Regression Analysis (Depressed).....	98
24. Multiple Regression Analysis (Illness).....	100

Table	Page
25. Multiple Regression Analysis (Money).....	101
26. Multiple Regression Analysis (Babysitting).....	103
27. Multiple Regression Analysis (Ride).....	104
28. Variables predicting Social Interaction, Emotional help, and Tangible help.....	106
29. T-tests predicting differences in Frequency and Satisfaction with Social Interaction and Support for Student Status.....	109
30. T-tests predicting differences in Frequency and Satisfaction with Social Interaction and Support for Parenthood.....	111
31. T-tests predicting differences in Frequency and Satisfaction with Social Interaction and Support for Nationality.....	113

## ACKNOWLEDGMENTS

I would like to thank all the members of my committee for their comments, criticisms, and valuable suggestions. I am particularly grateful to Lyn Norris-Baker, my major advisor, for her assistance and enduring patience in the preparation of this thesis.

Finally, I thank my parents for their unending support, encouragement, and understanding throughout this program of study.



## CHAPTER 1

### INTRODUCTION

The design of the apartments at Jardine Terrace family student housing at Kansas State University seems to be based on the assumption that when the affordances for meeting, walking together and using common facilities are part of everyday life, the interaction levels between people will be higher. While this belief may seem to be axiomatic, informal observation as a resident suggests that the best predictors of interaction patterns may be the residents' lifestyle, degree of need for mutual aid, personality, social and cultural variables.

On the basis of this participant observation, the research has studied the roles of propinquity and homogeneity in patterns of social interaction and support among Jardine Terrace residents. The research examined how indicators of propinquity, such as the nearness of the apartments, the common location of the mailboxes, the shared parking lot, common trash disposal area, and also the shared laundry facility, as well as measures of social and cultural homogeneity among residents, contribute to encourage interaction and systems of social support.

Social interaction refers to the socialization patterns and companionship among the residents of this multi-national married students housing. Social support, however, refers to the interpersonal transactions in which problem-focused aid is exchanged.

Previous research indicates that the functional distance between units and the functional centrality of commonly used facilities are major predictors of the interaction patterns of people who inhabit residential areas or who work in business organizations and institutions (Lang, 1987). Functional distance measures distance in a way that reflects the degree of difficulty encountered in moving from one point to another. Paths and corridors that lead straight from one place to another reduce this distance; long distances, major traffic flow across paths, and intervening opportunities for other activities increase the functional distance between two points. Functional centrality refers to the ease of access to common facilities for a group of people, the frequency with which people use them, and the amount of time they spend in them - in effect, the importance of such behavior settings in the lives of the people concerned and the ease of access to them (Lang, 1987).

Some research suggests that social relationships appear to be influenced by these two dimensions of propinquity (Whyte, 1953, 1957; Rosow, 1961). As a result, these relationships are affected by the site plan and the architectural design, which determine how near people will live to each other. In fact, Festinger, Schachter and Back (1950) have suggested that:

The architect who builds a house or designs a site plan, who decides where the roads will and will not go, and who decides which directions the houses will face and how close together they will be, also is, to a large extent, deciding the pattern of social life among the people who will live in those houses (p. 160).

Conversely, other studies of social life have shown that people tend to choose friends on the basis of similarities in backgrounds, such as age and socio-economic level; values such as those with respect to privacy or child rearing; and interests, such as leisure activity preferences (Lazarsfeld and Merton, 1954). These findings influenced and explained by people's homogeneity with respect to a variety of characteristics, although it is not yet known exactly what combinations of characteristics must be shared for different social relationships. This explanation would imply that the designer affects social life not through the site plan but through decisions about lot size or facility standards that help determine, directly or indirectly, whether the population of an area

will be homogeneous or heterogeneous with respect to the characteristics that determine social relationships.

If propinquity is most important in determining friendship formation and neighbor relations, then it would have to be implemented through the site plan. If homogeneity of social characteristics is most important, the designer must decide whether to advocate homogeneous residential areas, if he or she wishes to encourage friendliness and friendship among neighbors; or heterogeneous ones, to encourage more distant neighbor relations and spatially dispersed friendship (Gans, 1961).

Though there has been considerable research done about the roles of propinquity and some types of homogeneity, little research has dealt with the patterns of social interaction or social support among residents of a cross-cultural residential environment.

### **Purpose of the Study**

The ways the built environment can be designed to encourage or, if applied in the reverse, to discourage interactions, may seem axiomatic, but these ways have not always led to

correct predictions about the outcome of building designs. This is because a large number of personality, social, and cultural variables intervene.

The main purpose of this thesis was to study patterns of social interaction and support among residents of Jardine Terrace student family housing apartment complex at Kansas State University, where the residents are of similar age, marital status, and economic level, and for whom relocation has led to major changes in easily accessible networks of friends and family. Moreover, the residents all share a common educational experience and have little time for entertaining. The biggest difference remains that the residents are from varied cultural backgrounds; there are students from almost all over the world - China, Taiwan, Malaysia, Egypt, India, Pakistan, Africa and U.S.A. Since they belong to different ethnic groups, they have different lifestyles, behavior patterns, values and interests.

The study attempted to determine which of the factors or combination of factors - cultural, social, and personal homogeneity and environmental propinquity can best explain the social interaction and support patterns in a housing complex for married university students.

## CHAPTER 2

### REVIEW OF THE LITERATURE

This chapter reviews the research that has already been done concerning social interaction and support and the roles of relevant issues such as propinquity and homogeneity in facilitating social relationships. It also states how earlier studies have been similar or different from the present research that has been undertaken, and thus establishes the need and important contribution that this study makes to the field of environment-behavior research. It begins by stating the basic definitions of some relevant terms as used in this thesis.

#### Definitions

Propinquity: means nearness or closeness. In this context it refers to the physical distance between neighbors and their apartments. It also includes the functional centrality of shared facilities like trash disposal area, parking lot, common mail box location and shared laundry.

Homogeneity: refers to the similarity of social and personal characteristics. In social characteristics, this

study includes peoples' cultural background, student status and presence or absence of children in the family. Personal characteristics include the gender of the person, skill in speaking English and the manifest need for social affiliation and nurturance.

Social Interaction: refers to the frequency of socialization. This term includes not just social contact, but the level of companionship and neighborly relations among the residents. It also measures the satisfaction level with the existing pattern and quality of social interaction among residents.

Social Support: refers to the interpersonal assistance that is exchanged among the residents of the apartment complex in time of need. This support can be emotional, informational, or tangible, and can be directed from one person to another or exchanged mutually.

### **Significance of Social Interaction**

Several reasons have been suggested to explain why interaction is a desirable end. The most basic reason is that interactions are necessary for sustaining the human

relationships that are the bases for meeting human needs for affiliation and belonging. Any opportunity for achieving this end is perceived to be good. Another reason is that these activities - interacting with others and seeing them come and go - promote individual growth because they suggest new possibilities for behavior - they serve a socializing purpose. Christopher Alexander (1972, 1977) argues that people must see each other very often under informal conditions in order for intimate, primary relationships to develop. It is suggested also that interactions between people of diverse backgrounds and natures lead to positive changes in the attitudes the groups have toward each other, whether these are attitudes of employees towards management or of one ethnic group toward another. There is some supportive evidence for this belief (Festinger and Kelley, 1951), but one study of an economically integrated housing scheme in Boston showed that over time the populations, the facilities available and their patronage, and even circulation patterns became increasingly segregated as the environment became adapted to the lifestyles of the population. Where different lifestyles are involved, propinquity leads to coolness between neighbors at best, hostility at the worst (Darke and Darke, 1974).



It has also been suggested that residential areas where there is much neighborly interaction are well liked by their inhabitants. When people are displaced from such environments, the displacement is accompanied by much grief (Fried, 1963). At the same time, some people seek to be displaced because they aspire to other lifestyles and lower-density suburban environments (Gans, 1967).

#### **Factors Influencing Social Interaction**

At least four factors seem to influence the frequency and level of satisfaction of social interaction - propinquity, homogeneity, privacy and territoriality afforded by the environment, and the personality of the individuals.

The existing studies suggest that the two explanations about social relationships mentioned earlier are related, but that homogeneity of social characteristics is more important than propinquity. Although propinquity initiates many social relationships and maintains less intensive ones, such as "being neighborly", it is not sufficient by itself to create more intimate relationships. Friendship requires homogeneity.

## The Role of Propinquity

Propinquity leads to visual contact between neighbors and is likely to produce face-to-face social contact. This is true only if the distance between neighbors is small enough to encourage one or the other to transform the visual contact into a social one. Thus physical distance between neighbors is important. So is the relationship of the dwellings - especially their front and rear doors - and the circulation system. For example, if doors of adjacent houses face each other or if residents share driveways, visual contact is inevitable (Gans, 1961).

The opportunity for visual and social contact is greater at high densities than at low ones, but only if neighbors are adjacent horizontally. In apartment buildings, residents who share a common hallway will meet, but those who live on different floors are less likely to do so, because there is little occasion for visual contact (Festinger, Schachter and Back 1950; Wallace, 1952). Meeting also can be dependent on the vertical circulation pattern.

Consequently, propinquity operates most effectively in single-family and row-house areas, especially if these are organized as courts, narrow loops, or cul-de-sacs.

Initial social contacts can develop into relationships of varying intensity, from polite chats about weather to close friendship. Negative relationships, varying from avoidance to open enmity are also possible. Propinquity not only initiates relationships, but it also plays an important role in maintaining the less intensive ones, for the mere fact of living together encourages neighbors to make sure that the relationship between them remains positive. Propinquity does not appear to play a role, however, in the intensity of the relationship.

Given the importance of homogeneity in social relationships, what role remains for propinquity? Since propinquity results in visual contact, whether voluntary or involuntary, it produces social contact among neighbors. Propinquity also supports relationships based on homogeneity by making frequent contact convenient. Finally, among people who are comparatively homogeneous and move into an area as strangers, propinquity may determine friendship formation among neighbors.

The study by Leon Festinger and his colleagues of the Westgate housing of the Massachusetts Institute of Technology shortly after the end of World War II clearly showed the influence of the layout of the environment on

contacts between people (Festinger, Schacter, and Back 1950; Michelson 1976). In the Westgate study the functional distance between housing units was short. Doors of units were close to each other so casual encounters were almost inevitable. In the two-story buildings the residents on the upper floor had their mailboxes located at one place on the lower floor and had common entrances to the floor. They interacted more than the residents of the lower floor, each of whose rooms had its own entrance from the outside and its own mailbox. The population was, however, highly homogeneous on a number of dimensions: being students (or students' spouses), being veterans, and having similar financial status. They also had a need for mutual support.

The population studied for this research project is more heterogeneous on a number of dimensions: diverse cultural backgrounds, values, and behavior patterns. Like the Westgate study, however, propinquity of apartments and sharing of common facilities, such as laundry, mail box location and trash disposal exists. We should now know from the research findings which of the factors is more important in dictating the patterns of social interaction and support among the residents of Jardine Terrace.

## Relative Importance of Homogeneity versus Propinquity

If neighbors are homogeneous, economically, socially, and culturally, and feel themselves to be compatible, there is some likelihood that the relationship will be more intensive than an exchange of greetings. If neighbors are heterogeneous, the relationships may not be as close regardless of the degree of propinquity. Propinquity may thus be the initial cause of an intensive positive relationship, but it cannot be the final or sufficient cause (Gans, 1961).

This is best illustrated in a newly settled subdivision. When people first move in, they will begin to make social contacts based purely on propinquity. As these social contacts continue, participants begin to discover each other's backgrounds, values, and interests, so that similarities and differences become apparent. Homogeneous neighbors may become friends, where as heterogeneous ones soon reduce the amount of visiting, and eventually limit themselves to being neighborly. An analysis of a residential complex will show that peoples' homogeneity or heterogeneity of culture, socio-economic status, etc., will explain the existence and the absence of social relationships more adequately than will the site plan and

the architectural design. Needless to say that the initial social pattern is not immutable; it is changed by population turnover and by a gradual tendency to find other friends outside the immediate area (Form, 1951). If neighbors are compatible, however, they may not look elsewhere for companionship, so that propinquity - as well as the migration patterns and housing market conditions which bring homogeneous people together - can play an important role as people settle in a new community. When people within a residential area share many homogeneous characteristics, the role of propinquity may be more apparent.

When populations are not homogeneous in character, propinquity can lead to negative contacts between people, especially if they do not have enough privacy (Kuper, 1953). For example, when a working-class family locates in a middle-class area it can find itself socially isolated rather than integrated (Michelson, 1976).

Much residential-area design, as well as some apartment-building and even office-building design, is based on the assumption that when the affordances for meeting, walking together, and using common facilities are part of everyday life the interaction levels between people will be higher.

While this belief may seem to be axiomatic, it should be treated with caution because it can lead to a number of erroneous conclusions about the design and location of specific facilities (Lang, 1987).

At the building level - such as apartment buildings, institutions, vacation resorts - communal lounges afford opportunities for people to meet but for this to occur there needs to be some catalyst. The catalyst may be an individual who brings people together (Flaschbart, 1969) or a common activity or topic of discussion. Public plazas attract people if there are activities and people to watch and even more so if there is food available and a safe and pleasant atmosphere (Jacobs, 1961; Whyte, 1980). Parents may strike up conversations while watching their children at a playground; people working on cars in the common parking lot of an apartment house or in the street in front of their homes may discuss their problems, or people doing laundry may start a conversation while waiting for their wash to be done.

The impact of functional propinquity on interaction patterns seems to be strongest for children and tightly-knit ethnic communities (Hester, 1975; Michelson, 1976). Even though the adults in a residential area may not know

each other, the children may. They play on sidewalks and in the streets where they are part of the social life of a neighborhood (Jacobs, 1961; Hester, 1975).

### Homogeneity

It is not known precisely which background characteristics, behavior patterns, and interests are more and less important in forming friendships, or about what issues values must be shared. Also we do not know what similarities are needed for relationships or different intensities or, for any given characteristics, how large a difference can exist before incompatibility sets in. For example, it is known that income differences can create incompatibility between neighbors, but it is not known how large these differences must become before incompatibility is felt (Gans, 1961). For couples, homogeneity is a more urgent requirement than propinquity, since the two people in a couple must accept both members of all other couples.

Sociologists generally agree that behavior patterns, values, and interests - what people think and do - are more important criteria for homogeneity than background factors (Lazarsfeld and Merton, 1954). However Gans suggests that



in the new suburbs, values with respect to child rearing, leisure-time interests, taste level, general cultural preferences, and temperament seem to be most important in judging compatibility and incompatibility. In the case of multi-national student housing such as Jardine Terrace, homogeneity of culture, ethnic background, student status, and children, rather than propinquity, may dictate patterns of social interaction and support.

It is intuitively appealing to believe that a greater amount of social interaction takes place between people who live in settings that are homogeneous in terms of size, style and value of housing units. The evidence for this is indirect. The assumption is that people who choose to live in such areas perceive themselves to be homogeneous in values and thus will interact more. Terrence Lee's research (1970) in Britain supports the self-perception aspect of this observation but provides no evidence for the increase in interaction between people. People who live in an architecturally homogeneous area - a "district" in Lynch's terms - are likely to have a clear image of it (Lynch, 1960), but the secondary benefits of this are not clear.

## Privacy and Territoriality

Social interactions occur more easily when people's social needs are balanced by the sense of individual autonomy that comes with privacy (Lang, 1987). Ambiguous spaces, those that are neither public nor private, tend to mitigate against interactions, since the individual is less able to control the interaction on his or her own terms. Physical privacy is a pre-requisite of much socially interactive behavior because it provides a setting that allows a wider range of personal choices.

"Private open space promotes neighboring, and neighborhood interaction provides a suitable situation for children" (Porteous, 1977; p. 249). Anthony F.C. Wallace (1952), an anthropologist, hypothesized that the lack of privately controlled yards in housing areas tends to inhibit both family territorial control and community formation. He took this a step farther by suggesting that this is one reason for the greater degree of interaction between neighbors in areas of single-family housing than in apartment buildings. Single-family homes have clear territorial hierarchies and afford casual surveillance opportunities, provided the houses are not too far apart, in which case functional propinquity is lost.

