



Privacy Control as a Function of Personal Space In Single-Family Homes in Jordan

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Abstract

Understanding the relationship between people and the built environment requires understanding of the relationship between human behavior and physical settings. To further verify this notion, this study attempts to investigate privacy control as an effect of personal space expressed by quality and quantity of bedroom space in single-family homes. Face-to-face structured interviews were conducted to elicit the data. The location of the study was Daheyat Al-Ferdous community, Fuhais, Jordan. Respondents were requested to record the presence of certain physical components in their personal bedroom space that may potentially increase their feel of privacy control in general. Results indicated that some physical components such as a kitchenette, a TV, and an audio station in the bedroom were important. Additional factors that affected privacy control feel included shape of the room, as square rooms provided more sense of control. In addition, smaller bedroom area increased feel of control, and a corridor before bedroom was seen as a predictor of privacy control.

Key Words: privacy control, physical control, personal space, bedroom space, single-family homes, housing, Jordan

Introduction

The built environment forms a behavioral setting that consists of human behavior and physical structure composed of surfaces related to each other (Lang, 1987). It reflects cultural and socio-cultural components (Richardson, 1989). Understanding the norms associated with a particular setting includes analysis of the physical environment, in addition to psychological and social content (Lang, 1987). People use space as a vehicle of communication to regulate their contact with others (Pearson and Richards, 1997;

Stokols and Altman, 1987). Space is the first real attempt by people to possess the environment, and its typical dimensions and form vary from culture to culture (Arreola, 1988; Theil et al, 1986). Lack of control over personal space may create lack of privacy and may negatively affect regulation of social interaction. Taylor (1988), Lang (1987) and Stokols and Altman (1987) state that privacy control can be enhanced through territorial markers and clear boundaries.

Home represents a connection between physical settings and human behavior (Stoner, 1997). Home is defined

as a shelter reflecting cultural interpretation and cultural phenomenon with its two components: form and spatial arrangements (Mann, 1990; Greir, 1988; Tognoli, 1987; Rapoport, 1969). Home is a cultural unit of space entailing activities that take place and vary in their meaning and use as core rituals (Rapoport, 1991). Social values are considered as a form of cultural meaning acquired through socialization and specification where interaction takes place and how important it is (Rapoport, 1969). Activities are abstract but need a certain amount of physical space to be performed because they are performed by a physical body which occupies space in different positions that requests certain furniture and free spaces at the same time. Some activities may overlap and share space but others may not (Dybkjar, 1996). People from different cultures mold the environment differently so as to fit their values and needs (Rapoport, 1969; 1985; Borchert, 1979; Brown, 1987).

This study attempts to explore the relationship between privacy control and personal space by evaluating the presence of certain physical components in personal bedroom space that may satisfy the overall feel of privacy control at Al-Ferdous Community in Fuhais close to Amman. The study's outcomes will probably raise issues that can be considered by architects to enhance the design qualities of bedroom space.

Background

Privacy

The concept of privacy is fundamental to environment behavior and to culture/

environment relationships (Altman and Chemers 1980). Privacy is central to our lives and the need for it and personal space is universal as it fulfills basic needs for security, affiliation, and esteem (Hall, 1959; Altman, 1975). Privacy is a dynamic process of changing boundary between individuals: It involves selective control, opening and closing of self to others and freedom of choice (Altman, 1976). It can be defined as a selective control to access self and others (Altman, 1975) as well as the ability to control interactions. It is the ability to control the overflow of physical, perceptual, and sensory information (Rapoport, 1991). Selective control is determined by cultural references with a choice of time, pattern, and persons involved (Lang, 1987).

Further, privacy is the ability to communicate certain messages through personalization (Rapoport, 1985). Functions of privacy include the regulation of interpersonal interaction, self- other definition, and self-identity (Altman, 1976). The ability to regulate and control social contact when desired is more important than the inclusion or exclusion of others (Altman and Chemers 1980; Altman, 1975). Privacy regulation is the use of different privacy mechanisms to achieve a balance between the ideal, the desired, and the achieved privacy. This process may involve some costs incurred to regulate the boundary process; these costs can be physical or psychological (stress, tension, and anxiety). Costs result from not achieving a boundary control or from the need for enormous personal and behavioral resources (Altman, 1976). In extreme cases, the situation extends to more

isolation than is desired or to unreasonable intrusion that denies the individuals sense of self (Al-Homoud and Tassinary, 2004; Veitch and Arkkelin, 1995; Stokols and Altman, 1987; Altman and Chemers 1980; Altman, 1976; Altman, 1975).

