CHAPTER - 2

REVIEW OF RELATED LITERATURE

The present chapter embodies a brief review of the researches done in the area related to this investigation. The purpose of reviewing the earlier researches is not only to economise the historical perspective to the present work but also to show that the related studies have taken cognizance of one or more variables included in this study. Citation of these studies may help the investigator to design her study in a manner that recurrence of the shortcomings and pitfalls observed in any earlier study may be checked. Alternatively, these findings may be utilised to facilitate the support whenever necessary for interpretation of the results of present study.

Survey of related literature avoids the wasteful duplication of efforts and throws light on the methods to be adopted, techniques to be used for data collection and procedures employed for processing and analysing data. Only those studies have been reviewed here in some depth of details as have considerable bearing on this investigation. Although many more could be added for the purpose but the investigator had the selective studies for obvious reasons.

AGE AND PERSONAL SPACE

Baxter (1970) studied the effect of age (children, adolescents and adults), sex dyads (female-female, male-male, female-male), and settings (indoor-outdoor) on interpersonal distance (i.e. personal space). It was found that children used least personal space, adolescents next and adults used most (i.e. largest) personal space. Mixed sex dyads and female - female dyads maintained smaller personal space than male - male dyads.

Castell (1970) studied the effect of age on personal space and found that personal space increases with age.

Likewise, the effect of age and sex on personal space was measured by estimating the interpersonal distance (from nose to nose) from photographs of 57 dyads of 19 to 76 years. A curvilinear relationship between age and distance was found (Heska & Nelson; 1972).

Evans & Howard (1973) studied the effect of age on personal space. Subjects were teenaged children. They found that interpersonal distance increased with age. Personal space of boys and girls from five to eight years was measured. Girls maintained smaller personal space than boys. Eighth graders maintained larger personal space than fifth graders, but among young children there was no difference between boys and girls.
The effect of age on personal space was measured by Lerner et al (1975) in which they felt figure placement technique was administered on 44 males, 42 females from grade 1st to 3rd and it was observed that interpersonal distance increased with age. In another research 424 same sex pairs of 6 - 16 yrs. were taken to investigate the influence of age on interpersonal interaction distance. Unobstrusive observation method in modified classroom situation and Hall's proxemic scale were administered. It was found that personal space gradually increased with age (Aiello & Aiello, 1974).

Fisher & Byrne (1975) concluded from their studies that individual's spatial behaviour changes as they grow older. Tennis & Dabbs (1975) used stop distance technique for same sex confederates to measure effect of age and sex on personal space. Subjects were 20 males and 20 females of grade 1st, 5th, 9th and 12th (college sophomores). They found males used more space at all ages except 1st grade students. Differences between sexes increased with age. Ss used more space in corners than in centre of a room.

To study the effect of age on personal space of subjects, “Preferred-personal-space-questionnaire” was administered on 100 females of 55 to 88 years. It was observed that personal space increased with age (Gioella; 1977). Ford and Graves (1977) administered stop distance approach towards a confederate of same age, gender and ethnic background. Subjects were 20 white males and 20 Chicano males of 2nd to 8th grades. They found that younger children approached each other more closely than older children. Females approached closer than males. Chicano 2nd graders approached closer than white 2nd graders.

Melson (1977) observed the effect of sex and age on personal space. Subjects were 36 males and 44 females of 3 to 5 years. He observed that 4 to 5 years old children used more personal space than 3 to 4 years old children. Both sex figures maintained more distance to opposite sex pairs.

A slight increase in the personal space scores of two to five and half years old children were observed through the videotapes of 113 pairs (Smetana, Bridgeman & Bridgeman, 1978).

Aiello and Cooper (1979) used adaptation of Hall's proxemic scale on 128 same sex pairs at grade 2nd, 5th, 8th and 11th and found that subjects stood at larger distances as their age increased.