Lang indicates that Oscar Newman and designers such as Rijk Rietveld have shown that apartment buildings can be designed to afford these opportunities, so the important variable does not appear to be that of apartment-living versus single-family homes (Lang, 1987). Rather, the best predictors of interaction patterns appear to be the details of design and above all the residents' lifestyles, degree of affluence, and degree of need for mutual support. This was borne out in a study of Marina Towers in Chicago (Newman, 1972). Certainly, Newman (1972) has shown that when territorial boundaries are clear people exert control over what goes on within them and are watchful against intrusions.

The Westgate study (Festinger, 1950) suggested that functional propinquity was linked to interaction patterns between residents through mechanisms such as territoriality. This was shown also by the work of Leo Kuper (1953) in Britain. In face-block neighborhoods - where the houses face each other across streets with their front doors lining the sides of the streets - there tends to be considerable interaction (Kuper, 1953; Keller, 1968). The road is a seam and becomes a semipublic space. Although everybody has the right of admission to it, it is controlled by the residents. When accompanied by natural

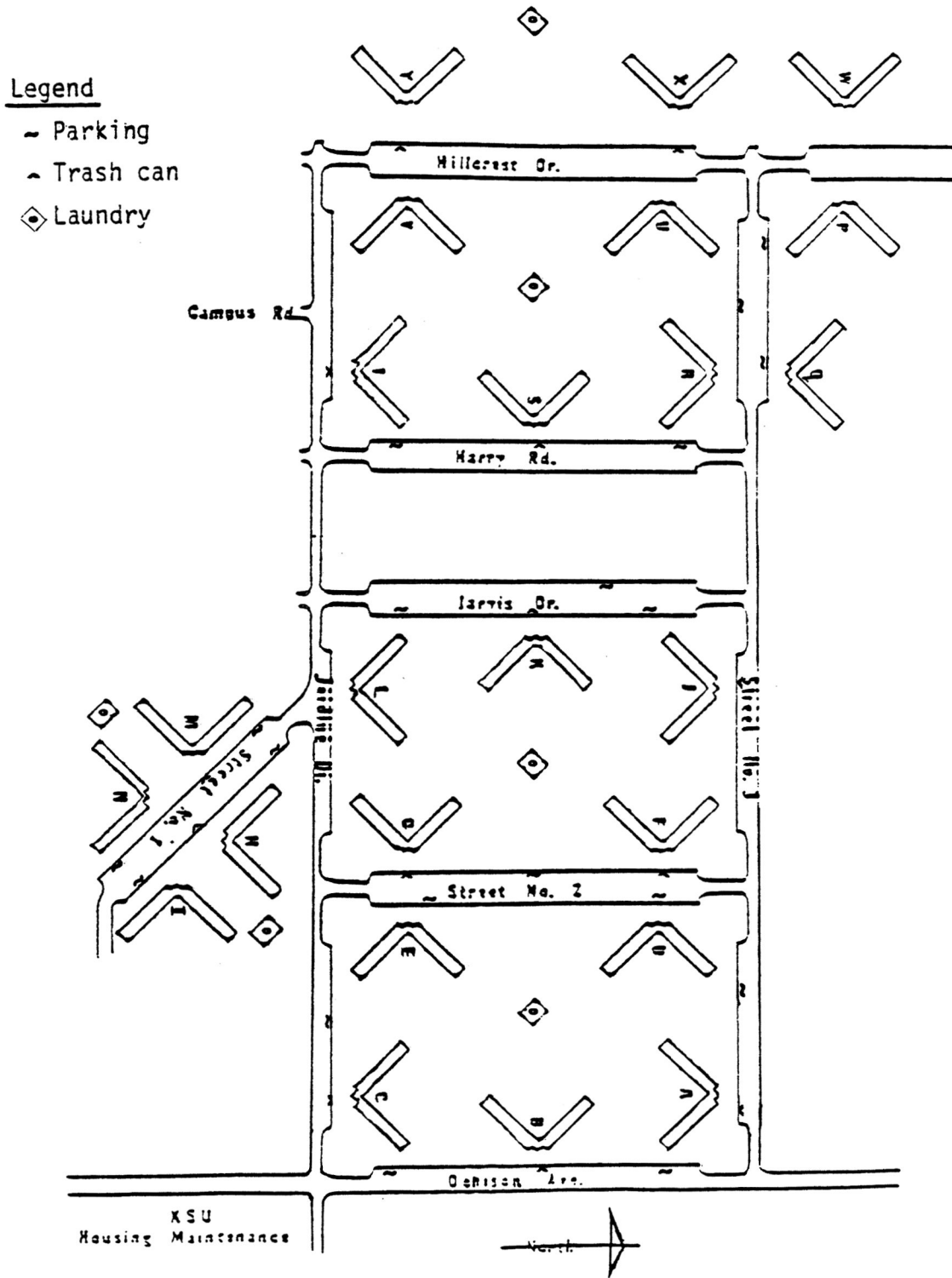
surveillance opportunities (windows overlooking the street) and affordances for activities (parking opportunities on the street in front of the houses, short blocks where pedestrians circulate more readily and meet at corners, and when there is a predisposition for interaction among the residents on the block, a lively living environment may ensue (Jacobs, 1961). There is also supporting evidence that people who live on a cul-de-sac interact more and know each other better than people who live on through streets, but this is not necessarily something that the residents seek (Kuper, 1953; Michelson, 1976).

Jardine Terrace apartments, however, do not have face to face blocks, as shown in Figure 1. Further, the housing management prohibits the use of props, personalization, etc., which might establish a sense of territoriality outside the apartments. The residents by and large abide by these rules and only occasionally one finds some furniture or toys left outside. Therefore, the issue of territorial behavior has not been examined in this study.

### **The Role of Personality**

It is also clear that individual differences in personality

Figure 1: SITE PLAN OF JARDINE TERRACE



and cultural backgrounds and expectations are correlated with preferences for different levels of interaction with others. It is clear that different people seek different levels of interaction. The definition of a good level can be ascertained subjectively in terms of what people themselves specify, or objectively in terms of some normative position on what a good life is. Both definitions are highly value-laden, and in that sense they are social and political in character. This study assessed subjective levels of interaction by obtaining respondents' self-reports of their frequency of and satisfaction with social interaction.

Personality also may play a role in the levels of social interaction and support that are sought. On one dimension of measurement, extroverts are people who are outgoing and like to socialize with others while introverts do not, although they may wish to see what is going on from areas where interactions are not demanded of them (Cooper, 1974). Personality differences may explain why some people seek interactions and others do not, and why people who do not need to be in control interact more than those who do (Lofland, 1973).

Thus, it can be seen that though some studies concerning

the role of propinquity and homogeneity have been done in residential environments, none of them took into account the personality variable of an individual, which may to a certain extent dictate an individuals frequency of and satisfaction with the pattern of social interaction. No study apparently has been conducted in a cross-cultural student housing complex, such as Jardine Terrace. Here the students and student spouses are multi-national, having diverse behavioral patterns, values, and ethnic backgrounds. Though they all live in a homogeneous setting in terms of design, size and value of housing units the impact of functional propinquity on interaction patterns (based on participant observation) does not seem to be very strong.

### Significance of Social Support

The term social support refers not to the general feeling of being adequately supported or cared for by others, but rather to interpersonal transactions in which problem-focused aid is exchanged. Thus, social support is conceptualized on a commensurate level as referring to specific behavioral exchanges or interaction processes.

House (1944) distinguished four basic types of support: emotional support (actions that convey esteem), appraisal support (feedback about one's views or behavior), informational support (advice or information that facilitates problem solving), and instrumental support (tangible assistance).

The primary focus of previous work has been on the various types of help provided through social relationships. Social interaction is important because it serves as a means to a specific end - more effective adaptation to life stress. Although social relationships are often desired for the aid and security they afford (Bowlby, 1977), they are also sought in and of themselves because they provide opportunities for pleasurable companionship and intimacy. From this perspective, social interaction does not serve an extrinsic purpose but instead affords many intrinsic satisfactions, such as shared leisure and recreation or discussion of common interests. Highly personal exchanges with others are often sought for their own sake. For example, self-disclosure, a form of emotional support, occurs not only out of a need to seek help for personal problems but also out of a simple desire to be known or understood (Fromm-Reichmann, 1959). Discussion of personal aspirations and fantasies, expressions of affection, and



private jokes or rituals are further examples of intimate interaction that may be initiated for purely intrinsic reasons.

According to Rowles (1978), sociability and helpfulness of neighbors can become particularly important because of constraints on mobility. Greater reliance on neighbors as friends is possible among residents of the Jardine Terrace apartment complex because some may experience some limitations in the availability of auto transportation.

Herbert Gans (1967), in a study of Levittown, found that after interaction patterns were established, those based on propinquity seemed to occur only when there was a need for mutual aid, like needing a ride or borrowing money in case of an emergency, or a homogeneity in attitudes toward such things as child rearing (Keller, 1968). Taken in conjunction, these factors explain why Lawton found propinquity such a good predictor of friendship-formation in the subject of the elderly population he studied and why Seymour Bellin and Louis Kreisberg (1965) found that husbandless mothers in a public housing project in Syracuse, New York had three or four times as many friends inside the project than outside it (Michelson, 1976).

Personality variables like the need for affiliation and nurturance may affect an individuals frequency of social interaction and support. Affiliation refers to things like: being loyal to friends, to participate in friendly groups, to share things with friends, to do things with friends rather than alone, etc. Nurturance implies the following: to help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, etc. (Edwards, 1959).

#### **Significance of the Proposed Research**

Based on the review of the literature, no significant research concerning social support, and little concerning social interaction in a cross-cultural residential environment appears to exist. The uniqueness of this thesis research project lies in having studied the roles of social homogeneity, personal homogeneity, length of residence, and propinquity in determining the frequency of and satisfaction with the patterns of social interaction as well as social support in a cross-cultural married students housing complex. Dimensions of social homogeneity included in the study were cultural backgrounds, student status, and presence or absence of children. Personal homogeneity

included the need for social affiliation and nurturance, skill in speaking English, and gender. A time factor included the time spent in the apartment complex each day and also the length of residence at Jardine Terrace and in Manhattan. Environmental propinquity refers to the functional distance to other apartments and functional centrality, and in this study included factors of nearness of apartments, floor location, proximity to stairs, and nearness to shared facilities such as laundry, parking lot, mailboxes and trash disposal area.

## CHAPTER 3

### THE RESEARCH PROBLEM

#### Research Objectives

This thesis had the following broad objectives: (1) to understand better the patterns of social interaction and support of residents in multi-national married student housing; (2) to identify the effects of personal, social, cultural and environmental factors related to propinquity and homogeneity on social interaction and support in such housing; and (3) to draw implications and develop criteria for further research and design of similar housing environments.

#### Dependent Variables

Two categories of dependent variables were investigated in this research: (1) the frequency of and satisfaction with social interaction and companionship; (2) the frequency of and satisfaction with social support, including tangible, and emotional support.

## Independent Variables

Four categories of independent variables were assessed in this study.

SOCIAL HOMOGENEITY included:

- cultural background (i.e. country of origin clustered within similar ethnic groups-Asia, Latin America, Europe, etc.)
- student vs non student status
- children vs no children

PERSONAL HOMOGENEITY included:

- need for social affiliation and nurturance
- ease in speaking English
- gender

TIME FACTORS included:

- time spent in the apartment complex each day
- length of residence at Jardine Terrace/in Manhattan

PROPINQUITY (in terms of functional distance to other apartments and functional centrality) included:

- nearness of apartments
- floor location
- proximity to stairs
- nearness to shared facilities such as, laundry, parking lot, mailboxes, and trash disposal.

## Key Issues

The following key issues were investigated:

(1) To describe any environmental patterns in the frequency of social interaction and support among the respondents.

(2) To describe any environmental patterns in the level of satisfaction with the existing pattern of interaction and support.

(3) To explore the role of social homogeneity as a significant predictor of social interaction among residents in a multi-national residential environment.

(4) To explore whether, when variations in interaction attributable to social homogeneity have been considered, propinquity is also a significant predictor of interaction patterns.

(5) To explore whether personal, and social homogeneity and propinquity influence frequency of socialization and levels of satisfaction differently for males and females.

(6) To explore the role of personal characteristics such as gender, need for affiliation and nurturance and ease in speaking English, as mediators of the influence of social homogeneity and propinquity on frequency and satisfaction of social interaction and support.

(7) To contrast between socially heterogeneous groups - residents with different student status (student versus

non student), the presence or absence of children, and different cultural backgrounds, in terms of levels of satisfaction regarding social interaction and support.

CHAPTER 4  
RESEARCH METHODOLOGY

**Background of Jardine Terrace Apartments**

This apartment complex was built between the years 1957 - 1963, especially for the married student population of the University. The architect was Vincent Cool, who was the University architect at that time. Mr. Cool reported that the large amount of green area left around the blocks was intended to reduce crowding and perhaps allow for future development. The construction of this project was made possible by the loans from the Federal Housing Administration. No special design guidelines were set up for the project, but similar housing at Michigan State University was studied as a prototype and those plans were modified to develop the plans for Jardine Terrace. As a part of the thesis research, relevant studies done in the past concerning the Jardine Terrace apartment complex also were reviewed.

**Specific Location of the Study**

Jardine Terrace apartments of Kansas State University is the university apartment complex housing for married

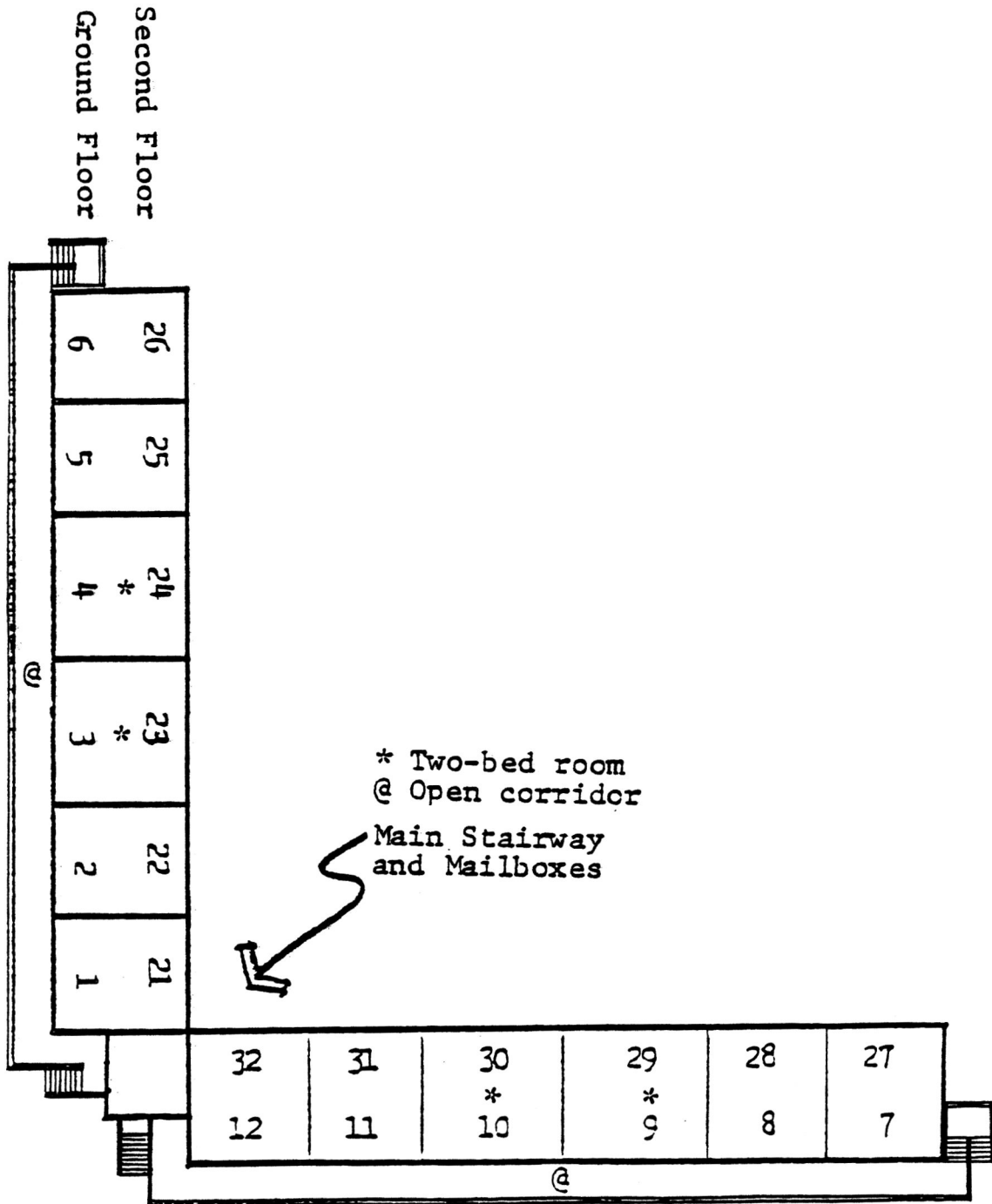


students (see Figure 1). There are twenty-four double-story buildings. Grass areas surround the buildings, and parking lots are adjacent to the roads which are located close to the buildings. Each building has two wings, and every wing has twelve units, including four units of two bedroom apartments in the center of the wings and eight units of one bedroom apartments at the sides. The stairs are located on either side of each wing and a long corridor is in front of each unit (see Figure 2). Generally, five blocks share a centrally located laundry. The L-block of the complex is assigned completely to a child care co-operative. This does not serve as a place where Jardine mothers interact while coming to leave or collect their children because the facility is too expensive for most of the residents to afford.