Mechanisms of control are verbal and Para verbal behaviors, which include personal space, territorial behavior, and cultural responses (Stokols and Altman, 1987; Altman and Chemers 1980; Altman, 1975). People implement their desired level of privacy using environmental behaviors and cultural norms. Environmental behaviors include physical control in the form of physical features and devices, and territorial markers (Altman, 1976). Privacy functions differently for different cultures (Altman and Chemers 1980; Altman, 1976; 1975). Different cultures have a variety of customs, rules and norms to communicate needs for openness or closeness. They use various mechanisms to regulate contact with others (Lang, 1987; Altman and Chemers 1980; Altman, 1976; 1975).

Privacy generally has four states: solitude, intimacy, anonymity, and reserve. Reserve, when in private domains, means to limit communication about self and others (Westin, 1967). However, it is easier to maintain privacy physically in primary domains (home) than in secondary or public domains (Veitch and Arkkelin, 1995). Similarly, it is easier to defend against intrusion in primary domains than in other domains (Alnowaiser, 1996). Attaining privacy at the primary domain is made possible by personal space (Altman, 1975).

Personal Space

Personal space is the effective zone of the individual. It is seen as the interpersonal boundary regulation mechanism for self-protection and communication (Veitch and Arkkelin, 1995; McAndrew, 1993; Bell et al, 2000). It is not necessarily spherical in shape, but it is possibly a bubble (Sommer, 1969; Hall, 1966). In order to regulate their desired level of interaction, people increase or decrease the physical distance between themselves and others using personal space as a control mechanism. Personal space is an invisible boundary surrounding an individual's body that must not be penetrated by others. It is the dynamic mechanism people use to regulate their privacy and their contact with others. Personal space can be described in terms of spatial zones: intimate, personal, social, and public zones (Hall, 1966). These zones represent levels of interpersonal contact with others, but their use varies with settings. Visual and auditory cues function as communication vehicles in these zones (Altman and Chemers, 1980; Altman, 1975). Personal space is achieved by a compromise between personal distance and social distance (Sommer, 1969; Hall, 1966).

Generally, people choose suburban residential settings to attain more privacy at the group level by being distant from each other because more land is available. In addition, large lot size provides more privatized behaviors of higher prestige areas (Haggerty, 1982). Such settings provide more spatial hierarchies and domains, and, therefore, provide possible control of personal space, especially in the bedroom where more choices in design and space allocation are available.

Bedrooms are prone to territorial and privacy conflicts because of their degree of specialization and the type of activities that occur in them (Stoner, 1997).

Other variables

Factors such as individual personality, socioeconomic status, gender, social roles, and age impact privacy control (Taylor, Gottfredson, and Brower, 1984; Altman and Chemers, 1980; Altman, 1976; Rapoport, 1969). For example, personal space requirements vary with gender: males require more personal space than females (Stokols and Altman, 1987). Proximity interferes with social interaction because it becomes a source of stress, an intrusion of privacy, and lack of control (Taylor, 1988; Kuper, 1976). Appleyard and Lintell (1972) and Hunter (1979) indicate that residential setting with families, especially ones with children, have more acquaintances and social contacts than those with younger or older population. Children promote casual socializing among neighbors, but their presence may decrease perceived privacy (Valadez et al., 1994; Appleyard and Lintell, 1972). People feel less attached to their neighborhoods as a result of moving and, thus, become less rooted to and less satisfied with their place of residence (Stokols and Altman, 1987). Crime alters community bonds and imposes restrictions on territorial functioning (Taylor et al., 1984). High income reflects higher control. Higher income and younger age are associated with stronger territorial functioning (informal social control). Income is represented by home ownership (Altman and Chemers, 1980; Rapoport 1969; Taylor, 1988). Ownership increases

neighborhood identity and territorial responsibility (Greenberg and Rohe, 1984; Perkins et al., 1983; Taylor et al., 1984).

Conceptual Framework of the Study

Based on the previous literature, this study builds its conceptual framework on the following assumptions:

1. Privacy control is control over interaction and flow of information. To reach the desired level of privacy control, people use verbal and Para verbal behaviors as mechanisms within their cultural norms.
2. Personal space is the availability for an individual of an effective zone represented by the quantity and quality of bedroom space satisfying by physical distance from others and other physical components.