The influence of age and sex was observed on personal space scores of 1047 black and white males and females, students of grade K to 6th class. Interpersonal Distance test was administered. It was found that interpersonal distance increased with age and older children stood farther from opposite sex than younger children (Willis, Carlson & Reeves; 1979). In a similar study Thomson & Aiello (1981) used an unobstrusive method, in which Hall's proxemic scale was administered on 264 same sex, same race pairs of normal and retarded students of 5 to 19 yrs. They found that with the increase in age interpersonal distance increased in all groups.
Aiello & Pagan (1982) used adaptations of Hall’s proxemic scale in unobtrusive observation of 138 male, 146 female children and adolescents. They found that personal space increased with age in both groups.

It has been concluded that there is a gradual increase in the size of personal space between age of 3 to 21 years (Hadayuk; 1983).

Socio economic status has been found to be an important variable affecting personal space orientation (Saxena, 1987).

FAMILIARITY, TOPIC - INTIMACY, SEX AND PERSONAL - SPACE

Researchers have investigated that individuals develop an equilibrium point for intimacy, which is a joint function of several immediacy behaviours (e.g., interpersonal distance, disclosure, familiarity) and the influence of sex. During interpersonal interaction females generally show more affiliative behaviour and maintain less space with same sex dyads than opposite sex dyads, while, males maintain more personal space than females. One of the strongest generalizations of personal space research is that the attraction and familiarity draw the individuals physically closer. Little (1965) found that drawings of individuals described as good friends were placed closer together than were drawings of strangers.

Sarabany, Gershoni & Hoffman (1981) studied the effect of age trends in the depth of intimacy with same and opposite sex friends. The sample was 480 children of 5th, 7th, 9th and 11th grade. They were first asked to name a close (same or opposite sex) friend and then respond to the Sarabany-Intimacy-Scale to assess the degree of intimacy a friend feels for a friend. Results indicate that same sex friendships involve a high level of intimacy right across the age span.

Studies have been done to examine the influences of the type of social interaction enacted by two male confederates at various distances apart, on the permeability and inviolability of their interactional space. Tone of voice and bodily postures and facial gestures were manipulated to create (A) ambiguous nonverbal social interactions, (B) normal interactions, (C) intensive social interactions (D) interactions charged with high emotional value (high - intimacy). 624 incidental passers-by were observed as they viewed confederates on 16 occasions in 1 of 3 public places; the entrance hall of public library, outside a university building or in a main city street. Findings revealed that, as hypothesized, the boundaries of interactional space grew stronger and closer as social interaction grew intimate and heightened (Fisher, 1984).

Singh (1984) investigated the effect of intimacy on the degree of similarity of understanding specific concepts. 120 university students, 20 unrelated males, 20 unrelated females, 40 couples (married for more than five
years) were administered the Semantic Differential test. Results indicate that intimacy effects the degree of similarity of understanding, the greater the intimacy the lesser the interpersonal distance was found.

Bohra & Pandey (1984) studied ingratiation towards strangers, friends and bosses. 110 male undergraduates completed a scale measuring ingratiating behaviours (other enhancement, self deprecation, instrumental dependency, name dropping and situation specific behaviours) towards three target persons: a stranger, a friend and a benefactor (boss). Subjects showed more ingratiation (intimate) responses towards benefactors and friends while least towards strangers.

The relationship between communication satisfaction (degree of topic intimacy) and satisfaction with self and other (i.e. familiarity or relationship intimacy) was studied by Hecht, Sareno & Spitzberg (1984). Subjects were 360 individuals, age 10 to 95 years, engaged in conversation with other person and requested each person of the dyad to complete a questionnaire. Findings indicated that level of relationship intimacy (familiarity) was strongly related to the level of topic intimacy and self disclosure.

Hornstein (1985) studied intimacy in conversational style as a function of the degree of closeness between members of a dyad. 58 naturally occurring telephone conversations were analysed between pairs of female friends, acquaintances and strangers to investigate how intimacy is conveyed in conversational style. In comparison with strangers, friends disclosed more and asked more questions and used more complex form of closing. Acquaintances were generally more similar to strangers than they were to friends.