### Sample Selection and Characteristics

Random sampling without replacement was used to select a total of 100 subjects among the Jardine Terrace residents. However, the proportion of males and females was kept the same as existing in the population. A couple (husband and wife) in every apartment was regarded as two different respondents because their social interaction patterns could

Figure 2: APARTMENT LOCATION AND NUMBER SCHEDULE



vary depending on whether each was a student, the time spent in the apartment, social support desired, personal characteristics, etc.

The interview documented the following characteristics about the sampled population. Each respondent's manifest need for social affiliation and nurturance, cultural background, number of children, student or non student status, length of residence, time spent in the apartment each day, availability of a car, and frequency and satisfaction with social interaction and support were measured.

### Research Tools

Data to explore the key issues stated earlier were obtained using a structured interview. Questions adapted from the "Edwards Personal Preference Schedule" (Edwards, 1959) were used to document the manifest need for social affiliation and nurturance for each respondent. The reliability and validity of this inventory has been tested and various studies have been done comparing ratings and scores on the variables of the Edwards Personal Preference Schedule to other scales, such as the Taylor Manifest Anxiety Scale and

the Guilford-Martin Personnel Inventory (Edwards, 1959). Correlations with other personnel inventory scales have also been established, which further establishes its validity. The adapted measure yields a numerical score of the manifest need for social affiliation, and one for nurturance. Counts of frequency were obtained for the frequency of social interaction and support. A seven point Likert scale was used to measure the level of satisfaction with the existing pattern of social interaction and social support.

The "Social Support Questionnaire" (Sarason, 1983) and Rook's interview questions (Rook, 1987) assessing social relationships and support were modified to develop a portion of the structured interview for this research. The questions employed in these two measures have been used to document social companionship and support for many types of persons, including college students. The instruments are short, simple to understand, and the two measures have been cross-validated (Rook, 1987). A re-test of a 10% sub-sample of the respondents (after three weeks) was completed to confirm the reliability of the modified questionnaire used in this thesis. The re-test yielded almost perfect correlations for the responses to each of the five dependent variables in the study (frequency of social

interaction = 0.91, satisfaction with social support = 0.96, frequency of social support = 0.92, satisfaction with emotional help = 0.97, and satisfaction with tangible help = 1.0). A check for socially desirable responses was made by adding a set of questions from Crowne and Marlowe's social desirability study in evaluative dependence (Crowne and Marlowe, 1964). The data regarding social desirability is presented as part of the findings in the next chapter.

### Data Collection Procedures

A personal letter explaining the project was mailed out to each of the potential respondents identified by the sampling procedure. This was followed by a telephone call or visit to obtain the respondent's consent to be interviewed and to set up an appropriate time for the interview session. Each interview lasted approximately 20 to 30 minutes. Two other graduate students were trained in order to be able to complete the data collection process in approximately one month.

## CHAPTER 5

### ANALYSES

For the 100 randomly selected respondents, a 76% response rate was obtained. Half the respondents were living in the first level apartments and half on the second level. Occupants from all apartment blocks were included, except B-block which was under renovation at the time of data collection. Of the people interviewed, 42% were males and 58% females; 47% were U.S. citizens and 53% were non-U.S. citizens; 47% had children and 53% did not; 76% were students and 24% were non-students. All of the non-students were female. The mean and standard deviation of selected environmental propinquity variables are listed in Table 1. The social desirability score of the respondents ranged from a maximum score of 9 to a minimum of 0, while the mean response score was 6. The correlations between the social desirability score and the measures of frequency and satisfaction with social interaction and support shown in Table 2 indicate non-significant relationships between a tendency to respond in a social desirable manner and the measures of interest in the study. Table 2 also displays the interrelationships among the frequency and satisfaction with social interaction and support. The strongest

Table 1: Mean and Standard Deviation Scores for  
Environmental Propinquity Variables

Variables	Mean	Std. Dev.	Minimum	Maximum
1. Apt. level	-	-	1	2
2. No. of apts. from main stairway	3.0	2.0	1	6
3. Dist. from mailboxes	49.3'	26.4'	15'	90'
4. Dist. from parking	68.9'	31.4'	30'	135'
5. Dist. from laundry	174.5'	84.2'	30'	390'
6. Dist. from trash can	70.1'	31.6'	30'	135'

Table 2: Correlation Matrix for Social Desirability Score and Measures of Frequency and Satisfaction with Social Interaction and Support

Freq of S.Int	Freq of S.Supp	Satis with S.Int	Satis with Em.help	Satis with T.help	
0.06	0.08	0.03	0.13	-0.07	S.Desirability
	0.61*	0.28*	0.32*	0.41*	Freq of S.Int
		0.44*	0.49*	0.30*	Freq of S.Supp
			0.58*	0.37*	Satis w/S.Int
				0.24*	Satis w/Em.help

\*  $p \leq 0.05$

Note: Freq = frequency; Satis = satisfaction; S.Int = social interaction; S.Supp = social support; Em.help = emotional help; T.help = tangible help; S.Desirability = social desirability



relationship was between frequency of social interaction and frequency of social support, followed by satisfaction with social interaction and satisfaction with emotional help and, then followed by the relationship of both of these variables to the frequency of social support. This seems to be so because, the more frequently a resident socializes, the more friendly relationships are likely to develop, which in turn will result in more support being available at times of need. This availability of support may ultimately also increase one's satisfaction level with the social interaction pattern that exists.

## **Descriptive Analyses of Personal and Social Homogeneity and Time Factor**

### **Personal Homogeneity**

Gender: Males comprised 42% of the sample while females comprised 58% of the sample. This suggests that though equal number of males and females were selected for the survey, the refusal rate was higher among men. This may be partly because all the males were students and remained very busy or were just not interested in the survey. Females seemed to be having more time to spare and were co-

operative.

Need for Affiliation and Nurturance: This variable obtained a mean score of 67. The minimum score was 56 while the maximum was 86. The standard deviation was 5, which suggests that there was relatively little variation among the respondents' responses. The respondents seemed to have a high personal need for affiliation and nurturance, which may be attributed to the fact that most of the residents have relocated in this housing from different places in the U.S. or other foreign countries.

Ability to speak English: On the average, the ability to speak English of the respondents was good. The range was from poor, fair, to good and very good. For the sampled population, 68% had good to very good English speaking ability while 32% had poor to fair English skills. It was found that residents with weaker English were mostly non-students. But the population as a whole seemed to have good ability to speak English, which should make interactions in a cross-cultural and multi-lingual population easier, by overcoming the language barrier and unifying all residents through one common language for communication.

## Social Homogeneity

Having Children: Out of the sampled population, 47% of the respondents had children. The maximum number of children was 3 and the mean age of the children was 2 years. This suggests that the population being studied is fairly evenly divided in terms of residents with and without children.

Student Status: The sampled population consisted of 76% students and 24% non-students. The non-students were all females. The majority of the residents were students, and may have had little time to socialise and go out of their way to provide help to people.

Nationality: U.S. citizens comprised 47% of the sample while non-U.S. citizens comprised 53% of the sample. Here again, the population is fairly even in terms of U.S. and non-U.S. citizens. The non-U.S. citizens are the people comprising most of the married international students on campus. Those in the sample came from China, Taiwan, Malaysia, Iran, Pakistan, India, Egypt, Saudi Arabia, Yemen, Nicaragua, Kenya, Sudan, and Korea.

## Time Factor

Time spent in the apartment: On the average, each respondent spent 15 hours a day in the apartment; with the minimum being 8 hours per day and maximum being 24 hours per day. The standard deviation obtained was 3.5 hours per day. This suggests that residents do spend considerable time in their apartments and therefore could interact with one another, if they desired.

Time spent in other's apartment: The respondents spent about 20 minutes per day in a friend's apartment in the Jardine Terrace complex. Some people did not spend any time at all in a friend's apartment, while the maximum was up to 2 hours per day. The standard deviation recorded for this variable was 30 minutes per day. This means that there is a moderate but variable amount of socializing going on a close basis.

Time spent in the Jardine Terrace complex: On the average the respondents spent 40 minutes per day outside in the complex. The maximum time spent was 6 hours and minimum was none at all, while the standard deviation was 50 minutes per day. This time was mostly concentrated on the week-ends doing laundry, disposing of trash, etc., and very little

time was spent interacting with each other in the complex.

Length of stay at Jardine Terrace: The average response for the duration of stay at Jardine Terrace was between 12 and 17 months. The minimum time spent was less than 6 months, and maximum was more than 18 months. Thus, most of the people have had time to develop social relationships within the complex.

Length of stay in Manhattan: The average length of stay in Manhattan was between 12 and 17 months, with the minimum being less than 6 months and maximum being 18 months or more. In other words, probably few people move into Jardine from the local area. Since all residents have relocated, previous research literature suggests that residents will have a higher need and desire for social interaction.

### **Descriptive Analyses of Social Interaction and Support**

At this point, Pearson product moment correlations were computed to examine the inter-correlations among these five dependent variables used in the study - frequency of social interaction, satisfaction with social interaction, frequency of social support, satisfaction with emotional

help, and satisfaction with tangible help. The correlation matrix is displayed in Table 2 and indicates that there is low to moderate correlation among each of the variables. Frequency of social interaction and frequency of social support have the strongest relationship. In other words, the greater the number of friends or interactions one has the more would be the giving and receiving of help. But low correlations between frequency of social interaction and satisfaction with social interaction, emotional help and, tangible help suggest that residents have friendships - but that these are different, somewhat unrelated aspects of friendship, which are represented by the different variables of interaction and support.

### **Social Interaction**

Social interaction was measured by assessing the number of friends with whom people socialized, their best friends in the complex, and their interactions over the telephone.

Friends: It was determined that 81% of the respondents had friends, but 19% did not have any friends in the Jardine Terrace complex, which means they had friends elsewhere - outside the complex. The average number of friends was 2,

with the minimum being none at all, and maximum number of friends being 5. The maximum number was determined by the limits of the survey. On the average, everyone had at least one friend with whom they socialized.

Best Friends in the complex: Out of the sampled population 29% of the respondents claimed to have a best friend in the Jardine Terrace complex, while the remaining 71% did not. This finding suggests that most of the time residents had best friends elsewhere. Among the respondents, 28% claimed to be somebody's best friend in the complex.

Interaction over the Telephone: Of the people interviewed, 43% said they had friends in the Jardine Terrace complex whom they called on the telephone on a regular basis. On the complementary question, 47% said that they had friends who telephoned them regularly. For both cases, the range of the number of friends reported was 0 to 3, with the mean being 0.9, and standard deviation 1.1. Thus, less than half the residents used the telephone as a means of communication or interaction among friends in Jardine Terrace.

Invitations to socialize: Out of the sampled population, 68% reported that they had friends in Jardine Terrace who

usually invited them over. The range for the number of friends who invited them was 0 to 3, with the mean being 1.2, and standard deviation also 1.1. Among these same respondents, 63% reported having been invited in the past three months. The range for the number of people reported was 0 to 2, with the mean being 1.0 and standard deviation 0.8. This suggests that, only a little more than half the population has close friendships among residents, where socialization and support may develop.

### **Social Support**

Social Support was measured by assessing both tangible and emotional support issues. Emotional support assessed help with personal problems and help at times of depression. Tangible support assessed help with lending or borrowing money, help during an illness, help with childcare, and help with transportation.

### **Emotional Support**

Help with Personal Problems: It was determined that 13% of the respondents usually shared their personal problems with



friends in the Jardine Terrace complex; 30% of the respondents sometimes did, and 57% of the respondents hardly ever did. It was found that 55% respondents had friends who shared their personal problems with them. The range of the number of friends reported was 0 to 2, the mean was 0.7, and standard deviation was 0.8, in both cases. Thus, it appears that there is very little sharing of one's personal problems, among friends in the complex; which suggests that the social relationships are not very intimate.

Help when feeling depressed: It was reported that 46% of the respondents had friends within the Jardine complex whom they would turn to for comfort when they felt down or depressed. On the other hand, 50% of the respondents reported they have a friend who would turn to them. For both these instances, the range of the number of friends reported was 0 to 2, with the mean being 0.7, and standard deviation 0.8. This suggests that emotional help is available to less than half the residents, and that the friendships that exist among people there are more casual and less emotionally intense.

Financial help: The interview results indicated that 37% of the respondents had friends in the complex from whom they

could borrow money at the time of need. On the other hand, 43% of the respondents claimed they would lend money to their friends when needed. For both instances, the range of the number of friends reported was 0 to 2, with the mean being 0.6, and standard deviation being 0.8. So there was limited financial help available from friends in Jardine Terrace, which once again suggests that majority of the residents have close friends or family elsewhere on whom they can depend on for financial assistance.

Help when ill: Out of the sampled population, 80% of the people interviewed reported on having friends in Jardine Terrace on whom they could depend to take care of them if they were to become sick. The range of the number of people reported was 0 to 3, the mean was 1.5, and the standard deviation was 1.0. It was determined that 74% of the respondents had friends whom they believed would ask them for help in taking care of them if they fell ill for a few days. The range of the number of friends reported was 0 to 3, with the mean being 1.4, and standard deviation being 1.1. Thus most of the residents have help available when ill.

Help with childcare: It was determined that 47% of the respondents had children. For these respondents, 42% had

someone in the complex whom they could depend on for help regarding babysitting at times of need. The range of the number of friends reported was 0 to 2, the mean was 0.7, and standard deviation was 0.9. Whereas, 71% of the respondents interviewed said that their friends in the complex could count on them for help in babysitting. The range of the number of friends reported was 0 to 3, with the mean being 1.2 friend, and standard deviation 1.1. Thus most of the residents could get help for childcare when needed and tangible support seems to be more easily available than emotional support.

Help with transportation: It was determined that 97% of the respondents owned a car, making access to transportation easy for virtually all respondents. The survey determined that 93% of the respondents could ask a friend for a ride and 92% of the respondents could be asked by someone for giving a ride at times of need. The range of friends reported varied from 0 to 4, with the mean response being 2.1 friend, and the standard deviation 1.2. Thus, help for transportation is most readily available to almost all the residents.

It appears that the population being studied is fairly evenly distributed in terms of U.S. and non-U.S. residents,

residents with and without children, and the number of males and females. Most of the residents are staying in this complex share a primary goal of achieving university education and have all relocated, coming away from close friends and family to a new social environment within the past 18 months.

### **Analyses of the Seven Key Issues**

This section explains the type of analyses used, and reports and discusses the findings, related to the seven key issues stated earlier in the thesis (see pages 30-31).