Hypothesis

Privacy control is a function of personal space (represented in the quantity and quality of physical components of bedroom space in single-family home). Such components positively affect privacy control individually and collectively. Physical components include access and transition, shape, floor area, view, availability of services, spatial arrangements, and bedroom location and position.

Research Setting

Al-Ferdous is a housing setting, located on a hilly land that makes it territorial and defensible without physical gates; rather, this characteristic makes it seem socially gated by its own residents. It is a suburban non-gated community located at Fuhais

city west of Amman, the capital city of Jordan. The community seems homogenous and peaceful. It is considered to be high-income private neighborhood of single-family homes. The setting consists of two major residential zones. Each single-family home has access from the front street. Streets are accessed by houses from both sides of the street and allow through traffic. Houses have a front yard and a backyard. These spatial hierarchies work as transitional spaces from the private house domain to the street domain. Phenomenally, streets seem like semi-private domains that do not encourage access.

Methods

The research methodology included a structured questionnaire, which was administered in the context of face-to-face structured and formal interviews. The setting of the interview was the living room of the subject's house at Al-Ferdous Housing, Fuhais, Jordan.

Subjects

The study population was all subjects living in Al-Ferdous Housing. The final sample consisted of (120) subjects selected randomly from the clustered single-family homes. Both males and females participated in the survey. Subjects' participation in the study was voluntary.

Instrument Design

Face-to-face structured interviews were conducted at the selected setting, using a written structured questionnaire to collect

information about perception of territorial control, physical control and status. An informed consent form was included. Written material was used to collect data related to the dependent and independent measures.

Dependent and Independent Measures

The dependent variable, privacy control, was measured on a 5-point Likert-scale: (1) represented the highest perceived control of place, and (5) represented the lowest perceived control of place. The initial scale consisted of thirty statements, of which only 14 loaded 0.5 and above, and those 14 statements used in the present study heavily focused on bedroom space and its spatial and physical components. The initial scale was tested in a pilot study of 100 students from Jordan University of Science and Technology. The thirty statements described perceived control in indoors-residential spaces of single-family homes.

The independent measure, personal space, was derived from reviewed literature and represented in the quantity and quality of bedroom space in single-family home. The developed personal space model included the following components represented in bedroom space: presence of physical variables like access (entrance) and transition (corridor), room shape, room floor area, view (openings type), availability of services (bathroom, dressing room, office space, sitting area, kitchenette, TV and Audio, computer, and furniture), spatial arrangements (connection to other rooms), and floor location and elevation (position) of bedroom.

Other variables that may affect privacy control were derived from

reviewed literature and were tested for potential relationship. They included the following: neighborhood characteristics (perceived child safety, sociability, satisfaction, identity and personalization, and neighborhood selection; cultural factors (background and homogeneity); and individual differences (gender, age, educational level, marital status, family lifecycle, employment, home ownership, house type, children, income, past residential experiences, length of residency, and house cost).

Procedure

Three trained assistants administered the study at the selected setting. After signing the informed consent form, subjects filled out the questionnaire about privacy control and personal space components and other variables. Upon completion, they were thanked and debriefed.

Discussion and analysis

The independent variable ‘privacy control’ was re-coded by the expected theoretical mean for the random variable; it was the sum of trials of responses (which ranged from one to five) over the number of statements (fourteen in the present study).

Sample Characteristics

In the present study 67% of the subjects were males, and the age group of 40 years and above composed 53% of the sample. People of undergraduate education and above composed about 60% of the sample. Approximately 77% of the sample were employed, 77% retired, and 16% unemployed. Almost 97% of the

subjects were married. Family lifecycle indicated that 10% of the sample had families without children, and 90% had children of different ages. Number of female children ranged from 1- 6 children, and that of male children ranged from 1-3. About 24% of the subjects reported that other members of the extended family lived in the same house. Families that lived in the neighborhood for more than 10 years composed 23% of the sample. About 93% of the families owned their homes. In terms of income, 87% reported that they had middle income, 10% reported having high income, and about 3% said they had limited income. About 93% of the subjects reported being satisfied with house costs. Approximately 60% of the subjects reported living in a single-family home type (Villa). About 53% of the sample reported an urban past residential experience, 37% suburban one, and 10% countryside past.