Jost; Schatzle, Schenk & Wagner (1985) studied the interaction pattern with spouse compared to that with friends, coworkers and neighbours. They compared interactions with the spouse, same sex best friend, best colleague and the best neighbour of 159 male and 122 female adults. Scales were constructed to measure the frequency of conversations on topical themes and personal matters, the frequency of mutual leisure time activities, the degree of solidarity in difficult situations and the degree of frank behaviours. Discriminant analysis and ANOVA indicated that most intimate interactions occurred with the spouse and the best friends, interactions with neighbours and colleagues were more formal.

The influence of status and solidarity on familiarity was studied by McMullen & Krahn (1985) in written communication. Subjects were 48, 2nd and 3rd year university students who wrote letters to a university professor, a 1st year university student, a friend and an equal status and a lower status stranger. Results indicated that letters to friends consisted of a greater number of familiar modes and more self disclosure than letters to strangers. Subjects did not use a greater number of familiar modes in their letters to lower status recipients.
The personal space varies solely along the dimensions of like-dislike. Personal space of 54 subjects aged 2 to 4 years was measured by O'Kano (1985). Various silhouettes represented as father, mother, teacher, a close friend, people that subjects did not know and people whom the subjects disliked were introduced by the investigator and the preferred personal space between these silhouettes and subjects were measured. 1) Results indicated that Ss placed silhouettes representing people whom they disliked farther away from themselves than silhouettes representing people they liked, and (2) the higher the mental age of subjects, the farther away from themselves they placed the people (silhouettes) they disliked.

O'Leary & Gallios (1985) analysed the behaviour and sequence in friend's and stranger's conversation. Subjects were 40 undergraduate females, divided into 10 dyads of friends and 10 dyads of strangers, were video taped during conversation. The verbal content and the occurrence of 13 nonverbal behaviours in the 10 middle and 10 last turns were analysed. They found that conversational style between friends were more personal and intimate than those of strangers.

Albas & Albas (1989) investigated the relationship of distance to eye contact and perception of possible physical threat by inter-relating Argyle and Dean's (1965) compensatory hypothesis with Dosey and Meisels' (1969) perception of personal space as a "body bufferzone". Forty male and forty female Canadians between 18 and 59 years of age served as subjects. Settings were classified as either potentially threatening or nonthreatening. The degree of eye contact was varied by having experimenters' wear or not wear sun glasses. As expected, there was support for Dosey and Meisels theory that in situations perceived to be potentially threatening, people react by standing farther back and using personal space as a buffer zone, Argyle and Deans hypothesis was not fully supported because in the potentially threatening situation, the lower the degree of eye contact, the farther the distance of interaction between respondents and experimenters.

Sinha & Mukherjee (1990) studied the relationship between marital adjustment and personal space orientation in an Indian sample of 24 high and 24 low marital adjustment subjects. Personal space orientation was measured by doll placement and seating preference tests. Repeated measures on a last factor analysis of variance (ANOVA) showed that marital adjustment did not affect personal space requirements of the subjects but that for different dyads they differed significantly. The least personal space was required for a wife-husband dyad, followed by wife - female, husband - female, and wife - male dyads. The results of the seating preference test confirmed that for a wife-husband dyad the side by side arrangement was preferred, whereas for wife-male and husband-female dyads, far-end side arrangements were preferred.
The summary of a few studies done in the field of familiarity (i.e., degree of acquaintance) and sex dyads as related to interpersonal distance are being presented in a table form:

<table>
<thead>
<tr>
<th>Study</th>
<th>Subjects</th>
<th>Methodology</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klukken (1972)</td>
<td>28 male, 28 female college students.</td>
<td>Interpersonal distance equilibrium.</td>
<td>Males were similar on distance in all settings. Degree of acquaintance was an important determinant for females.</td>
</tr>
<tr>
<td>Crowe (1975)</td>
<td>67 male, 90 female undergraduates.</td>
<td>Approach by confederate.</td>
<td>Females allowed same sex other to approach closer than males. Males also allowed females to approach closer than males.</td>
</tr>
<tr>
<td>Lerner, Venning &amp; Knapp (1975)</td>
<td>38 fourth graders, 36 fifth graders, 33 sixth graders.</td>
<td>Placement of silhouettes (Male and female figures of average, actomorph, endomorph and mesomorph figures).</td>
<td>Females used more space toward males, males used more space toward males.</td>
</tr>
<tr>
<td>Lerner, Iwakaki &amp; Chaihara (1976)</td>
<td>184 male, 184 female Japanese, grade K to 3rd.</td>
<td>Felt figure placement.</td>
<td>Opposite sex pair maintained more space between themselves than same sex pairs.</td>
</tr>
<tr>
<td>Rohner &amp; Aiello (1976)</td>
<td>208 high school juniors &amp; seniors in same sex &amp; mixed sex pairs.</td>
<td>Unobstrusive observation field (modified classroom) using adaptations of Hall's proxemic scales.</td>
<td>Female-female pairs stood closer and more directly than male- male pairs.</td>
</tr>
<tr>
<td>Iwata (1978)</td>
<td>132 female college students.</td>
<td>A) Questionnaire concerning crowding B) Pederson's personal space measures (approach off and toward experimenter).</td>
<td>Familiarity influences reactions to crowding and inter-personal distance.</td>
</tr>
<tr>
<td>Leventhal, Lipshultz &amp; Chiodo (1978)</td>
<td>60 males, 60 females.</td>
<td>Stop approach of invader in laboratory.</td>
<td>females required more space if invader was male and less space if invader was female, while opposite effect was found with males.</td>
</tr>
<tr>
<td>Study</td>
<td>Subjects</td>
<td>Methodology</td>
<td>Results</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
<td>-------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Leventhal, Matturro &amp; Schaner-nam (1978)</td>
<td>60 white male, 60 white female college students</td>
<td>Projective measures of distance kept from liked, disliked and strangers.</td>
<td>Females allowed liked female closer than disliked and strangers; allowed liked male closer than strangers. Males allowed females closer than males. For stop distance measures males kept positive and negative at greater distances than neutral.</td>
</tr>
<tr>
<td>Aston &amp; Shaw (1980)</td>
<td>40 male, 40 female college student targets</td>
<td>Paper pencil approach from different targets.</td>
<td>Females preferred less distance with same sex than males.</td>
</tr>
<tr>
<td>Aston, Shaw &amp; Worsham (1980)</td>
<td>20 male and 20 female college students</td>
<td>Subject’s ratings of actual interpersonal distances between themselves and a friend or stranger.</td>
<td>Both males &amp; females preferred to keep strangers at greater distances.</td>
</tr>
<tr>
<td>Keating &amp; Keating (1980)</td>
<td>40 male Kenyans</td>
<td>Observation of photographs. Distance from photographs of pairs seated on benches.</td>
<td>Acquainted pairs sat closer than unacquainted pairs.</td>
</tr>
<tr>
<td>Bernard &amp; Bell (1982)</td>
<td>19 male, 22 female college students</td>
<td>Approach toward confederate by using Interpersonal Distance Mat (IDM)</td>
<td>Females approached closer to a female than they approached a male.</td>
</tr>
<tr>
<td>Ickes, Patterson, Rajecki &amp; Yan Ford (1982)</td>
<td>98 male college students in dyads</td>
<td>Observation of distance (by seated distances from each other) varied according to the subjects a) Expected unfriendly partner, b) Expected friendly partner, c) No Expectations.</td>
<td>Ss sat closest to the friendly partners, farthest from “no expectancy partners.”</td>
</tr>
</tbody>
</table>
DENsITY AND PERCEIVED COOPERATION AMONG ROOMMATES

Galle, Gove and McPherson (1972) conducted a carefully controlled field study to investigate the effects of density. Based on the research done with animals they predicted that high concentration (i.e. lack of living space of people) would increase the incidence of social pathology. To measure density, they used census estimates of number of people living in a square mile in different communities. The results of the animals studies seemed to be generalizable to humans. Lack of space increases social pathology and crime rates.