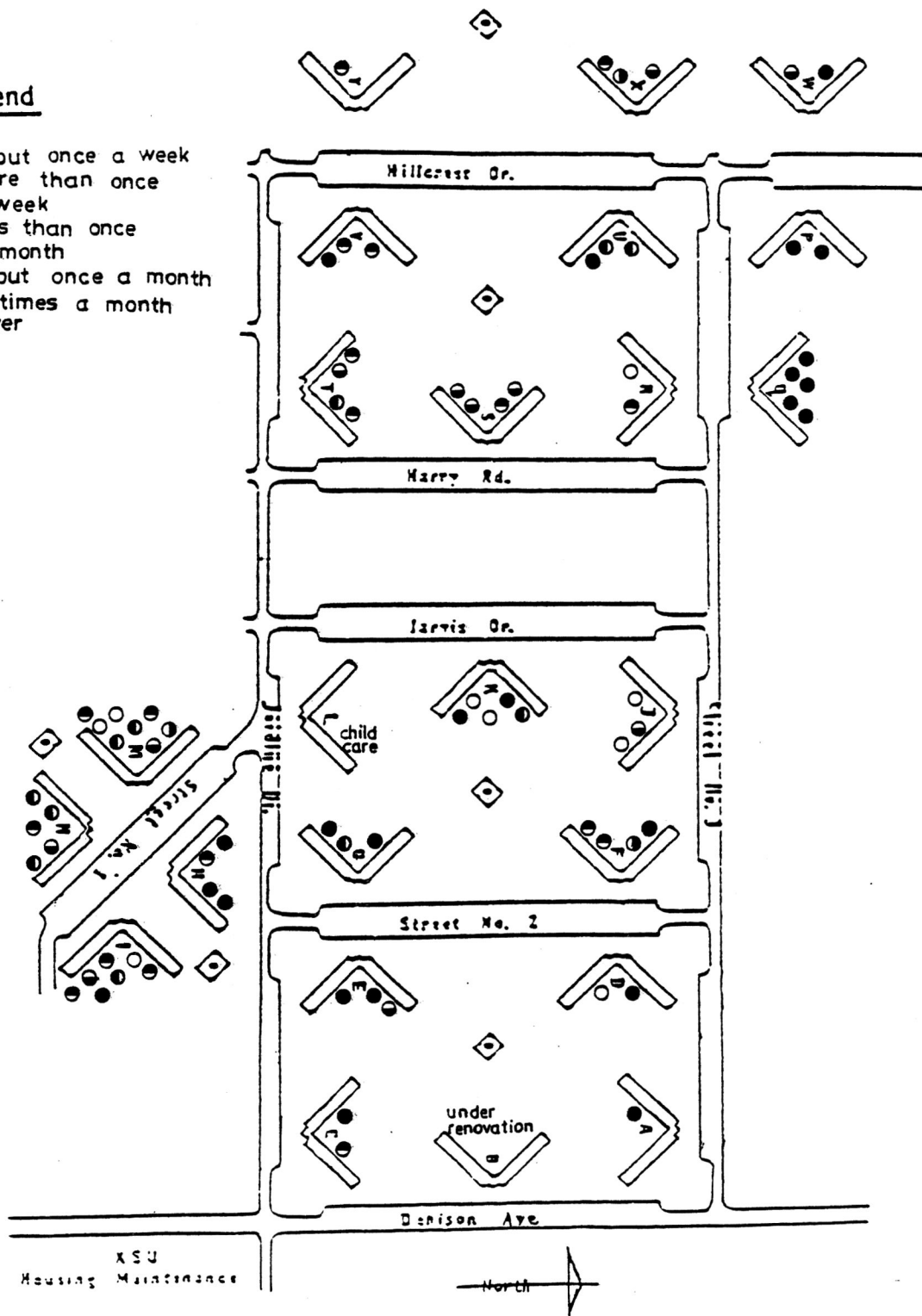
#### **Environmental Patterns in the Frequency of Social Interaction and Support**

To study any siting-related environmental patterns in the frequency of social interaction and support among the respondents, the frequency of social interaction and frequency of social support of the respondents were plotted on site plans of Jardine Terrace. Figure 3 shows the plot for frequency of social interaction. No definite pattern is evident from the plan, suggesting that location of the respondents in the site may have little to do with their

Figure 3: SITE PLAN OF JARDINE TERRACE SHOWING FREQUENCY OF SOCIAL INTERACTION

Legend

- about once a week
- ◐ more than once a week
- ◑ less than once a month
- ◒ about once a month
- ◓ 2-3 times a month
- never



frequency of social interaction. An exceptional case seems to be the respondents of block Q who appear to have a high frequency of social interaction.

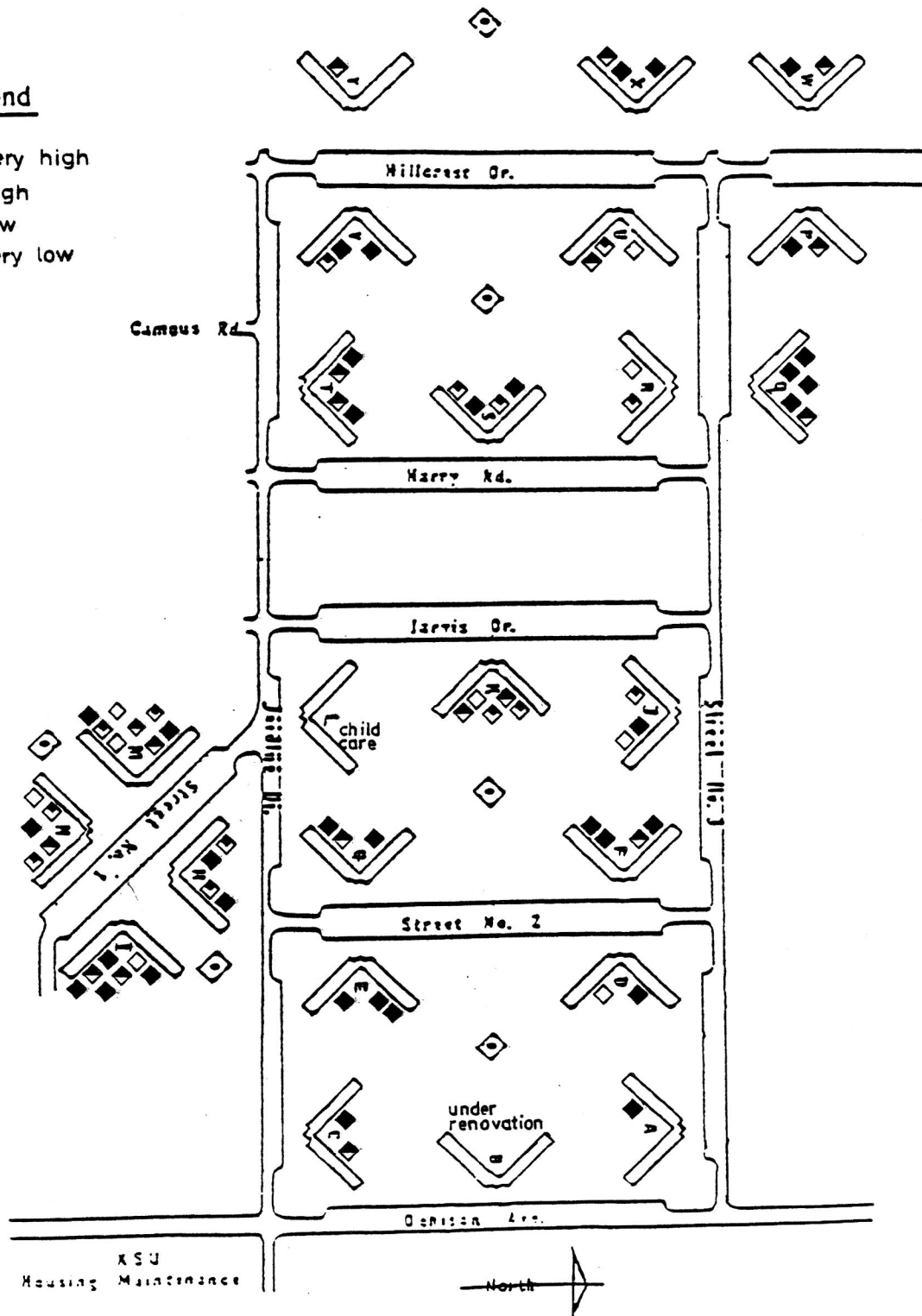
A multiple regression analysis was carried out to further examine the role of environmental patterns, and in particular proximity, to potential places for interaction (stairs, laundry, parking, mailboxes, etc.) in the frequency of social interaction among residents. This regression used a fixed model, requiring all environmental variables to enter as a group. The findings of this analysis ( $R^2 = 0.090$ ,  $\text{Adj } R^2 = 0.011$ ,  $F = 1.141$ ,  $df = 6,69$ ,  $p = 0.348$ ) suggest that nearness to shared facilities like trash disposal, laundry, parking and mailboxes may not have any significance in predicting frequency of social interaction, since the combined environmental propinquity accounted for only 1.1% of the variance.

Figure 4 shows the plot for frequency of social support for the respondents. Again, no definite pattern is evident from the plan, suggesting that location of the respondent in the site as a whole may have little to do with their frequency of social support. A multiple regression analysis was carried out to further examine the role of environmental patterns, and in particular proximity, to the shared

Figure 4: SITE PLAN OF JARDINE TERRACE SHOWING FREQUENCY OF SOCIAL SUPPORT

Legend

- ◆ very high
- ◊ high
- ◇ low
- ◇ very low



facilities like laundry, parking, mailboxes, etc. in the frequency of social support among residents. The findings of this analysis also did not yield any significant results ( $R^2 = 0.100$ ,  $\text{Adj } R^2 = 0.022$ ,  $F = 1.284$ ,  $df = 6,69$ ,  $p = 0.276$ ). Thus patterns of support may not be predicted by environmental propinquity.

These findings do not support the outcomes of earlier research studies, which suggest that when people were new and relocated in a neighborhood there was a higher need for social interaction. In the case of Jardine, although most of the residents have recently relocated into this university housing complex, the fact remains that culturally this is a heterogeneous population - with residents having totally different customs, values, religions, and ethnic backgrounds. Therefore the earlier research findings may not apply to this heterogeneous environment, and perhaps factors other than propinquity dictate frequency of social interaction and support.

Table 3, showing the correlation matrix of the variables used to study environmental propinquity, suggests that there are low to moderate correlations among each of the variables (level of the apartment, distance from parking, distance from mailboxes, distance from laundry, distance



Table 3: Correlation Matrix for Environmental Proximity Variables

Mailboxes	Parking	Laundry	Trash	Address	
1.00*	0.59*	0.01	0.58*	0.02	Stairs
	0.59*	0.01	0.58*	0.02	Mailboxes
		-0.03	0.95*	0.02	Parking
			0.04	0.37*	Laundry
				-0.01	Trash

\*  $p \leq 0.05$

from trash disposal area, and proximity to other apartments in the complex) used in the research. The exceptions are the relationship between parking and the trash disposal area, because it is located within the parking area and stairs and mailboxes because they are at the same location. Moderate correlations are evident between parking with stairs and mailboxes, and trash with stairs and mailboxes because they are quite closely located on the site. But still, there is sufficient variance not shared among the variables to justify including them in the analyses.

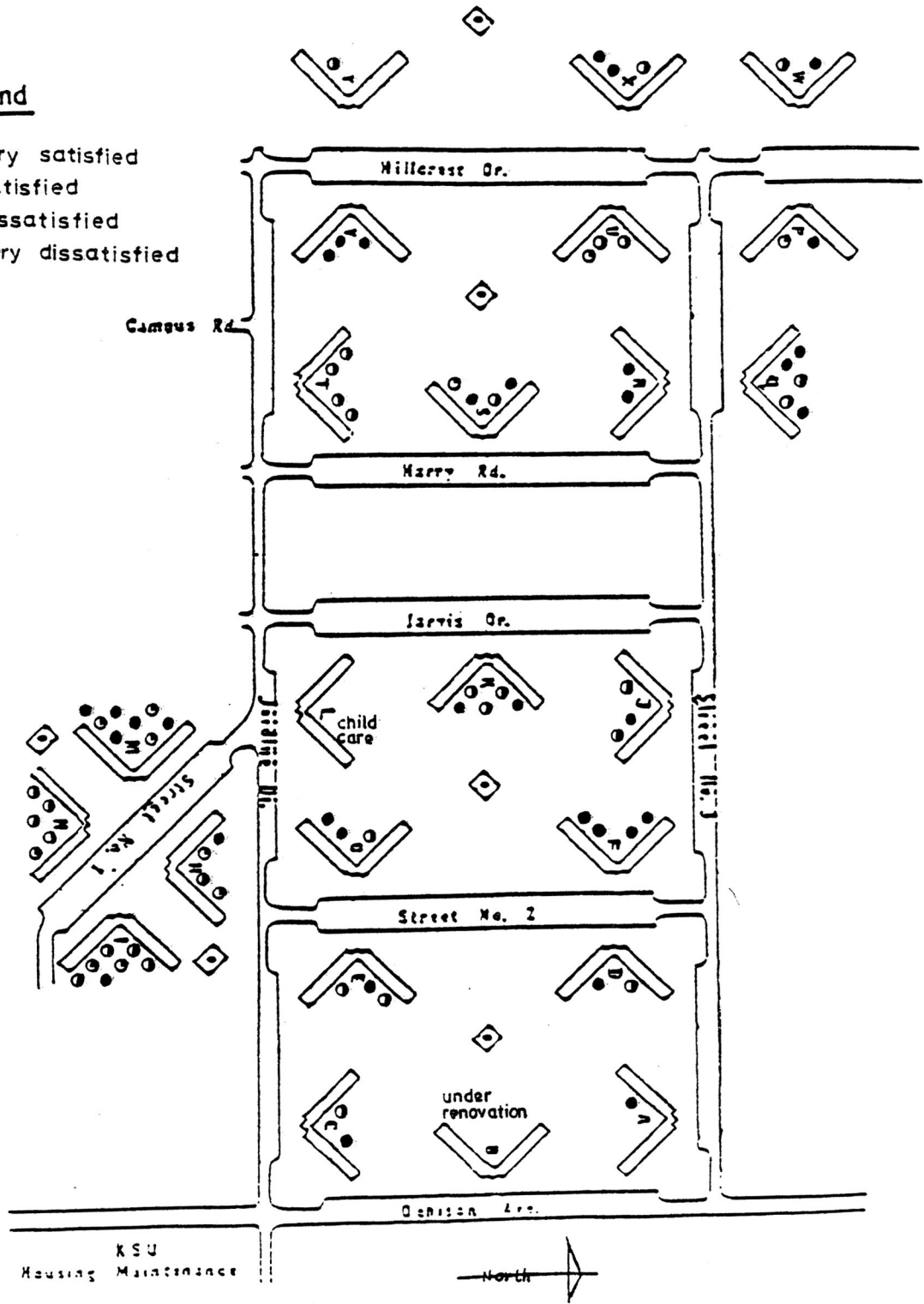
#### **Environmental Patterns in the Satisfaction of Social Interaction and Support**

To study further any siting-related environmental patterns in the satisfaction of social interaction and support among the respondents, the satisfaction with social interaction and social support also were plotted on site plans of Jardine Terrace. Figure 5 shows the plot for satisfaction with social interaction. No definite pattern seems to be emerging. This finding suggests that location of the respondents in the site plays little if any role in determining their level of satisfaction with the existing pattern of social interaction.