Privacy Control as a Function of Personal Space

To assess the hypothesis that privacy control is a function of personal space, One-Way Analyses of Variance (ANOVA) were conducted and are reported as follows:

Mean scores for privacy control were significant for the following personal space components:

1. Floor Area of Bedroom: The test for statistical differences in Table I demonstrates a significant effect for floor area on scores of privacy control $\{F(2, 119) = 5.251\}$. Means scores in Table 2 show that small room areas

of 15-20) m² have the highest privacy control score (M = 4.302), while areas of (20-25 m²) have the lowest privacy control score (M = 4.110). This suggests that small areas increase intimacy and control over personal space, as indicated by Sommer (1969) and Hall (1966).

2. Shape of Room: The test for statistical differences in Table 1 demonstrates a significant effect for room shape on scores of privacy control {F(1, 119) = 4.967}. Means scores in Table 2 show that square rooms have higher privacy control score (M = 4.292) than rectangular room shapes (M = 4.164), suggesting that square shape gives a feeling of intimacy and stability while rectangular shapes give a sense of movement and direction. Therefore, more sense of privacy is attained when static shapes are present as they give a sense of enclosure and less interaction with the outside world, making it more a personal rather than a social zone, as expressed by Hall (1966).
3. Corridor before Bedroom: The test for statistical differences in Table I demonstrates a significant effect for a corridor leading to bedroom on scores of privacy control {F(1, 119) = 5.192}. Means scores in Table 2 show that corridors before bedrooms have higher privacy control score (M = 4.238) than rooms without corridors (M = 4.083). This suggests that transitional spaces are social distances that give more control when available, as indicated by Al-Homoud and Tassinary (2004), Sommer (1969), and Hall (1966).
4. TV in Bedroom: The test for statistical differences in Table I demonstrates a significant effect for presence of TV in bedroom on scores of privacy control {F(1, 119) = 4.116}. Means scores in Table 2 show that TVs in bedrooms have higher privacy control score (M = 4.259) than rooms without TVs (M = 4.148). This suggests that provision of entertainment devices in bedrooms increases degree of specialization and private activities that occur in them, as indicated by Stoner (1997).
5. Audio Station in Bedroom: The test for statistical differences in Table 1 demonstrates a significant effect for presence of Audio station in bedroom on scores of privacy control {F(1, 119) = 4.024}. Means scores in Table 2 show that Audio Stations in the bedroom have higher privacy control score (M = 4.262) than rooms without this facility (M = 4.152). This again suggests that entertainment services in bedrooms increase degree of specialization and private activities that occur in them, as indicated by Stoner (1997).
6. Kitchenette in Bedroom: The test for statistical differences in Table 1 demonstrates a significant effect for presence of kitchenette on scores of privacy control {F(1, 119) = 3.967}. Means scores in Table 2 show that Kitchenettes in bedrooms have higher privacy control score (M = 4.500) than rooms without them (M =

4.197), suggesting that having more privacy is based on having more choices at bedrooms, as indicated by Stoner (1997).

A further analytical step included the above six significant components simultaneously, and a General Linear Model for Univariate was conducted.

Table 1: ANOVA results for Scores of Privacy Control in Personal Space Components

Personal Space Components	Sum of Squares	df	Mean Square	F	Sig
Floor Area of Bedroom	0.899	2	0.449	5.251	.007
Residual	10.013	117	0.085		
Shape of Room	0.441	1	0.441	4.967	.028
Residual	10.471	118	0.089		
Corridor before Bedroom	0.460	1	0.460	5.192	.024
Residual	10.452	118	0.089		
T V in Bedroom	0.368	1	0.368	4.116	.045
Residual	10.544	118	0.089		
Audio in Bedroom	0.360	1	0.360	4.024	.047
Residual	10.552	118	0.089		
Kitchenette in Bedroom	0.355	1	0.355	3.967	.049
Residual	10.557	118	0.089		
Location of Bedrooml	0.589	3	0.196	2.205	.091
Residual	10.323	116	0.089		
Position of Bedroom	0.420	2	0.210	2.343	.100
Residual	10.492	117	0.090		
Computer in Bedroom	0.207	1	0.207	2.281	.134
Residual	10.705	118	0.091		
Bathroom	0.202	1	0.202	2.227	.138
Residual	10.710	118	0.091		
Openings in Bedroom	0.322	2	0.161	1.781	.173
Residual	10.590	117	0.091		
Bedroom Entrance	0.147	1	0.147	1.611	.207
Residual	10.765	118	0.091		
Sitting Area in Bedroom	0.134	1	0.134	1.464	.229
Residual	10.779	118	0.091		
Dressing Room	0.055	1	0.055	0.599	.441
Residual	10.857	118	0.092		
Connection to other Bedrooms	0.248	3	0.083	0.900	.443
Residual	10.664	116	0.092		
Furniture in Bedroom	0.033	1	0.033	0.362	.549
Residual	10.879	118	0.092		
Office in Bedroom	0.0006	1	0.0007	0.007	.932
Residual	10.912	118	0.093		