Dooley (1974) reported that subjects in high social density conditions felt more restricted and irritated and they negatively perceived others than Ss in low density conditions. Sundstrom (1975) hypothesized that stress in high room density or crowding depends on interpersonal disturbances such as intrusion and goal blocking. High room density was predicted to intensify individual’s reactions to these disturbances. 6 groups of college students (each group containing male college students i.e. 3 subjects + 3 confederates) were placed in a large room or small room. Subjects and confederates interacted in pairs. Confederates introduced intrusion by leaning forward, touching subjects and attempting 80% eye contacts as confederate talked. Goal blocking involved inattention and interruptions as subjects talked. Interactions were videotaped through two way mirrors to record nonverbal behaviours associated with affiliation and stress. Subjects also completed self report measures of stress and self disclosure. They reported discomfort and crowdedness in small room and showed less disclosure. Personal space intrusions led to initial discomfort and crowdedness in small room, while goal blocking produced self reported irritation that increased with time and lower levels of social regards, gesturing and head nodding.

Effect of increased spatial density on males and females was studied by Baum & Koman (1976). Men anticipating interaction with four other men in a very small room assumed more aggressive seating positions and competitive interactional styles than did men with the same group size in a large room. Women showed increasing withdrawal tendencies in increasing spatial density while decreasing withdrawal and increasing positive interactions in decreasing spatial densities. They also manipulated expectation of group size and room size on 2:1 ratios in a laboratory study. As a result these two conditions (i.e. 10 people - large room; 5 people- small room) reflected identical physical densities, but differed on whether social or spatial density was salient and that increasing social density was associated with social problems, withdrawal and less aggression than increasing spatial and group density conditions.

Worchel and Teddlie (1976) independently manipulated density and personal space. Groups of eight subjects worked on tasks in either a large room (low density) or a small room (high density). Half of the subjects of the group were forced to sit so close together that their personal space was violated whereas in the other half of the groups the subjects were seated farther apart. The first half of the group felt more crowdedness than the second half of the group.
It has been studied (Baum & Davis, 1980) that increasing space sharing experience (i.e. large no of residents sharing limited spaces) was associated with more feeling of crowding, negative affect and withdrawal. In another design, grouping people around shared space in smaller numbers, was not associated with feeling of crowding. Better architectural designs appear to prevent the experience of crowding and related distress.

McCain et al. (1980, 1981) studied effect of density in one medium security prison, in which ratings of environment of double seaters were more negative than ratings of singles. A comparison of double seaters with open dormitory housing residents proved that the dormitory housing conditions were related to more negative reactions, negative mood states and higher illness complaints than either doubles or singles.

Physiological, cognitive and nonverbal responses to repeated exposure of crowding were studied in a laboratory setting. 20 male college students were exposed three times over a three week's period to either crowding with close physical contact or an uncrowded environment. Behavioural, physiological and self reported measures (e.g. Lykken Activity Preference scale, Nowless Mood Adjective Checklist) strongly support the hypothesis. Crowded subjects were more physiologically aroused, rated by confederate to be more tense, uncomfortable and annoyed; and reported more negative affect than uncrowded subjects (Epstein, Woolfolk & Lehrer, 1981).

Baum, Calesnick Davis & Gatchel (1982) found that different coping styles affect experience of crowding. Better coping styles (positive interactions with sharers and neighbours) decrease experience of crowding while less coping with situations (negative interactions with neighbours) increases experiences of crowding.

Hughey (1983) studied the effect of living accommodations of high proximity on self perceptions of college students residing in university housing facilities. 150 occupants of university residence hall rooms accommodating 3 students in space designed for only 2 were compared with 150 selected occupants of rooms accommodating 2 students in space designed for 2 students. All responded to the Social Readjustment Rating Scale and the Self perception assessment. Responses by occupants of triple occupancy rooms had lower mean perception scores than the other subjects and also exhibited impaired social, personal, emotional and intellectual functioning.

Zeedyk & Smith (1983) studied the effect of crowding on individuals' hostility, anxiety and desire for social interaction. Subjects were 22 undergraduates who participated in an experiment conducted as part of a required field experience in a disaster and civil defence course. The field experience required that subjects remained in a sheltered area continuously for 18 hours. 16 subjects were randomly assigned to a 12" by 18" space in a crowded conditions. Hostility and anxiety were measured for five separate times using the Affect Adjective Checklist. Crowded subjects were significantly more hostile than uncrowded subjects. Subjects in the high density conditions also interacted less with others, enjoyed interactions less and felt more boredom than subjects in low density conditions.
Higher incidence of mental ailments in the residents of densely populated areas as compared to low density areas comprising of middle class families were observed by Preet Kamal & Jain (1984).

