

Associations between Dwelling Type, Environmental Aspects of Housing Welfare, and Residents' Sense of Insecurity in Bandar-Abbas, Iran

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Abstract

Recently, feeling of safety in the residential area as a component of a proper housing has attracted a lot of attention from psycho-sociologist. Hence, this survey aims at determining the relationship between dwelling type, environmental aspects of housing welfare, and residents' sense of insecurity in Bandar-Abbas, Iran using a self-administered structured questionnaire distributed among 384 residents (62 from single-unit houses + 322 from apartment complexes) randomly selected. The findings show that dwelling type is significantly related to sense of insecurity among the residents. Further, the relationship between the components of housing welfare in residential building and residents' sense of insecurity is negatively significant. Additionally, regarding the effect of housing welfare components in residential neighborhood, only the access to recreational services has a significant negative but small effect on the sense of insecurity. Therefore, the factors which contribute to improved residents' feeling of safety may absorb more attention by both designers and policy makers in the housing development in order to increase the welfare of housing.

Keywords: dwelling, environmental aspects, housing, security, insecurity, residential area, safety, welfare, Iran

1. Introduction

1.1 Research Background

According to psychologist, "proper housing" is housing in which families can feel safe and comfortable. Although proper housing ensures the freedom of people, it does not allow people to violate each other's territory. Furthermore, sociologists believe that "proper housing" should be established based on the location, residents' workplace, and hygiene standards. It should also comply with the prevailing culture and customs of the area (Bahramian, 2004). In general, housing has two dimensions: quantitative and qualitative. The first dimension includes understanding phenomena, lack of shelter, and access to it. Indeed, this dimension considers the needs regardless of the quality. However, the qualitative dimension considers issues and phenomena related to the quality and physical aspects of housing (Shia, 2005, 2008). Security is one of the significant issues defining quality in housing. Having a safe shelter is among the most urgent human needs. It is also the most important and basic requirement in a residential complex (Iranmanesh, 2007). Similarly, Van Poll (2003) argues that safety is one of the key factors of the perceived residential quality. Furthermore, Maslow (1954) classifies security and safety as the second important physiological need of human being. In this regard, sense of safety at home and in

the residential environment are two levels of feeling security experienced by the residents (Aalbers & Rancati, 2008). Indeed, living in a safe home and secure neighborhoods from intruders is what all people are seeking for (Mikellides, 1980) and is affected by various factors. In a study by Wood, Shannon, Bulsara, Pikora, McCormack, & Giles-Corti, (2008), dwelling type was observed to have significant correlation with the level of feeling of safety among the residents. Ameri Siahooie and Rostami Goorani (2010) in a study in Bandar-Abbas (the capital of Hormozgan Province, Iran) found that one of the effective factors on sense of insecurity among local residents is type of dwelling they are residing in; because type of dwelling is one of the environmental factors that significantly affects the crime rates. Moreover, access to diverse land-uses is another factor that affects perceived safety (McCord, Ratcliffe, Garcia, & Taylor, 2007; Wood et al., 2008). In this essence, Foster, Giles-Corti, & Knuiiman (2010) found that availability of public services (as one function of mixed land-uses) in the neighborhood causes a decrease in resident's fear of crime and feeling of unsafety.