Table 2: Means and Standard Deviations for Scores of Privacy Control

Components of Personal Space	N	Mean	Std. Deviation	Std. Error
Floor Area of bedroom				
(15-20) m ²	36	4.302	0.207	0.035
(20-25) m ²	52	4.110	0.307	0.043
(25-30) m ²	32	4.259	0.346	0.061
Shape of bedroom				
Rectangular	80	4.164	0.225	0.025
square	40	4.293	0.407	0.064
Corridor before Bedroom				
No	24	4.083	0.236	0.048
Yes	96	4.238	0.311	0.032
TV in Bedroom				
No	56	4.148	0.201	0.027
Yes	64	4.259	0.363	0.045
Audio in Bedroom				
No	60	4.125	0.310	0.040
Yes	60	4.262	0.288	0.037
Kitchenette in Bedroom				
No	116	4.197	0.303	0.028
Yes	4	4.500	0.000	0.000
Location of bedroom				
Downstairs without patio	32	4.196	0.340	0.060
Downstairs with patio	16	4.125	0.263	0.066
Upstairs without balcony	40	4.300	0.339	0.054
Upstairs with balcony	32	4.143	0.199	0.035
Position of bedroom				
Front Elevation	24	4.262	0.187	0.038
Side Elevation	28	4.102	0.272	0.051
Back Elevation	68	4.231	0.339	0.041
Computer in Bedroom				
No	100	4.226	0.327	0.033
Yes	20	4.114	0.088	0.020
Bathroom				
Inside the bedroom	84	4.180	0.302	0.033
Outside the bedroom	36	4.270	0.299	0.050
Opening in Bedroom				
Have one small window	16	4.089	0.109	0.027
Have one big patio	64	4.205	0.299	0.037
Have more than one	40	4.257	0.350	0.055
Bedroom entrance				
Straight Entrance	48	4.250	0.254	0.037
Through a Corridor	72	4.179	0.330	0.039

Sitting area in bedroom				
No	88	4.227	0.288	0.031
Yes	32	4.152	0.339	0.060
Dressing area				
Within the room	108	4.214	0.316	0.030
Within a separation	12	4.1430	0.122	0.035
Connection to other Bedrooms				
other Bedrooms	60	4.1952	0.275	0.036
The Bedroom	40	4.2286	0.388	0.061
The office room	8	4.0714	0.076	0.027
The living room	12	4.2857	0.161	0.047
Furniture in Bedroom				
Simple	60	4.2238	0.272	0.035
High Style	60	4.1905	0.332	0.043
Office-room in Bedroom				
No	108	4.2063	0.370	0.030
Yes	12	4.2143	0.244	0.070

Privacy control is affected by kitchenette in bedroom, TV in bedroom, room shape, audio in bedroom, bedroom floor area, and corridor before bedroom, ordered from the most to the least effective, see Table 3. Interaction between the components was registered in the following: (1) TV and Audio in Bedroom have significant interaction { $F = 27.072$ };

(2) Bedroom Floor Area and Bedroom Shape have significant interaction ($F = 21.230$); (3) Audio in Bedroom and Bedroom Shape have significant interaction ($F = 7.159$). See Table 3.

It is easier to maintain privacy physically in primary domains (home) than in secondary or public domains (Veitch and Arkkelin, 1995). As

Table 3: UNIVARIATE Model of the Significant Personal Space Components

Source	Sum of Squares	df	Mean Squares	F	Sig
Corrected Model	7.980*	19	0.420	14.325	.000
Intercept	2124.006	1	2124.006	72442.900	.000
Corridor before Bedroom	0.032	1	0.032	1.106	.296
Kitchenette in Bedroom	0.827	1	0.827	28.190	.000
TV in Bedroom	0.747	1	0.747	25.483	.000
Audio in Bedroom	0.488	1	0.488	16.648	.000
Bedroom Floor Area	0.363	2	0.181	6.183	.003
Bedroom Shape	0.583	1	0.583	19.899	.000
TV in Bedroom + Audio in Bedroom	0.794	1	0.794	27.072	.000
Audio in Bedroom + Bedroom Shape	0.210	1	0.21	7.159	.009
Bedroom Floor Area + Bedroom Shape	1.245	2	0.622	21.230	.000