Jain & Misra, (1986) conducted an experimental study to examine the effects of resources and density on feeling of crowding and personal space, in which high vs low population density and adequate vs scarce resources were manipulated in a 2x2 factorial design. The dependent measures were feeling of crowding and personal space. Two separate experiments were conducted to verify the effects under social as well as spatial density conditions. In each experimental situation the participants worked on an individual task comparing the copies of few geometrical designs. After completion of the tasks, measures of the personal space and perception of crowding were administered. The results showed that density and resources significantly influenced the feeling of crowding.

Ruback, Carr & Hopper (1986) conducted two studies to investigate the effects of personal control, living accommodation evaluations and physical symptoms on two men’s prisons, one housing 181 inmates and other housing 623 inmates. Results indicate that high social density (no. of prisoners) were related to more physical pathology and feeling of more crowding while subjects who lived in single rooms liked their accommodation more and perceived higher control and experienced less stress.

Burchill and Stiles (1988) studied the interactions of depressed college students with their roommates, in which the interaction of 15 depressed and 15 nondepressed college students with the roommates were examined. On questionnaires, roommates of depressed students indicated more rejection, dislike and avoidance than of the nondepressed students.

The effect of population density on social interaction and health of the inhabitant was studied by Jain & Sinha (1989). It was hypothesized that living in higher storey and greater inside density was associated with ill health and lesser social interactions. Equal socioeconomic status residents, 32 to 40 years age living in multi storeyed building served as subjects. C.M.I. Health Questionnaire, Social Interaction Questionnaire and personal data sheet were used. The results indicated that high density conditions were conducive to the development of ill health and poor social interaction with others.

Prakashvati & Sinha (1989) investigated that poor architectural designs create a feeling of crowding stress and a need of larger personal space.

Sinha & Mukherjee (1989) studied the effect of inside social density on personal space of the subjects having different space sharing experiences (i.e. double, triple and multiple seated rooms). 120 females were selected on the basis of their perceived cooperation scores (i.e. high vs low cooperation) and space sharing experiences. Subjects were administered Interpersonal Distance Scale by (Duke & Noldick, 1972) and Perceived Cooperation Questionnaire. Results indicated that (a) double seated high cooperative subjects required least
personal space while low cooperative subjects of triple seated rooms required maximum personal space as compared to the other groups. (b) Increased cooperation reduced the interpersonal distance of the subjects. In another study Sinha & Mukherjee (1989) investigated the mediating role of perceived cooperation on tolerance for crowding and attitude towards room environment among roommates of double, triple and multiple seated rooms in Women's hostel, when the available space was almost the same for all. 120 subjects were administered Desor's crowding Perception test and Environmental Judgement Scale. Results indicated that (a) subjects showed less crowding tolerance and negative attitude towards the room environment with the increasing number of sharers in the room. (b) Higher cooperation among roommates was found to be associated with lesser feeling of crowding and positive attitude towards the room environment.

Sinha, Mukherjee & Prakashvati (1990) tested the hypothesis that the different spatial orientations (i.e. close vs open housing conditions, side vs centre settings of furniture) would differentially influence the perception of crowding scores of 6 to 9 years and 16 to 20 years old subjects. 80 subjects (40 from each group) were individually administered Desor's perception of crowding test. Results indicated that:-

a) 6 to 9 years old subjects felt less crowding than 16 to 20 years old subjects.

b) In open space conditions subjects felt less crowding than in closed space conditions.

c) Centre furniture setting was related to the feeling of more crowding than side furniture settings.

It is evident from the survey of related literature that there is a dearth of studies in India in the field of social and spatial density, personal space and the feeling of crowding and its related phenomena. It seems that there is ample scope for the investigations in this field in Indian context where the environmental problems (e.g. social and spatial density and crowding etc.) are taking an acute form affecting physical as well as mental health of the people in general.