Figure 5: SITE PLAN OF JARDINE TERRACE SHOWING SATISFACTION WITH SOCIAL INTERACTION

Legend

- very satisfied
- ◐ satisfied
- ◑ dissatisfied
- very dissatisfied



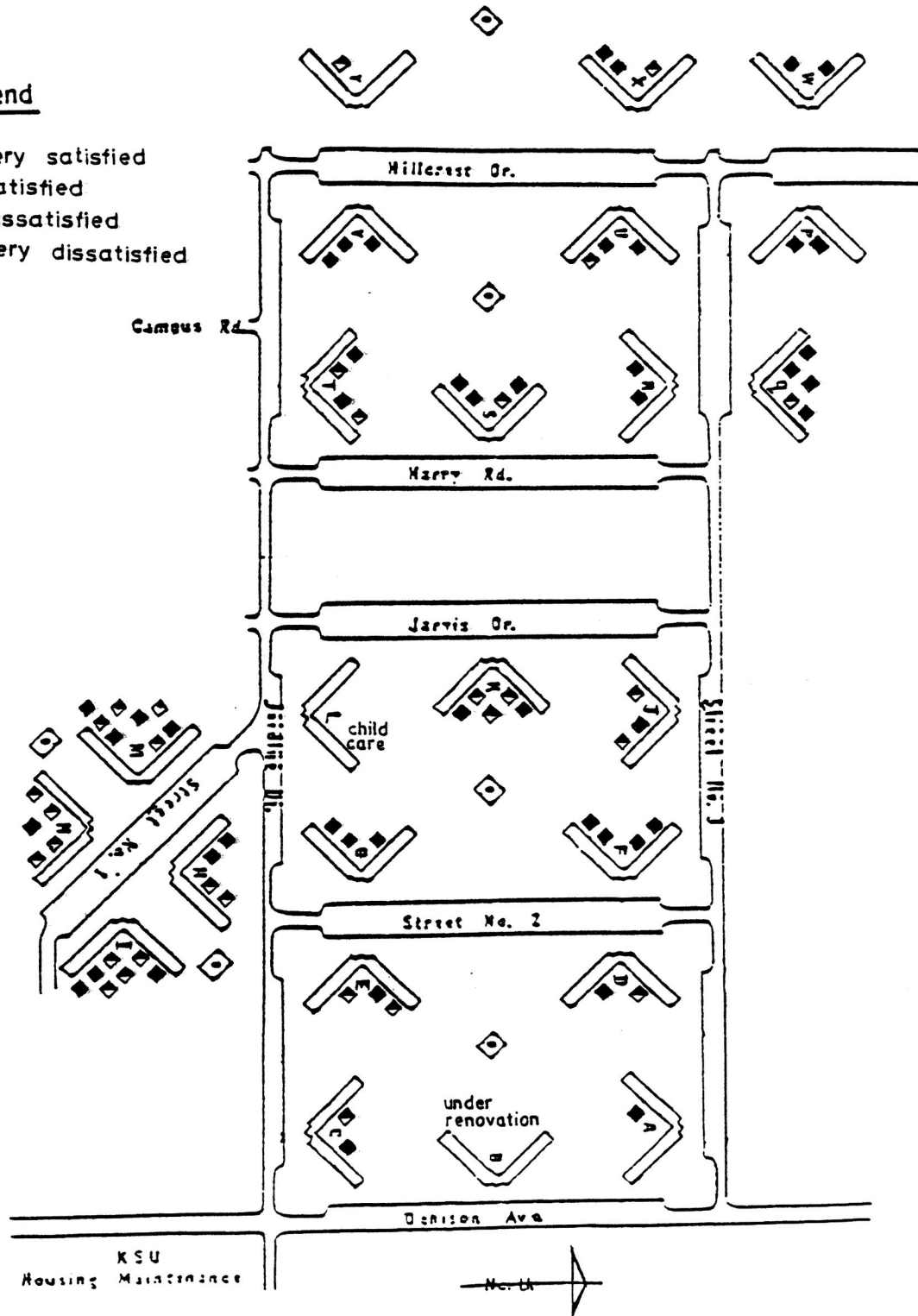
A multiple regression analysis to examine the influences of environmental proximity was carried out using the dependent variable of satisfaction with the existing pattern of social interaction. In this regression analysis, the independent variables, entered as a group, were the environmental propinquity factors: level of the apartment, distance from parking, distance from laundry, distance from mailboxes, distance from trash disposal and proximity to other apartments in the complex. This combination of variables were not significant predictors of respondents satisfaction with existing patterns of social interaction ( $R^2 = 0.80$ ,  $Adj R^2 = 0.00$ ,  $F = 0.996$ ,  $df = 6,69$ ,  $p = 0.435$ ). Thus, these findings suggest that location in the environment, in terms of propinquity to other apartments, and sharing of common facilities like laundry, and parking may not predict residents' satisfaction with social interaction.

Figure 6 shows the plot for satisfaction with the existing pattern of social support. Again no definite pattern is evident from the plan, suggesting that location of the respondents in the site may have little to do with their satisfaction level with the existing pattern of social support among the residents of Jardine Terrace.

Figure 6: SITE PLAN OF JARDINE TERRACE SHOWING SATISFACTION WITH SOCIAL SUPPORT

Legend

- ◆ very satisfied
- ◊ satisfied
- ◇ dissatisfied
- ◇ very dissatisfied



Another multiple regression analysis was carried out to further examine the role of the environmental propinquity variables as predictors of satisfaction with emotional help that the residents receive from friends in the complex. Again, the variables were not significant predictors of the respondents' satisfaction with emotional help ( $R^2 = 0.081$ ,  $\text{Adj } R^2 = 0.001$ ,  $F = 1.009$ ,  $df = 6,69$ ,  $p = 0.426$ ).

A similar multiple regression analysis was carried out to further examine the role of these same variables as predictors of satisfaction with tangible help that is received from friends in the Jardine Terrace complex. As in the previous analyses, the variables were not significant predictors of residents' satisfaction with tangible help ( $R^2 = 0.110$ ,  $\text{Adj } R^2 = 0.032$ ,  $F = 1.414$ ,  $df = 6,69$ ,  $p = 0.222$ ). Thus, the findings from these analyses suggest that environmental propinquity may have little to do with the level of satisfaction with the existing pattern of social support among the residents. In sum, environmental propinquity does not appear to influence frequency and satisfaction with social interaction and support. It should be noted that all the measures of interaction and support have low to moderate correlations among them as shown in Table 2.

## **The Role of Social Homogeneity in Frequency and Satisfaction with Social Interaction**

To explore the role of social homogeneity as a significant predictor of social interaction among residents of this multi-national residential environment, multiple regression analyses and t-tests were used. A multiple regression analysis was conducted by regressing social homogeneity on frequency of social interaction. All the social homogeneity variables, having children, student status, and nationality, were entered as a group. The resulting regression, which predicted only 4.2% of the variance, ( $R^2 = 0.081$ ,  $\text{Adj } R^2 = 0.042$ ,  $F = 2.109$ ,  $df = 3,72$ ,  $p = 0.107$ ) suggested that social homogeneity is not a significant predictor of the frequency of social interaction among residents of Jardine Terrace.

A series of t-tests were performed to further explore the roles of homogeneity in student status, nationality and parenthood in frequency of social interaction. The t-test between student and non-student groups, the results of which are displayed in Table 4, yielded non-significant results ( $p = 0.083$ ,  $t = -1.76$ ) between the two groups regarding their frequency of social interaction. However, there was a trend toward students engaging in less frequent

---

Table 4: T-tests Predicting Differences in Frequency of Social Interaction for Students and Non-Students

---

Variable	Mean for Students	Mean for Non-Students	p	t
Freq of S.Int.	3.4	4.1	0.083	-1.76
Satis. w/S.Int	4.9	5.4	0.200	-1.29

---

df = 74

Note: Freq = frequency; S.Int = social interaction; Satis. = satisfaction;



interactions. Non-students may have a higher frequency of social interaction because they spend more time in their apartments, which gives them more opportunities to interact. The next analysis focused on differences between U.S. citizens and non-U.S. citizens in the frequency of social interaction ( $p = 0.051$ ,  $t = -1.98$ ). The results, displayed in Table 5, were marginally significant and predicted slightly higher frequency of social interaction among non-U.S. citizens, perhaps because of their higher need for adjusting to a foreign environment. The third t-test, conducted between groups with and without children, did not yield any significant results for frequency of social interaction ( $p = 0.372$ ,  $t = 0.900$ ). Therefore, it may be concluded that, out of the social homogeneity variables, only differences in nationality suggest differences in the frequency of social interaction.

Next, a multiple regression analysis examined the role of social homogeneity in predicting satisfaction with social interaction. All the three social homogeneity variables - having children, student status, and nationality were entered as a group into the model. Table 6 shows the results of this analysis, which indicate that social homogeneity is of marginal significance in predicting satisfaction with social interaction ( $F = 2.696$ ,  $df = 3, 72$ ,

---

Table 5: T-tests Predicting Differences in Frequency and Satisfaction with Social Interaction for U.S. Citizens and Non-U.S. Citizens

---

Variable	Mean for U.S. Citizens	Mean for Non-U.S. Citizens	p	t
Freq of S.Int.	3.3	3.9	0.051	-1.98
Satis. w/S.Int	4.7	5.5	0.007	-2.76

---

df = 74

Note: Freq = frequency; S.Int = social interaction; Satis. = satisfaction

---

Table 6: Multiple Regression Analysis of Social Homogeneity on Satisfaction with Social Interaction

---

Variables	Beta
<hr/>	
Social Homogeneity	
Having Children	0.020
Student status	0.086
Nationality	0.289

---

$R^2 = 0.101$        $Adj R^2 = 0.064$   
 $F = 2.696$        $p = 0.052$        $df = 3,72$

p = 0.052). Social homogeneity accounted for only 6.4% of the variance, when adjusted. It was also found that nationality has the maximum Beta value, suggesting that it is the major predictor, among social homogeneity variables, of satisfaction with social interaction.

A series of t-tests also were conducted to further explore the roles of each of the social homogeneity variables in predicting satisfaction with social interaction. A t-test between student and non-student groups did not yield any significant differences in satisfaction with social interaction (p = 0.200, t = -1.29). The t-test in Table 5 shows statistically significant differences between U.S. citizens and non-U.S. citizens for satisfaction with social interaction (p = 0.007, t = -2.76) as well as frequency of social interaction. The t-test conducted among groups with and without children, did not yield any significant differences between the groups regarding their satisfaction with social interaction (p = 0.907, t = 0.12). Thus, it may be concluded, that international students at this housing complex seem to have a higher frequency as well as greater satisfaction with their social interaction.

## **The Role of Propinquity in Predicting Social Interaction After Social Homogeneity has been Considered**

The next set of analyses explored whether, when variations in interaction attributable to social homogeneity had been considered, propinquity was a significant predictor of frequency of social interaction. To investigate this issue, a combined fixed order and forward stepwise regression analysis was used. First, the social homogeneity variables were entered into the regression analysis as a group to account for variance attributable to these factors. Second, the environmental propinquity factors were entered using a forward stepwise procedure. The results of this analysis were not significant ( $R^2 = 0.081$ ,  $\text{Adj } R^2 = 0.042$ ,  $F = 2.109$ ,  $df = 3,72$ ,  $p = 0.107$ ).

A similar combined fixed order and forward stepwise regression analysis was conducted for satisfaction with social interaction. Table 7 displays the results that were obtained ( $F = 2.696$ ,  $df = 3,72$ ,  $p = 0.052$ ) with social homogeneity variables as a group accounting for 6.4% of the adjusted variance, but no dimensions of environmental propinquity entering the regression. This finding suggests that environmental propinquity may have little to do with predicting frequency and satisfaction with social

---

Table 7: Multiple Regression Analysis Predicting  
Satisfaction with Social Interaction

---

Variables	Beta
<hr/>	
Social Homogeneity	
Having Children	0.020
Student status	0.086
Nationality	0.289

---

$R^2 = 0.101$

Adj  $R^2 = 0.064$

$F = 7.578$

$p = 0.0002$

$df = 3,72$

interaction, which seems to be dictated by factors other than propinquity.

### **The Role of Personal, and Social Homogeneity, and Propinquity in Social Interaction for Males and Females**

To explore whether personal, social homogeneity and environmental propinquity influence frequency and satisfaction of social interaction differently for males and females, a series of parallel forward stepwise multiple regression analysis were conducted separately for male and female respondents, and the results of the analyses were compared. The personal homogeneity factors were entered first, using a forward stepwise procedure, followed by factors included in social homogeneity, and lastly the environmental propinquity factors. The rationale for entering in this order is that the architect has least control over the personal variables and maximum control over the environmental propinquity variables.

The stepwise forward multiple regression analysis for determining frequency of social interaction among female respondents did not yield any statistically significant results. A similar analysis predicting satisfaction with

social interaction among females was completed, and results are displayed in Table 8. In this case, the regression model entered only one variable, the ability to speak English. It accounted for 13.4% of the variance in satisfaction with social interaction among females ( $F = 7.674$ ,  $df = 1,42$ ,  $p = 0.008$ ).

The next stepwise forward multiple regression analysis was conducted to predict the frequency of social support among women, from the personal homogeneity, social homogeneity and environmental propinquity variables entered stepwise in that order. The results of this analysis, shown in Table 9, indicate that the ability to speak English, again is the major predictor of frequency of social support among women ( $F = 4.369$ ,  $df = 1,42$ ,  $p = 0.043$ ), although it accounted far less variance ( $R^2 = 0.094$ ,  $Adj R^2 = 0.073$ ) than in the case of satisfaction with social interaction.

A forward stepwise regression with the similar order of entering variables was completed to determine the satisfaction with emotional help among women. The results of the analysis, displayed in Table 10, indicate that the English speaking skills of a person may have some significance in predicting the satisfaction with emotional help among women ( $F = 4.212$ ,  $df = 1,42$ ,  $p = 0.046$ ), though



---

**Table 8: Multiple Regression Analysis Predicting Satisfaction with Social Interaction for Females**

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.154	0.134	-0.393

---

F = 7.674      p = 0.008      df = 1,42

---

**Table 9: Multiple Regression Analysis Predicting Frequency of Social Support Among Females**

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.094	0.073	-0.307

---

F = 4.369      p = 0.043      df = 1,42

---

Table 10: Multiple Regression Analysis Predicting  
Satisfaction with Emotional Help Among Females

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.091	0.070	-0.302

---

F = 4.212      p = 0.046      df = 1,42

it accounts for only 7% of the adjusted variance in the model. Thus, a personal homogeneity variable - ability to speak English - seems to be influencing the satisfaction of women with social interaction, emotional help, and frequency of social support, while social homogeneity and environmental propinquity are not predictive.

Yet another forward stepwise multiple regression analysis was conducted to determine the satisfaction with tangible help among female respondents. The results of this analysis, displayed in Table 11, indicate that having children is the major predictor in predicting the satisfaction with tangible help among women, because of the statistically significant results obtained ( $F = 6.188$ ,  $df = 1,42$ ,  $p = 0.017$ ). Having children accounted for 10.8% of the variance in satisfaction with tangible help. These findings suggest that women having children seem to be friendly with one another, perhaps because their children play together, and that they could depend on each other for help with childcare.

Thus, it may be concluded that the ability to speak English may be the best predictor for social interaction and support among women; but for determining satisfaction with tangible help parenthood seems to be the best predictor.

---

Table 11: Multiple Regression Analysis Predicting Satisfaction with Tangible Help Among Females

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Social Homogeneity			
Having Children	0.128	0.108	0.358

---

F = 6.188      p = 0.017      df = 1,42

Environmental propinquity does not seem to play any role at all in determining social interaction and support among females.

Similar parallel analyses were performed for male respondents as well. Table 12 displays the results obtained from the forward stepwise multiple regression analysis conducted to determine the factors that played a role in the frequency of social interaction among men. The results indicate that 10.5% variance in frequency of social interaction is accounted by the nationality of a person, and that the distance from the laundry accounts for an additional 10.1% of the variance. The variance for the whole model, yielded an  $R^2 = 0.257$ , adjusted  $R^2 = 0.206$ . The stepwise forward multiple regression analysis for predicting satisfaction with social interaction did not yield significant results. This suggests that men may meet or interact with other friends, perhaps from the same country as their own, while doing laundry.

The next significant analysis was obtained for predicting the frequency of social support among the male respondents. The results of this analysis are displayed in Table 13. Once again, the English speaking skills of a person seem to be the best predictors of frequency of social support among

---

Table 12: Multiple Regression Analysis Predicting Frequency of Social Interaction for Males

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Social Homogeneity</b>			
Nationality	0.133	0.105	0.359
<b>Environmental Propinquity</b>			
Dist from Laundry	0.257	0.206	0.352

---

F = 5.023      p = 0.013      df = 2,29

---

Table 13: Multiple Regression Analysis Predicting Frequency of Social Support for Males

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.234	0.209	-0.484

---

F = 9.186      p = 0.005      df = 1,30



men, with the model showing significant results ( $F = 9.186$ ,  $df = 1,30$ ,  $p = 0.005$ ), and English speaking skills accounting for 20.9% of the variance in frequency of social support among males. Similar stepwise forward multiple regression analysis were performed for predicting satisfaction with social support - both emotional and tangible support but, no statistically significant results were obtained in either case.