*R Squared = 0.731 (Adjusted R Squared = .680)

mentioned above, privacy generally has four states: solitude, intimacy, anonymity, and reserve (Westin, 1967). Attaining privacy at the primary domain is made possible by allocating personal space to bedroom space and offering more choices in this personal zone to arrive to the solitude state of privacy that offers a sense of privacy control. When shape and floor area are of intimate scale along with availability of entertainment services such TV and Audio stations, sense of privacy increases. Allocating small transitional space before bedroom, represented by the presence of a corridor, also increases sense of privacy control as indicated by

Al-Homoud and Tassinary (2004) who maintain that transitional spaces are necessary in order to regulate interactions with others.

Further Analysis of Variance (ANOVA) for the relationship between privacy control and neighborhood characteristics was conducted. The outcome suggests a significant relationship with only the following two variables: (1) Neighborhood Selection { (1, 119) = 12.752}, see Table 4: residents who are forced to live in the neighborhood have higher sense of privacy control (M 4.714) than those who have a choice to live in the neighborhood

Table 4: ANOVA Results for Scores of Privacy Control in Neighborhood Characteristics

Neighborhood Characteristics	Sum of Square	df	Mean Square	F	Sig
Neighborhood Safety	0.016	1	0.016	0.170	.680
Residual	10.897	118	0.092		
Stranger Allocation	0.076	1	0.076	0.830	.364
Residual	10.836	118	0.092		
Child Safetv	0.029	1	0.029	0.312	.578
Residual	10.884	118	0.092		
Cultural Variability	0.053	1	0.053	0.575	.450
Residual	10.859	118	0.092		
Sources of Support	0.150	1	0.150	1.645	.202
Residual	10.762	118	0.091		
Shared Values	0.150	1	0.150	1.645	.202
Residual	10.762	118	0.091		
Satisfaction with Building Materials	0.0600	1	0.060	0.652	.421
Residual	10.852	118	0.091		
Choice of Moving Out	0.040	1	0.040	0.432	.512
Residual	10.872	118	0.092		
House Reflects Personality	0.178	2	0.089	0.968	.383
Residual	10.735	117	0.092		
My House is Personalized	0.178	2	0.089	0.968	.383
Residual	10.735	117	0.092		
Neighborhood Selection	1.064	1	1.064	12.752	.001
Residual	9.848	118	0.084		
Neighborhood represents Identity	0.810	2	0.405	4.693	.011
Residual	10.102	117	0.086		

Table 5: Means and Standard Deviations for Scores of Privacy Control in Neighborhood Characteristics

Significant Components	N	Mean	Std. Deviation	Std. Error
Neighborhood Selection				
By Choice	116	4.190	0.293	0.027
By Force	4	4.714	0.000	0.000
Neighborhood represents Identity				
Yes	52	4.264	0.338	0.047
No	32	4.071	0.174	0.031
Somehow	36	4.246	0.310	0.052

($M = 4.190$), see Table 5. (2) Neighborhood represents Identity $\{F(2, 119) = 4.693\}$, see Table 4: residents who feel that neighborhood represents their identity have higher sense of privacy control ($M = 4.264$) than those who feel that neighborhood does not represents their identity ($M = 4.071$), see Table 5. This supports Haggerty (1982) that people choose suburban residential settings to attain more privacy.

Further Analysis of Variance (ANOVA) for the relationship between privacy control and socio-economic factors was conducted. The outcome suggests a significant relationship with the following: (1) Children in Family $\{F(1, 119) = 35.542\}$; Number of Male Children $\{F(3, 119) = 13.465\}$; Number of Female Children $\{F(6, 119) = 12.852\}$; Home Ownership $\{F(1, 119) = 10.934\}$; Age $\{F(3, 119) = 10.601\}$; Income $\{F(2, 119) = 9.944\}$; Family Lifecycle $\{F(3, 119) = 5.530\}$; Family Members Living Along $\{F(1, 119) = 5.481\}$; House Type $\{F(1, 119) = 3.974\}$; and Marital status $\{F(1, 119) = 3.967\}$, arranged from the most to the least influential, see Table 6.

This suggests that no children provides more privacy control ($M =$

4.750) than their existence ($M = 4.168$), but that number of children does not reflect on privacy control; it is presented differently by different people, see Table 7. Young residents tend to have higher sense of control ($M = 4.619$), probably because they have no or less children than older age groups, see Table 7. This finding supports the fact that age impacts privacy control, as indicated by Taylor et al. (1984), Altman and Chemers (1980), Altman (1976), and Rapoport (1969). Regarding marital status, results indicate that single people feel more privacy control ($M = 4.500$) than those who are married ($M = 4.197$), see Table 7. Moreover, families of ages under 50 and without children indicate higher sense of privacy control ($M = 4.500$) than those of other lifecycle groups, see Table 7. Families with children tend to have higher social contacts and, when interaction increases, perceived privacy decreases, as indicated by Appleyard and Lintell (1972), Hunter (1979), and Valadez et al., 1994.

In terms of homeownership, residents who own their home have higher sense of privacy control ($M = 4.336$) than those who do not ($M = 4.184$). see Table 7.

Table 6: ANOVA Results for Scores of Privacy Control in Socio-economic Factors

Socio-Economic Factors	Sum of Squares	df	Mean Square	F	Sig.
Children in the Family	2.526	1	2.526	35.542	.000
Residual	8.386	118	0.071		
Number of Male Children	2.819	3	0.940	13.465	.000
Residual	8.094	116	0.070		
Number of Female Children	4.426	6	0.738	12.852	.000
Residual	6.486	113	0.057		
Home Ownership	0.925	1	0.925	10.934	.001
Residual	9.987	118	0.085		
Age	2.348	3	0.783	10.601	.000
Residual	8.564	116	0.074		
Income Level	1.585	2	0.793	9.944	.000
Residual	9.327	117	0.080		
Family lifecycle	1.365	3	0.455	5.530	.001
Residual	9.547	116	0.082		
Family members living along	0.484	1	0.484	5.481	.021
Residual	10.428	118	0.088		
House Type	0.356	1	0.356	3.974	.049
Residual	10.557	118	0.089		
Marital Status	0.355	1	0.355	3.967	.049
Residual	10.557	118	0.089		
House Value	0.296	1	0.296	3.286	.072
Residual	10.617	118	0.090		
Previous Residential Experience	0.381	2	0.190	2.114	.125
Residual	10.532	117	0.090		
Length of Residency	0.498	3	0.166	1.848	.142
Residual	10.414	116	0.090		
Gender	0.110	1	0.110	1.204	.275
Residual	10.802	118	0.092		
Employment	0.193	2	0.097	1.054	.352
Residual	10.719	117	0.092		
Education	0.106	3	0.035	0.379	.769
Residual	10.806	116	0.093		

Greenberg and Robe (1984), Perkins et al. (1983), and Taylor et al. (1984) indicate that ownership increases territorial responsibility. This issue is a reflection of income, as higher income residents have higher sense of privacy control ($M = 4.348$) than lower income groups, see Table 7. Income association with control supports Altman and Chemers (1980), Rapoport (1969), and

Taylor (1988). However, those who live in semi-villa type of house indicate a higher sense of privacy control ($M = 4.274$) than those who live in a villa house type ($M = 4.163$). see Table 7. Finally, residents with other family members staying with them experience more privacy control ($M = 4.313$) than those who have no other members living in the same house ($M = 4.169$), see Table 7

Table 7: Means and Standard Deviations for Scores of Privacy Control in Socio-economic Factors

Socio-economic Factors	N	Mean	Std. Deviation	Std. Error
Children in the Family				
No	8	4.750	0.267	0.094
Ycs	112	4.169	0.267	0.025
Home ownershipHome Ownership				
No	8	4.536	0.496	0.176
Ycs	112	4.184	0.273	0.026
Age				
20-30 year	12	4.619	0.415	0.120
30-39 year	44	4.169	0.273	0.041
40-49 year	24	4.202	0.136	0.028
More that or equal to 50	40	4.129	0.280	0.044
Income Level				
High	12	4.548	0.367	0.106
Medium	104	4.173	0.276	0.027
Limited	4	4.071	0.000	0.000
Family lifecycle				
Under 50 and no children	12	4.500	0.426	0.123
Any age and youngest less than5	40	4.129	0.252	0.040
Any age and youngest of 5-18	48	4.179	0.277	0.040
Any age and youngest is more than 15	20	4.257	0.277	0.062
Family Members Living Along				
No	88	4.169	0.240	0.026
Yes	32	4.313	0.418	0.074
House Type				
Villa	72	4.163	0.306	0.036
Semi Villa	48	4.274	0.289	0.042
Marital Status				
Married	116	4.197	0.303	0.028
Not Married	4	4.500	0.000	0.000

Conclusions

The built environment reflects cultural and socio-cultural components. Understanding the norms associated with a particular setting includes the analysis of the physical environment as well as its psychological and social contents. People use space as a vehicle of communication to regulate their contact with others.