These findings may lead to the final conclusion that the ability to speak in English is the best predictor for social interaction and support among females and males. Since the ability to speak English appeared to be the best predictor for frequency and satisfaction with social interaction and support, further investigation was done, using the whole sample, to explore the role of English by performing t-tests between weak (i.e. poor and fair) English speaking ability and good (i.e. good and very good) English speaking ability among all the respondents. The results of the t-test displayed in Table 14 suggest that the ability to speak English may not lead to differences in the frequency of social interaction ( $p = 0.137$ ,  $t = 1.51$ ), but it is associated with significant differences in levels of satisfaction with social interaction ( $p = 0.028$ ,  $t = 2.25$ ). The results, indicate a higher mean score for the

---

Table 14: T-tests Predicting Differences in Frequency and Satisfaction with Social Interaction and Support for Weak and Good English Skills of Respondents

---

Variable	Mean for weak English skills	Mean for good English skills	p	t
Freq of S.Int.	4.0	3.4	0.137	1.51
Freq of S.Supp.	8.7	6.7	0.015	2.49
Satis. w/S.Int	5.6	4.9	0.028	2.25
Satis. w/em help	5.4	4.9	0.086	1.74
Satis. w/tan help	6.3	5.9	0.236	1.19

---

df = 74

Note: Freq = frequency; S.Int = social interaction; S.Supp = social support; Satis. = satisfaction; em help = emotional help; tan help = tangible help

weaker English group regarding each of the five variables - frequency of social interaction, frequency of social support, satisfaction with social interaction, satisfaction with emotional help and satisfaction with tangible help. The results of the t-test for frequency of social support displayed in Table 14 suggested again, that the English skills of a person have most significance in determining the frequency of social support. The differences in means for the two groups indicated that international residents with weaker English skills had a higher frequency of social support. The t-tests for determining satisfaction with emotional support however, yielded non-significant results ( $p = 0.086$ ,  $t = 1.74$ ) as did those for satisfaction with tangible help ( $p = 0.236$ ,  $t = 1.19$ ). Hence, the English skills of a person may be a major predictor for social interaction and support among both females and males. These findings also bring out the importance and need for people to speak a common language in order to interact and support each other in a multi-national housing environment.

### **Role of Personal and Social Homogeneity, and Environmental Proximity in Social Interaction and Support**

Exploring the roles of personal characteristics, social

homogeneity and environmental propinquity factors on the frequency and satisfaction of social interaction and support formed the major foci of this thesis research. First, a stepwise forward multiple regression analysis was conducted for each of the following five dependent variables - frequency of social interaction, satisfaction with social interaction, frequency of social support, satisfaction with emotional help, satisfaction with tangible help. In each of these regression analyses, the personal variables - gender, need for nurturance and affiliation and English speaking ability were entered first in a forward regression, followed by the social homogeneity factors - nationality, student status, and presence or absence of children and lastly, the environmental propinquity factors were entered.

Table 15 displays the results of the stepwise forward multiple regression analysis used to determine the frequency of social interaction. The findings indicate that the English speaking ability accounts for 4.4% of the adjusted variance in frequency of social interaction. The results are statistically significant ( $F = 4.48$ ,  $df = 1,74$ ,  $p = 0.038$ ) and suggest that personal homogeneity is the only significant predictor of the frequency of social

---

Table 15: Multiple Regression Analysis Depicting Frequency of Social Interaction

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.057	0.044	-0.239

---

F = 4.481

p = 0.038

df = 1,74

interaction, while social homogeneity and propinquity play negligible roles in determining frequency of social interaction. The analysis predicting satisfaction with social interaction also yielded significant results, which are shown in Table 16 ( $F = 8.698$ ,  $df = 1,74$ ,  $p = 0.004$ ). Once again, the personal homogeneity variable, ability to speak English, seems to be the best predictor of satisfaction with social interaction, accounting for 9.3% of the adjusted variance.

A similar stepwise forward multiple regression analysis was performed for the frequency of social support. Table 17 displays the results ( $F = 5.765$ ,  $df = 2,73$ ,  $p = 0.0004$ ) which indicate that overall 17.2% of the variance can be accounted for by the regression model. English speaking skills accounted for 13.2% of the variance, and 5.0% of the variance in frequency of social support was accounted for by parenthood. Thus, it seems that one aspect of social homogeneity, having children, as well as personal homogeneity, are significant predictors of the frequency of social support.

The stepwise forward multiple regression analysis performed for satisfaction with emotional help suggests that once again, the ability to speak English may be a major

---

Table 16: Multiple Regression Analysis Predicting Satisfaction with Social Interaction

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.105	0.093	-0.324

---

F = 8.698

p = 0.004

df = 1,74

---

Table 17: Multiple Regression Analysis Depicting Frequency of Social Support

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.144	0.132	-0.362
<b>Social Homogeneity</b>			
Having Children	0.194	0.172	-0.224

---

F = 5.765

p = 0.0004

df = 2,73



predictor of the respondents' satisfaction with emotional help. The statistically significant results ( $F = 4.519$ ,  $df = 1,74$ ,  $p = 0.037$ ) are displayed in Table 18. In this case, English skills accounted for only 4.5% of the variance in satisfaction with emotional help, and no variables representing social homogeneity or environmental propinquity entered the regression analysis.

Lastly, the stepwise forward multiple regression analysis for predicting satisfaction with tangible help did not yield statistically significant results. In sum, the English speaking ability seems to be the best predictor of social interaction and support, which may suggest that the most important thing necessary in a multi-national environment for social interaction and support to occur is fluency in speaking a common language which would tie the residents together.

#### **Specific Activities associated with Social Interaction and Social Support**

Pearsons product moment correlations also were calculated among all the behavioral aspects of social interaction and social support to examine the magnitude of the

---

Table 18: Multiple Regression Analysis Predicting  
Satisfaction with Emotional Help

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.058	0.045	0.240

---

F = 4.519

p = 0.037

df = 1,74

relationships. The correlation matrix shown in Table 19 suggests that there are moderate correlations among all these aspects of support used in the study. The strongest relationship is between sharing personal problems and turning to someone in times of depression or sadness, which are essentially aspects dealing with emotional support.

#### **Specific Activities associated with Social Interaction**

The next analyses examined the possible roles of personal and social homogeneity and environmental propinquity in several more specific activities associated with social interaction.

Inviting someone or being invited to socialize: Table 20 shows that for the specific behavior of inviting someone or being invited to socialize, personal homogeneity factors - ability to speak English and need for affiliation and nurturance, are predictors ( $F = 7.270$ ,  $df = 2,73$ ,  $p = 0.001$ ). The English skills accounted for 9.6% of the variance in the behavioral aspect of inviting someone or being invited and need for affiliation and nurturance accounted for an additional 4.7%, or 14.3% of the total variance in this model.

Table 19: Correlation Matrix for Specific Aspects of Social Interaction and Support

---

Illness	P.Prob	Money	Phone	Depressed	Babysit	Ride	
0.61	0.68	0.54	0.51	0.63	0.45	0.55	Invite
	0.58	0.47	0.51	0.54	0.42	0.62	Illness
		0.35	0.46	0.81	0.56	0.51	P.Prob
			0.36	0.39	0.37	0.42	Money
				0.55	0.47	0.50	Phone
					0.53	0.49	Depress
						0.62	Babysit

---

Note: P.Prob = personal problem; Depress = depressed;

Babysit = babysitting

---

Table 20: Multiple Regression Analysis (Invitations)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.108	0.096	-0.362
Need for nurturance			
& affiliation	0.166	0.143	0.244
<hr/>			
F = 7.270	p = 0.0013	df = 2,73	

Telephoning friends: The stepwise forward multiple regression performed for determining social interaction on the telephone suggests that personal homogeneity variables -English speaking skills and the gender of the person (5.9%) combined to account for 30.8% of the variance. Social homogeneity, as reflected by nationality, accounted for 11.9%, or a total of 42.7% of the variance in interaction over the telephone. The results of this analysis are displayed in Table 21 ( $p = 0.000$ ,  $F = 19.652$ ,  $df = 3,78$ ). Thus, the preceding two analyses suggest that personal and social homogeneity are predictors of social interaction, and that environmental propinquity may lend nothing to the prediction of social interaction in a cross-cultural student family housing like Jardine Terrace.

#### **Specific Activities associated with Emotional Support**

Sharing Personal Problems: Table 22 shows the results obtained in the stepwise forward multiple regression analysis performed for investigating the issue of sharing personal problems. The statistically significant results ( $F = 8.059$ ,  $df = 2,73$ ,  $p = 0.001$ ) suggest that English speaking skills, followed by the student status of a person are dictators of the issue. Residents may be more likely to

---

Table 21: Multiple Regression Analysis (Telephoning)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.259	0.249	0.039
Gender	0.327	0.308	0.243
<b>Social Homogeneity</b>			
Nationality	0.450	0.427	0.647

---

F = 19.652      p = 0.000      df = 3,72

---

Table 22: Multiple Regression Analysis (Personal Problems)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.111	0.099	-0.249
<b>Social Homogeneity</b>			
Student status	0.180	0.158	0.277

---

F = 8.059      p = 0.0007      df = 2,73



share personal problems with friends in Jardine Terrace who speak English with similar fluency and who share the same student or non-student status. Perhaps status as a student or non-student may determine the time one spends in the apartment and also the time available for socializing with other residents. Also, most students spend quite a bit of time at the university, and therefore may have friends outside the housing complex with whom they share their problems. In addition, the ability of students to speak English is better than many non-students, which may allow communication and the development of social support among a larger number of friends.

Giving or receiving help when one is feeling depressed:

Related to the preceding issue is the giving or receiving help from friends at times when one is feeling down or depressed. Here again, statistically significant results were obtained ( $R^2 = 0.075$ ,  $\text{Adj } R^2 = 0.062$ ,  $F = 5.973$ ,  $df = 1,74$ ,  $p = 0.017$ ) and are displayed in Table 23. These results suggest that the ability to speak English accounted for 6.2% of the variance in help during times of depression, but no aspects of social homogeneity or propinquity were predictive.

---

Table 23: Multiple Regression Analysis (Depressed)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.075	0.062	-0.273

---

F = 5.973      p = 0.017      df = 1,74

## Specific Activities associated with Tangible Support

Next to be analysed were the tangible support aspects - helping at times of an illness, lending or borrowing money, helping with childcare and help with transportation.

Help during an illness: Table 24 displays the results ( $F = 6.745$ ,  $df = 4,71$ ,  $p = 0.0001$ ) of the stepwise forward regression analysis performed to study help during an illness. The factors that seemed to predict support at times of illness were - English skills (6.3%), student status (5.4%), nationality (8.2%), and distance from the main stairway (5.6%). Nationality was the best predictor with the maximum Beta value of 0.466. Unlike many other situations involving social support, for tangible support during an illness, personal homogeneity, social homogeneity, and environmental propinquity all seemed to play a significant role.

Financial help: The analysis for lending or borrowing money yielded statistically significant results shown in Table 25 ( $F = 12.79$ ,  $df = 1,74$ ,  $p = 0.001$ ). Here, as frequently reported already, the ability to speak English was the major predictor, accounting for 13.6% of the adjusted variance in the model.

---

Table 24: Multiple Regression Analysis (Illness)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.075	0.063	0.194
<b>Social Homogeneity</b>			
Student status	0.140	0.117	0.242
Nationality	0.212	0.179	0.466
<b>Environmental Propinquity</b>			
Dist from stairs	0.275	0.235	-0.253

---

F = 6.745      p = 0.0001      df = 4,71

---

Table 25: Multiple Regression Analysis (Money)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<hr/>			
Personal Homogeneity			
English skill	0.147	0.136	-0.384

---

F = 12.79      p = 0.0006      df = 1,74

Help with childcare: A similar multiple regression analysis was performed for help with childcare. The results are displayed in Table 26 ( $F = 17.674$ ,  $df = 4,71$ ,  $p = 0.000$ ) and indicate that the model accounted for a total of 47.1% of the variance. All the social homogeneity variables - nationality, having children, and student status, in addition to the personal homogeneity variable of ability to speak English were identified as predictors. These findings suggest that residents, may be most likely to depend on other parents, especially from the same country as their own, for help with babysitting. The student status factor may influence the likelihood of support through childcare by influencing how busy a resident is, and the amount of time that he or she can spend for helping with childcare. Support also is influenced by the English skills, which predict the ability to communicate well in a multi-national complex.

Help with transportation: The stepwise multiple regression performed for tangible support of - help with transportation also yielded statistically significant results ( $F = 5.703$ ,  $df = 2,73$ ,  $p = 0.005$ ) although the variance accounted for was not as large. These findings are shown in Table 27. Social homogeneity variables alone seemed to be the predictors of this aspect of support,

---

Table 26: Multiple Regression Analysis (Babysitting)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Personal Homogeneity</b>			
English skill	0.066	0.054	0.191
<b>Social Homogeneity</b>			
Having Children	0.416	0.399	-0.573
Nationality	0.457	0.435	0.405
Student status	0.499	0.471	0.215

---

F = 17.674      p = 0.000      df = 4,71

---

Table 27: Multiple Regression Analysis (Ride)

---

Variables	R <sup>2</sup>	Adj R <sup>2</sup>	Beta
<b>Social Homogeneity</b>			
Nationality	0.081	0.069	0.259
Having Children	0.135	0.111	-0.234

---

F = 5.703      p = 0.005      df = 2,73



suggesting that residents may feel most comfortable in asking, or giving rides to friends from the same country and different parenthood status. The opposite direction of the Beta value for parenthood suggests that residents with children depend on rides from others who do not have children and vice versa, perhaps the space factor.

Tables 28 summarizes the behavioral aspects of social interaction and support investigated in this study, and are grouped according to the variable they represented - social interaction, emotional support, and tangible support. Table 28 indicates that 14.3% of the variance in social interaction is accounted for by the person's need for affiliation and nurturance, while 42.7% of the variance in social interaction is accounted for by nationality. This may suggest that, whether or not a person socializes by inviting someone depends to a certain extent on his personal need of affiliation and nurturance. Secondly, the findings suggest that residents generally telephone friends from the same country as their own to interact over the phone. The results suggest that personal homogeneity may be a major predictor of social interaction.

Table 28 displays the results obtained for the emotional support variable by investigating the behavioral aspects, sharing personal problems and giving or receiving help at

Table 28: Variables Predicting	Social Interaction		Emotional Help		Tangible Help			
	Invitation	Phone	Per. problems	Depressed	Illness	Money	Babysit	Ride
<b>Personal homogeneity</b>								
English skill	0.108	0.259	0.111	0.075	0.075	0.147	0.066	
Gender		0.329						
Need for affiliation & nurturance	0.166							
<b>Social homogeneity</b>								
Nationality		0.450			0.212		0.457	0.081
Having Children							0.416	0.135
Student status			0.181		0.140		0.499	
<b>Environmental Propinquity</b>								
Apt level								
Dist from stairs					0.275			
Dist from mailboxes								
Dist from parking								
Dist from laundry								
Dist from trash disposal								
Proximity of apts								
R <sup>2</sup> =	0.166	0.450	0.181	0.075	0.275	0.147	0.499	0.135
Adj R <sup>2</sup> =	0.143	0.427	0.158	0.062	0.235	0.136	0.471	0.111
df =	2,73	3,72	2,73	1,74	4,71	1,74	4,71	2,73
F =	7.270	19.652	8.058	5.97	6.745	12.79	17.674	5.703
p =	0.0013	0.000	0.0007	0.017	0.0001	0.0006	0.000	0.005

times of depression. The results suggest that personal homogeneity may be a major predictor of satisfaction with emotional support and also student status to a certain extent. Thus, for emotional help people depend on friends who have similar personality and nature as their own and also time to share.

Table 28 also displays the results obtained for the tangible support variable by investigating the behavioral aspects - helping at times of illness, financial help, help with childcare, and help with transportation. The results shown in Table 28 suggest that social homogeneity may be the best predictor for satisfaction with tangible support received by respondents, with the ability to speak English also being a minor predictor.

It is therefore concluded that environmental propinquity almost never seemed to be a predictor in any of the analyses; which leads us to believe that propinquity may have hardly any role to play in facilitating social interaction and support among residents in a multi-national environment.

## Effects of Student Status, Parenthood, and Nationality on Social Interaction and Social Support

To investigate how social interaction and social support differ for specific groups - students versus non-students, respondents with and without children, and U.S. versus non-U.S. citizens, t-tests were performed for all these groups, using the five dependent variables - frequency of social interaction, satisfaction with social interaction, frequency of social support, satisfaction with emotional help and satisfaction with tangible help.

Table 29 displays the results of the t-test performed between student and non-student groups for each of the five dependent variables listed above. Frequency of social interaction was measured on a scale with a range of scores from 1 to 6. The t-test yielded non-significant results ( $p = 0.083$ ,  $t = -1.76$ ) although there may be a trend toward non-students having more frequent interactions. This finding may be attributable to the non-students spending more time in the apartment complex and perhaps having a limited friends circle; where as a student may have greater opportunities of making friends at the university. The findings of the t-test for determining frequency of social support, where the range of responses was scored from 1 to

---

Table 29: T-tests Predicting Differences in Frequency and Satisfaction with Social Interaction and Support for Students and Non-Students

---

Variable	Mean for Students	Mean for Non-Students	p	t
Freq of S.Int.	3.4	4.1	0.083	-1.76
Freq of S.Supp.	6.9	8.7	0.045	0.20
Satis. w/S.Int	5.0	5.4	0.200	-1.29
Satis. w/em help	4.9	5.6	0.053	-1.96
Satis. w/tan help	6.1	6.1	0.834	-0.21

---

df = 74

Note: Freq = frequency; S.Int = social interaction; S.Supp = social support; Satis. = satisfaction; em help = emotional help; tan help = tangible help

12, predicted a significant difference in the means of the two groups. Non-students appear to have a higher mean for frequency of social support as well, and the t-test yielded statistically significant results ( $p = 0.045$ ,  $t = -2.04$ ). The three satisfaction variables were measured on a 7 point scale. The findings indicate that for each of the satisfaction variables - satisfaction with social interaction, satisfaction with emotional help, and satisfaction with tangible help, the non-students have slightly higher mean scores for levels of satisfaction. These findings may lead us to believe that students are either too busy studying and don't find enough time to socially interact with and support friends in Jardine or they have close friends elsewhere on campus or in the community. Such a situation could be attributed to their better English skills and more opportunities to make friends and have social interaction outside the complex.

Table 30 displays the results of the t-tests performed between respondents with and without children children. T-tests for frequency of social interaction did not yield any significant results ( $p = 0.372$ ,  $t = 0.90$ ). The results for frequency of social support indicate that residents with children have a higher frequency of social support than respondents without children. Frequency of social support

---

Table 30: T-tests Predicting Differences in Frequency and Satisfaction with Social Interaction and Support for Respondents with and without Children

---

Variable	Mean for Respondents with Children	Mean for Respondents without Children	p	t
Freq of S.Int.	3.8	3.5	0.372	0.90
Freq of S.Supp.	8.2	6.5	0.028	2.24
Satis. w/S.Int	5.1	5.1	0.907	0.12
Satis. w/em help	4.9	5.2	0.259	-1.14
Satis. w/tan help	6.0	6.2	0.459	-0.74

---

df = 74

Note: Freq = frequency; S.Int = social interaction; S.Supp = social support; Satis. = satisfaction; em help = emotional help; tan help = tangible help

had a range of 1 to 12. All the three satisfaction variables, satisfaction with social interaction, satisfaction with emotional help, and satisfaction with tangible help were measured on a 7 point scale. The results of the t-test do not suggest any significant differences among the two groups regarding any of these three satisfaction variables. Thus, it may be concluded that parenthood is not a good predictor of frequency and satisfaction with social interaction or social support; with the exception being frequency of social support when residents with children depend on other parents or friends for help with childcare if the need arises.

Table 31 shows the results of the series of t-tests performed between U.S and non-U.S. citizens for predicting differences in all the five variables - frequency of social interaction, frequency of social support, satisfaction with social interaction, satisfaction with emotional help, and satisfaction with tangible help. The t-test on frequency of social interaction indicates that non-U.S. citizens have a higher mean score for frequency of social interaction which had a range of scores from 1 to 6 ( $p = 0.051$ ,  $t = -1.98$ ). The t-test for frequency of social support yielded statistically significant results ( $p = 0.000$ ,  $t = -3.99$ ) and indicated that non-U.S. citizens have a higher



---

Table 31: T-tests Predicting Differences in Frequency and Satisfaction with Social Interaction and Support for U.S. Citizens and Non-U.S. Citizens

---

Variable	Mean for U.S. Citizens	Mean for Non-U.S. Citizens	p	t
Freq of S.Int.	3.3	3.9	0.051	-1.98
Freq of S.Supp.	5.8	8.7	0.000	-3.99
Satis. w/S.Int	4.7	5.5	0.007	-2.76
Satis. w/em help	4.7	5.3	0.043	-2.06
Satis. w/tan help	5.9	6.2	0.337	-0.97

---

df = 74

Note: Freq = frequency; S.Int = social interaction; S.Supp = social support; Satis. = satisfaction; em help = emotional help; tan help = tangible help

frequency of social support than U.S. citizens. The findings suggest that non-U.S. citizens have higher mean scores for each of the levels of satisfaction, than the U.S. citizens. Non-U.S. citizens may have higher need for socializing and emotional support because they are in a new environment, and a different cultural milieu. They may interact more and provide more social support to each other, and are satisfied with the existing pattern of social interaction and social support. By contrast, U.S. citizens reside in a more familiar environment, may have family and friends elsewhere whom they can depend on for support and so do not feel as much need and desire to socialize.

## CHAPTER 6

### CONCLUSIONS

This chapter outlines the significance of the research undertaken, summarizes the major findings, and discusses how they relate with previous research findings. Finally, recommendations are made for the Kansas State University housing, designers, housing managers, and future researchers.

#### Significance of the Research

The significance of this research lies in the fact that it studied a multi-national, culturally mixed population to increase our understanding of the role environmental propinquity plays in the frequency of social interaction, satisfaction with social interaction, frequency of social support, satisfaction with emotional help, and satisfaction with tangible help. More detailed investigation focused on specific activities involved in these social relationships, such as inviting or being invited to socialize, or telephoning one another, which were included as activities important in social interaction. Then issues like helping when someone is depressed and sharing of personal problems

were studied as specific indicators of emotional support. Help with transportation, help with childcare, financial help, and help when ill were studied as indicators for tangible support.

### Summary of the Findings

The primary findings of this research can be listed as:

(1) Environmental propinquity does not seem to play much of a role in determining frequency and satisfaction with social interaction and support in a cross-cultural, multi-national environment like Jardine Terrace.

(2) Of the social homogeneity dimensions, only nationality and student status seem to be predictors of frequency of social interaction.

(3) International students have a higher frequency and satisfaction with social interaction and support, which may be attributed to their higher need for social relationships because of relocation and pressures of adjusting in a foreign country.

(4) An attribute of personal homogeneity, the ability to speak English, appears to be a major predictor of social interaction and support among both males and females, due to the need for a common language for communication.

Surprisingly, personal needs for affiliation and nurturance were not a strong predictor of social relationships.

(5) Parenthood seems an important predictor of tangible help, especially with childcare. This finding indicates that residents with children can relate to other parents in the complex, and also the children might be playing together, thus making it easier for parents to interact.

(6) Non-students also had higher scores for social interaction and support, which may be because their circle of friends is more limited to the housing complex. Students have more opportunities for developing social relationships outside the housing complex, in the university as a whole.

#### **Fit with Previous Research Findings**

The findings obtained from this thesis support some of the mentioned research literature reviewed earlier, while they do not fit in with others. Christopher Alexander (1972, 1977) argues that people must see each other very often under informal conditions in order for intimate, primary relationships to develop. The findings of this research fail to support the preceding argument, perhaps due to the diverse backgrounds and lifestyles of the population studied. It is evident that homogeneity of social

characteristics is more important than propinquity in Jardine Terrace. Propinquity may just initiate social interaction and support and cause residents to be neighborly, but it is not sufficient by itself to create more intimate relationships. A catalyst is needed to bring people together (Flaschbart, 1969), and in this study it was the English speaking skills of a person and nationality which seemed to assume this role.

The findings of this thesis seem to support the research done by Gans (1961) which suggested that, if neighbors are homogeneous, economically, socially, and culturally, and feel themselves to be compatible, there is some likelihood that the relationship will be more intensive than an exchange of greetings. If neighbors are heterogeneous, the relationships may not be as close regardless of the degree of propinquity.

The present study of Jardine Terrace housing at Kansas State University shows that peoples' personal and social homogeneity explains the existence and the absence of social relationships more adequately than does environmental propinquity. This research was found not to be supportive of Lang's (1975) observation that when the affordances for meeting, walking together, and using common

facilities are part of everyday life the interaction levels between people will be higher.

The research conducted by Jacobs (1961) and Hester (1975) suggested that even though adults in a residential area may not know each other, the children may, as they play on sidewalks and in streets where they are part of the social life of a neighborhood. The findings of this thesis in some way seem to be supportive of these earlier findings, because it was found that parenthood was a major predictor of tangible support among residents.

The earlier research findings (Form, 1951; Michelson, 1976) which suggested that the personal need for developing social relations may be a predictor of social interaction and support were partially supported. The relationships of international students, who perhaps had greater adjustments to a new socio-cultural environment, seemed to support these findings as they displayed a higher frequency and satisfaction with social interaction and support. However, the U.S. residents who had also relocated into this university housing complex reported lower frequency of social interaction and support, perhaps attributable to their lesser need to develop intimate relations with friends in Jardine. Many U.S. residents may have friends

and family closer by to depend on for support. However, the direct measures of need for affiliation and nurturance did not predict frequency and satisfaction with social relationships.

### **Recommendations**

For Kansas State University Housing: The following recommendations can be made to the Kansas State University housing department based on the findings of this research.

(1) Allocate at least two apartments in each block to people from the same country so that environmental propinquity can facilitate meeting their needs for social interaction and support.

(2) Try to create an equal distribution of non-students in all the blocks, so that in every block there will be non-students who can use the opportunity to socialize when most of the residents are away to school.

(3) Try to have a mixture of good and weak English speaking residents in every block, so that it is easier for everyone to be able to communicate and make friends.

(4) Also, locate residents with children near each other in all the blocks, so that children can have playmates and parents can find help with babysitting from



other parents when needed.

To Designers: The findings of this research suggest the following design considerations.

(1) Environmental propinquity plays little, if any, role in determining social interaction and support among people who are heterogeneous in terms of nationality and English speaking ability, and thus need not be a major consideration in the design of this type of facility.

(2) Designing commonly shared facilities like laundry, staircases, and mailboxes may give extra opportunities to see each other, but will not necessarily lead to more supportive social relationships.

(3) Outdoor environments may be created where people will enjoy spending time together, like - picnic shelters, parks, and play areas for children. The basic idea of such spaces is to encourage residents to spend more time outside in the complex and therefore increase the opportunities for interaction.

(4) A community center with a large hall to serve as a meeting and performance space may give opportunities to international students to celebrate festivals and have get togethers. It could serve as a place where non-students (typically females) can get together and improve English skills, learn about other countries, cultures, foods, and

crafts - and perhaps facilitate the development of social relations.

To Housing Managers: The managers of such housing facilities may also influence the levels of social interaction and support among residents. They could

(1) organize group activities to promote social interaction among the residents in each block, so that people get opportunities to meet everyone in high environmental proximity.

(2) Introduce new residents to other previously settled people in the block, perhaps by monthly newsletters or welcome parties at the beginning of every semester.

(3) Allocate apartments to residents with children close by, so that the children can play together and also create an opportunity for parents to interact.

For Future Researchers: It is suggested that future environment-behavior researchers and other social scientists

(1) Conduct similar research work in other university family student housing complexes in the country, to confirm these findings and investigate roles of nationality, and propinquity of international students in greater detail.

(2) Investigate whether environmental propinquity

variables play a similar role in determining social interaction and support in different types of designs and different organizations of the apartment blocks on the site.

(3) Investigate whether perceived distance versus actual distance between residences has any role in the definition of propinquity, and whether it affects the findings differently.

(4) Investigate whether improved site planning, added facilities in the complex, and better landscaping can encourage social interaction and support, or whether it is more easily achieved by programs and activities that promote social interaction.

(5) Investigate whether other environmental variables, besides propinquity, may contribute to the development of social interaction and support among student residents.

## BIBLIOGRAPHY

- Alexander, C. (1972). The City as a Mechanism for Sustaining Human Contact. In Robert Gutman, ed., People and Buildings. New York: Basic Books.
- Alexander, C. (1977). A Pattern Language. New York: Oxford University Press.
- Altman, Rapport & Wohlwill. (1980). Human Behavior and Environment, 4, New York and London: Plenum Press.
- Bechtel, Robert B., Marans, Robert W., Michelson, William, (1987). Methods in Environmental and Behavioral Research, New York: Van Nostrand Reinhold Company Inc.
- Bell, W., & Boat, M. (1957). Urban neighborhoods and informal social relations. American Journal of Sociology, 62, 391- 398.
- Bellin, S., & Kriesberg, L. (1965). Informal Social Relations of Fatherless Families: A Study of Public Housing and Social Mobility. A paper delivered to the 1965 Annual Meeting of the American Sociological Society.
- Bernstein, Arnold & Lennard, H.L. (1969). Patterns in Human Interaction. San Francisco: Jossey-Bass, Inc.
- Bowlby, J. (1969-1980). Attachment and Loss. New York.: Basic Books.
- Bowlby, J. (1979). The Making and Breaking of Affectionate bonds. London.: Tavistock Publications..
- Blake, R., et al. (1956). Housing, Architecture and Social Interaction. Sociometry, 19, 133-139.
- Blum, A. F. (1964). Social structure, social class, and participation in primary relationships. In A. B. Shostak and W. Gomberg (Eds.), Blue collar world. Englewood Cliffs, N.J. : Prentice-Hall.
- Boeschstein, W. (1971). Design of Socially Mixed Housing. Journal of the American Institute of Planners, 37, 311-318.
- Bott, E. (1957). Family and social networks. London: Tavistock.

- Broadly, M. (1968). Planning for People: Essays on the Social Context of Planning. London: Bedford Square Press.
- Brolin, Brent C., & Zeisel, J. (1968). Mass Housing: Social Research and Design. Architectural Forum, 129, 66-71.
- Bryne, D., & Buekler, J.A. (1955). A note on the Influence of Propinquity Upon Acquaintanceships. Journal of Abnormal and Social Psychology, 51, 147-148.
- Caplow, Theodore, & Forman, R. (1950). Neighborhood Interaction in a Homogeneous Community. American Sociological Review, 15, 357-366.
- Chermayeff, Serge, & Alexander, C. (1963). Community and Privacy. N.Y.: Doubleday.
- Cooper, C. (1975). Easter Hill Village. New York: Basic Books.
- Crowne, D.P. & Marlowe, D. (1964). The Approval Motive: Studies in Evaluative Dependence. New York: Wiley.
- Darke, J., & Darke, R. (1974). Planned Paradise. Habitat, 17, 36-40.
- Demerath, N.J. (1962). St. Louis public housing study sets off community development to meet social needs. Journal of Housing, 19, 472-478.
- Dressler, D. (1969). Sociology: The Study of Human Interaction, New York: Random House.
- Edwards, A.L., (1959). Edwards Personal Preference Schedule. New York: The Psychological Corporation.
- Feldman, Arnold S., & Tilly, C. (1960). The Interaction of Social and Physical Space. American Sociological Review, 25, 877-884.
- Festinger, Leon, Schachter, S. & Back, K. (1950). Social Pressures in Informal Groups, A Study of Human Factors in Housing. New York: Harper and Row.
- Festinger, L., & Kelley, H. (1951). Changing Attitudes through Social Contact: An Experimental Study of a Housing Project. Ann Arbor, Mich.: Research Center for Group Dynamics, Institute for Social Research, University of Michigan.