Home is a cultural unit of space with certain activities taking place in it. Activities are abstract but need certain amount of physical space to be carried out because they are performed by the body. People of different cultures mold the environment differently so as to fit their values and needs. The ability to regulate and control social contact when desired is more important than the

inclusion or exclusion of others. Mechanisms of control are verbal and Para verbal behaviors, which include personal space. Personal space is the effective zone of the individual. It is achieved by a compromise between personal distance and social distance. Lack of control over personal space may create lack of privacy and may negatively affect regulation of social interaction. People choose suburban residential settings to attain more privacy at the group level as such settings keep them at a distance from each other.

The present study has explored the relationship between privacy control and personal space by evaluating the presence of certain physical components in personal bedroom space that may influence privacy control at Al-Ferdous Suburban Community in Fuhais. The research hypothesis states that privacy control is a function of personal space represented in quantity and quality of physical components of bedrooms space in single-family home. The research methodology included a structured questionnaire, administered in the context of face-to-face structured and formal interviews.

Families who lived in the neighborhood for more than 10 years composed 23% of the sample. About 93% of the families owned their homes. Almost 87% of the subjects were of middle income, and 10% of high income. About 93% of the subjects reported their satisfaction with house costs. Approximately two-thirds of the subjects lived in a single-family (Villa) home type. About half of the sample's past residential experience was urban and about 10% had a countryside experience. One-Way

Analyses of Variance (ANOVA) were conducted to test the hypothesis that privacy control is a function of personal space represented by quality and quantity of physical components.

It was found that such components of personal physical space as kitchenette, TV and audio in bedroom, bedroom shape, bedroom floor area, and corridor before bedroom are predictors of privacy control. Square rooms provide more sense of control, and smaller floor bedroom area increase feel of control. Small area increases intimacy and, therefore, control over personal space. Square shape usually gives more of a feeling of intimacy and stability than rectangular shapes which give a sense of movement and direction. Transitional spaces are social distances that offer more control. Provision of entertainment and services in bedroom space increases degree of specialization, as indicated by Stoner (1997), through having more privacy based on having more choices. Attaining privacy in the primary domain is made possible by allocating personal space to bedroom space and offering more choices in this personal zone to arrive at the solitude state of privacy that offers a sense of privacy control.

In addition, other factors such as neighborhood selection and neighborhood representation of residents identity are predictors of privacy control. Haggerty (1982) suggested that people choose suburban residential settings to attain more privacy. Additional individual characteristics that seem to influence feel of privacy control include children in the family, number of male and female children, home ownership, age, income, family lifecycle, presence of extended

family members in the house, house type, and marital status. No children provides more privacy control, families of age group under 50 and without children indicate a higher sense of privacy control than those of other lifecycle groups. Families with children tend to have higher social contacts and, when interaction increases, perceived privacy decreases, as indicated by Appleyard and Lintell (1972), Hunter (1979), and Valadez et al., 1994. In addition, young residents tend to have higher sense of control than older age groups, as indicated by Taylor et al. (1984), Altman and Chemers (1980), Altman (1976), and Rapoport (1969). Regarding marital status, single people feel more privacy control than married persons do.

In terms of homeownership, residents who own their home have a higher sense of privacy control than those who do not, which supports Greenberg and Rohe (1984), Perkins et al. (1983), and Taylor et al. (1984). Also, higher income residents have a higher sense of privacy control than lower income level groups, which supports studies by Altman and Chemers (1980), Rapoport (1969), and Taylor (1988).

Recommendations and Implications

In order to increase residents' sense of privacy control in single-family homes, we need to look closely at the physical components of personal bedroom space. Designers need to pay more attention to spatial arrangements by providing transitional zone like a sub-corridor before the bedroom, and planning appropriate floor area and room shape.

In addition, they may design more space to provide services within this personal space such as a kitchenette and TV and Audio stations. Architects should work on enhancing the design qualities of the bedroom space of single-family homes in terms of quantity and quality if more privacy control is to be provided.

The present study was limited to one housing setting close to Amman, i.e. the suburban style. Future research including comparative studies of gated versus non-gated communities might be needed to make results more generalisable for single-family homes in Jordan.

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