- Flaschbart, P.G. (1969). Urban Territorial Behavior. Journal of the American Institute of Planners 25, 6, 412-416.
- Form, W. (1951). Stratification in low and middle income housing areas. Journal of Social Issues, 7, 116-117.
- Fried, M. (1963). Grieving for a Lost Home. In L.J. Duhl (Ed.) The Urban Condition. New York: Basic Books.
- Fromm-Reichmann, F. (1959). In D.M. Bullard (Ed.), Psychoanalysis and psychotherapy, selected papers. Chicago: University of Chicago Press.
- Gans, H.J. (1961). Planning and Social Life: Friendship and Neighbor Relations in Suburban Communities. Journal of the American Institute of Planners, 27, 134-140.
- Gans, H.J. (1967). The Levittowners: Ways of Life and Politics in a new Suburban Community. New York: Pantheon, 1967.
- Gans, H.J. (1971). The Balanced Community: Homogeneity or Heterogeneity in Residential Areas? Journal of the American Institute of Planners, 27, 176-184.
- Greer, E. (1960). Privately Developed Interracial Housing. Berkeley: University of California Press.
- Gutman, R. (1966). Site Planning and Social Interaction. Journal of Social Issues, 22, 103-115.
- Herberle, R. (1960). The normative element in neighborhood relations. Pacific Sociological Review, 3, 3-11.
- Hester, R. (1975). Neighborhood Space. Stroudsburg, Pa.: Dowden, Hutchinson & Ross.
- House, J.S. (1944). Work Stress and Social Support. Reading, Mass.: Addison-Wesley Pub. Co., c1981.
- Ittelson, Proshansky, Rivlin, & Winkel. (1974). An Introduction to Environmental Psychology. New York: Holt, Rinehart & Winston, Inc.
- Ittelson, William, Proshansky, H.M., Rivlin, L. & Winkel, G. (1974). The Built Environment. In An Introduction to Environmental Psychology. New York: Holt, Rinehart & Winston.

- Jacobs, J. (1961). The Death and Life of Great American Cities. New York: Random House.
- Keller, S. (1968). The Urban Neighborhood. New York: Random House.
- Kuper, L. (1953). Living in Towns. London: The Crescent Press.
- Lang, J. (1987). Creating Architectural Theory. New York: Van Nostrand Reinhold Company.
- Lazarasfeld, P., & Merton, R. (1954). Friendship as a social process: A substantive and methodological analysis (Part I: Substantive analysis, by R. Merton), in Berger, M., Abel, T., & Page, C. (Eds.), Freedom and Control in Modern Society. New York: Van Nostrand.
- Lipman, A. (1968). Building Design and Social Interaction. Architects' Journal, 147, 23-30.
- Lofland, L.H. (1973). A World of Strangers: Order and Action in Urban Public. New York: Basic Books.
- Lynch, K. (1960). The Image of the City. Cambridge, Mass.: The M.I.T. Press.
- Michelson, W. (1976). Man and His Urban Environment: A Sociological Approach, Reading, Mass.: Addison-Wesley (revised edition).
- Newman, O. (1972). Defensible Space. New York: MacMillan Co.
- Patterson, M. (1968). Spatial factors in social interactions. Human Relations, 21, 351-361.
- Porteous, J.D> (1977). Environment and Behavior: Planning and Everyday Urban Life. Reading, Mass.: Addison-Wesley.
- Proshansky, Ittelson, & Rivlin. (1976). Environmental Psychology, 2nd Edition. New York: Holt, Rinehart & Winston.
- Rainwater, L., & Schwarts, M. J. (1965). Identity, world view, social relations, and family behavior in magazines. Social Research, Inc.
- Rapoport, A. (1969). House Form and Culture. N.J.:

Prentice-Hall.

- Rook, K.S. (1987). Interpersonal Relations and Group Processes. Social Support Versus Companionship: Effects on Life Stress, Loneliness, and Evaluations by Others. Journal of Personality and Social Psychology, 52, 1132-1147.
- Rosow, I. (1961). The Social Effects of the Physical Environment. Journal of the American Institute of Planners, 27, 127-133.
- Rowles, G.D. (1978). Prisoners of Space?: Exploring the Geographical Experience of Older People. Boulder, Colo.: Westview Press.
- Sarason, I.G., Levine, H.M., Basham, R.B. & Sarason, B.R. (1983). Assessing Social Support: The Social Support Questionnaire. Journal of Personality and Social Psychology, 44, 127-139.
- Vernon, G. M. (1965). Human Interaction: An Introduction to Sociology. New York: The Ronald Press.
- Wallace, A. (1952). Housing and Social Structure. Philadelphia: Philadelphia Housing Authority.
- Whyte, W.H. (1980). The Social Life of Small Urban Spaces. New York: Conservation Foundation.
- Wilner, D. M., et. al. (1952). Residential Proximity and Inter-group Relations in Public Housing Projects. Journal of Social Issues, 8, 45-69.
- Wilner, D. M., Walkey, R. P., Pinkerton, T. C., & Tayback, H. (1962). The housing environment and family life. Md.: Johns Hopkins University Press.
- Wolfe, Maxine, and Proshansky, H. (1974). The Physical Setting as a Factor in Group Process and Function. In Lang, J., et al., eds., Designing for Human Behavior: Architecture and the Behavioral Sciences. Pa.: Dowden, Hutchinson & Ross.
- Yancey, W. L. (1971). Architecture, interaction and social control: The Case of a Large-Scale Public Housing Project. Environment and Behavior, 3, 3-21.



## Appendix

Dear Resident,

My name is Pooja Kukreja, and I am a graduate student in the department of Architecture at Kansas State University. As a part of my Master's thesis project I am studying how design influences the ways people meet, become friends, and help each other. This study will broaden our understanding of how designers can facilitate peoples' frequency and satisfaction with social interaction and support.

I would like to ask your co-operation in an interview that will take 20-30 minutes. The information you provide will be confidential. If you decide to help me your responses will in no way affect any future housing assignments at Kansas State University. Your participation is entirely voluntary. Please feel free to skip any question you do not wish to answer. The interview will basically deal with questions concerning your friends in this apartment complex, the help you give or receive from friends in times of need, the frequency of visiting friends, your satisfaction with the existing pattern of socialization, and your feelings about yourself.

I will telephone you or stop by to set up an appointment for the interview, at a time convenient to you tomorrow. Your co-operation would be very much appreciated.

If you have any questions regarding the study or your participation, please feel free to contact me at 776-6779, or my major advisor, Dr. Lyn Norris-Baker at 532-5953. For any additional questions about your rights as a subject or the manner in which this research is conducted, you may contact Dr. Carolyn Norris-Baker, Chairperson, Architecture and Design Subcommittee, Department of Architecture, Seaton Hall, Kansas State University, Manhattan, Kansas 66506. 913-532-5953.

Thanking you,

Sincerely,

Pooja Kukreja

QUESTIONNAIRE

Section I (To be filled in by the interviewer before the interview)

1. The apartment is on:  1st level  2nd level
2. The apartment is how many apartments away from the main stairway (counting the apartment interviewed)?  
 1  2  3  4  5
3. Distance from mailboxes \_\_\_\_\_
4. Distance from parking lot \_\_\_\_\_
5. Distance from laundry \_\_\_\_\_
6. Distance from trash disposal \_\_\_\_\_

Section II

7. Sex:  Male  Female
8. Your native country is: \_\_\_\_\_
9. Are you:  a student  not a student
10. Do you have any children?  Yes  No  
How old are they? \_\_\_\_\_
11. How do you rate your ability to speak English?  
 Poor  Fair  Good  Very Good
12. The average amount of time you spend in your apartment each day is: \_\_\_\_\_  
The average amount of time you spend in any other apartment is: \_\_\_\_\_  
The average amount of time you spend outside in your apartment complex is: \_\_\_\_\_
13. How long have you been living at Jardine Terrace?  
 Less than 6 months  6-11 months  
 12-17 months  More than 18 months
14. How long have you been in Manhattan?  
 Less than 6 months  6-11 months  
 12-17 months  18 months or more
15. Do you or your spouse own a car?  Yes  No

Section III

Note: All answers need to be in reference to Jardine Terrace residents. For every "Yes" answer in this section fill out the table shown at the end of the section.

16. Do you have friends whom you enjoy getting together with for a visit or to go out somewhere - like a park or movie or restaurant.  
 Yes  No  
If yes....could you tell me a little more about your friends. I don't need to know their names, just initials and their apartment #  
Friends whom you enjoy getting together with:  
1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
17. How often do you get together with someone to visit or to go out somewhere?(Use table to fill out for each person)  
 About once a week  More than once a week  
 Less than once a month  About once a month  
 2-3 times a month  Never
18. Have you invited anyone for a visit or to go out somewhere in the past 3 months?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
19. Is there someone who usually invites you to get together to do these things?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
20. Have you been invited for a visit or to go out somewhere in the past 3 months?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
21. If you were to become sick and had to stay in bed for a few days, is there someone you could ask to help take care of you?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
22. Is there someone who would ask you to take care of them if they became sick for a few days?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
23. When you are concerned about a personal problem - for example, about someone you are close to or something

you are worried about - how often do you talk about it with someone you know in Jardine Terrace?

Usually  Sometimes  Hardly ever  
Who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

24. Is there someone who talks to you when they are concerned about a personal problem?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
25. Sometimes people need to borrow money from another person. If you needed to borrow \$100 sometime, is there someone you could ask to lend you some or all of the money?  
 Yes  No  Would never borrow  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
26. Is there someone who would borrow money from you sometime if they needed to?  
 Yes  No  Financially unable  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
27. Sometimes people know someone who they like to talk to fairly regularly on the telephone. Is there someone you like to call to talk on the phone?  
 Yes  No  Don't own phone, can't afford it.  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
28. Is there someone who calls you when they want to talk on the phone?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
29. Sometimes when people get down or depressed it helps to be with another person. Is there someone you can turn to for comfort when you get down or depressed?  
 Yes  No  Would not ask for help  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
30. Is there someone who turns to you for comfort when they are depressed?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_
31. Often people know someone who they think of as a best friend. Do you know someone who you think of as a best friend?  
 Yes  No  
If yes, who: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

32. Is there someone who thinks of you as their best friend?  
 Yes No  
 If yes, who: 1.\_\_\_\_\_ 2.\_\_\_\_\_ 3.\_\_\_\_\_ 4.\_\_\_\_\_ 5.\_\_\_\_\_
33. Often there is some friend you can depend on to take care of your children for sometime if need arises. Is there someone you can rely on?  
 Yes No No children  
 If yes, who: 1.\_\_\_\_\_ 2.\_\_\_\_\_ 3.\_\_\_\_\_ 4.\_\_\_\_\_ 5.\_\_\_\_\_
34. Is there someone who can depend on you for taking care of their children?  
 Yes No  
 If yes, who: 1.\_\_\_\_\_ 2.\_\_\_\_\_ 3.\_\_\_\_\_ 4.\_\_\_\_\_ 5.\_\_\_\_\_
35. If you need a ride somewhere, for example for shopping, is there someone you can ask?  
 Yes No  
 If yes, who: 1.\_\_\_\_\_ 2.\_\_\_\_\_ 3.\_\_\_\_\_ 4.\_\_\_\_\_ 5.\_\_\_\_\_
36. Is there someone who can ask you for a ride when in need?  
 Yes No No car  
 If yes, who: 1.\_\_\_\_\_ 2.\_\_\_\_\_ 3.\_\_\_\_\_ 4.\_\_\_\_\_ 5.\_\_\_\_\_
37. All in all, how satisfied would you say you are with the amount of contact you have with your friends?  
 1 2 3 4 5 6 7  
 Very Neutral Very  
 dissatisfied satisfied
38. All in all, how satisfied would you say you are with the emotional help (like turning to someone when you are depressed) that you receive from your friends?  
 1 2 3 4 5 6 7  
 Very Neutral Very  
 dissatisfied satisfied
39. All in all, how satisfied would you say you are with the help (like getting a ride, help in babysitting, etc.) you receive from your friends?  
 1 2 3 4 5 6 7  
 Very Neutral Very  
 dissatisfied satisfied

(If yes): May I know the following things about each of them.

Name (initials)	1.	2.	3.	4.	5.
Lives in: block & apt.#					
Sex: M/F					
Native country					
Student/ non-student					
Children Yes/No					
Ability to speak English Poor/Fair/ Good/V.Good					
Qs#17 for each					

Section IV (To be completed by the respondent)

Please use the following scale to answer the questions in this section.

1	2	3	4	5
Strongly disagree	Disagree	Makes no difference	Agree	Strongly agree

- \_\_\_ 1. I like to help my friends when they are in trouble.
- \_\_\_ 2. I like to do things for my friends.
- \_\_\_ 3. I like to share things with my friends.
- \_\_\_ 4. I don't like to have strong attachments with my friends.
- \_\_\_ 5. I like to do things by myself rather than with my friends.
- \_\_\_ 6. I like to be generous with my friends.
- \_\_\_ 7. I like to participate in groups in which the members have warm and friendly feelings toward one another.
- \_\_\_ 8. I like to be loyal to my friends.
- \_\_\_ 9. I don't like to write letters to my friends.
- \_\_\_ 10. I like to do small favors for my friends.
- \_\_\_ 11. I don't like to form new friendships.
- \_\_\_ 12. I don't like to show a great deal of affection toward my friends.
- \_\_\_ 13. I like to sympathize with my friends when they are hurt or sick.
- \_\_\_ 14. I like to forgive my friends who may sometimes hurt me.
- \_\_\_ 15. I like my friends to encourage me when I meet with failure.
- \_\_\_ 16. I like to help other people who are less fortunate than I am.



- 17. I like to treat other people with kindness and sympathy.
- 18. I don't like my friends to confide in me and to tell me their troubles.

Listed below are some statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. Mark a T or F in the space to the left of each question.

- 19. I never hesitate to go out of my way to help someone in trouble.
- 20. I have never intensely disliked anyone.
- 21. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.
- 22. When I don't know something I don't at all mind admitting it.
- 23. I would never think of letting someone else be punished for my wrongdoings.
- 24. I never resent being asked to return a favor.
- 25. I have never been irked when people expressed ideas very different from my own.
- 26. I have never felt that I was punished without cause.
- 27. I have never deliberately said something that hurt someone's feelings.

Thankyou very much.

THE ROLES OF PROPINQUITY AND HOMOGENEITY IN FACILITATING  
SOCIAL INTERACTION AND SUPPORT: A CASE STUDY OF A UNIVERSITY  
APARIMENT COMPLEX

by

POOJA KUKREJA

B. ARCH., Punjab University, India, 1986

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the  
requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1989

## ABSTRACT

This thesis explores the roles of environmental propinquity and personal and social homogeneity in facilitating social interaction and support in the context of a cross-cultural married student housing complex at Kansas State University.

Aspects of environmental propinquity (such as apartment level, distance from the laundry, parking, mailboxes, and trash disposal area and proximity to other apartments), personal homogeneity (such as gender, ability to speak English, and need for affiliation and nurturance), social homogeneity (such as nationality, student status, and parenthood) comprised the independent variables in the study while frequency of social interaction, frequency of social support, satisfaction with the existing pattern of social interaction, satisfaction with the emotional help received from friends and satisfaction with the tangible help available from friends at the apartment complex comprised the dependent variables of the study.

A structured interview was used to collect data for the research. The questionnaire comprised of questions adapted from previously tested instruments including, the Edwards Personal Preference Schedule, a social support and interaction interview developed by Rook, Sarason's Social Support questionnaire, and Crowne and Marlowe's social

desirability scale. Analyses including t-tests, multiple regression analyses and Pearson correlation coefficients were used to explore the factors which may predict frequency and satisfaction with social interaction and social support.

It was found that (1) environmental propinquity may not play a role in determining the frequency and satisfaction with social interaction and support in a culturally heterogeneous housing environment, such as Jardine Terrace; (2) the ability to speak English, nationality, and student status were the three major predictors of social interaction and support; (3) international residents had a higher frequency and satisfaction with social interaction and support than did U.S. residents, perhaps due to their relocation to a foreign country and a new environment; (4) parenthood was a predictor of tangible help, especially help with childcare; and (5) non-students had weaker English skills, but higher frequency and satisfaction with social interaction and support. Based on these findings, some recommendations were formulated for designers, housing managers, and future researchers.