Besides, the importance of social participation as an essential component of residents' sense of safety has been highlighted in several studies. In fact, participation in leisure or recreation activities has been shown to increase the feeling of safety among the residents (Crank, Giacomazzia, & Heck, 2003; Kruger, Hutchison, Monroe, Reischl, & Morrel-Samuels, 2007). Furthermore, scholars asserted that the physical environment gives neighbors the opportunities for casual interaction that can decrease feeling of insecurity (Wood et al., 2008). Housing facilities as another basic need of residents plays an important role in health and physical welfares. Further, proper facilities and services lead to housing health (Gholizadeh, 2009). Briefly, studies on architecture and the constructed environment have recognized several factors that affect people's welfare in the residential area. Among these factors are: geographical location regarding availability of facilities and services (Kokabi, 2007; Gifford, 2007; Rafieian & Seifaii, 2005), prevention of noise pollution of outdoor (Gidlöf-Gunnarsson & Öhrström, 2007; Shahid & Bashir, 2013; Singh & Davar, 2004; Stansfeld, 2003), suitable lighting in both public and individual places (Painter, 1996), appropriate use of sunlight (McIntyre, 2006), suitable color in inner spaces of the housed (Bright, Cook, & Harris, 2004; Franz, 2006), the proper size of the inner spaces of the house (Munch, 1982), adequate ventilation (Spengler & Chen, 2000; Lee, Biasio, & Santini, 1996), adequate green space in both indoors and outdoors (Burchett, Torpy, & Tarran., 2008; Dravigne & Waliczek, 2008; Fjeld, Veiersted, Sandvik, Riise, & Levy, 1998; Kuo & Sullivan, 2001), and division of proper spaces in the house in relation to the number of residents and their needs (Mirmoghtadaee, 2009).

Therefore, facilities in the residential environment and a sense of security are the fundamental factors affecting proper housing. The first factor is related to the environment and the latter is related to human emotions and behavioral reaction. In this relation, Affordance theory considers the effect of environmental resources on people. Based on this theory, people adapt their behavior based on environmental data and show emotional reactions towards it. In other words, environmental data affect people's behavior (Gibson, 1979; Greeno, 1994). Indeed, environmental data are the information that exists in the environment and can be received by human senses. Creators of this information are a group of designers, architects, urban planners, and experts who are able to influence places built for human use. According to this theory, all aspects of space and place such as color, gender, light, dimensions, method of access, signs, and so forth are considered as the sources of environmental information. An individual can feel this information and select it in a meaningful way. Then, he/she interprets this information through a process of perception. Consequently, this trend leads his/her to feel secure or insecure in the residential area (Galvao & Sato, 2005; Kim, Joo, Rothrock, & Wysk, 2010).

1.2 Research Objective

The present study considers the relationship between the environmental aspects of housing welfare, dwelling type, and residents' sense of insecurity in the residing areas in Bandar-Abbas. This topic has been less-explored in Iran. The main objective of this research is to explore the significance of this relationship, and consequently the significance of environmental factors based on individual needs, to enhance the welfare of people with a sense of security in their home state.

1.3 Hypotheses

H_{A1}: There is a significant relationship between dwelling type and residents' sense of insecurity due to crime in the residential area.

H_{A2}: There is a significant relationship between environmental aspects of housing welfare and residents' sense of insecurity due to crime in the residential area.

2. Methodology

2.1 Population, Sample, and Sampling

This study was conducted in Bandar-Abbas, a port city and the capital of Hormozgan Province on the southern coast of Iran. Total urban population in Bandar-Abbas in 2012 was reported 448861 individuals that 51.1% of them were male. Further, the number of household in the same year was 121 716 with population density of 56.1% (Statistical Centre of Iran [SCI], 2012). Based on key indicators of the labour market, unemployment rate and economic participation rate in Hormozgan Province in December 2014 were 7.4% and 32.2%. However, the current lowest unemployment rate in this province is in Bandar-Abbas city. These amounts in Iran were reported 10.5% and 37.3% respectively (SCI, 2014). Then, Kouy-e-Farhangiyan region in Bandar-Abbas was selected as a proper place for this study due to its urban texture and the design of its residential buildings. Kouy-e-Farhangiyan region is located in the center of Bandar-Abbas located beside Shahnaz neighborhood. Since, unemployment rate is directly related to anomaly and crime rates in Iran (Abbasinezhad, Ramezani, & Sadeghi, 2013) and Shahnaz neighborhood is one the areas with highest rate of crime and unemployment in Bandar-Abbas (Siahooie & Goorani, 2010), it is worthy to study Kouy-e-Farhangiyan as a region that its residents are threaten by kind of insecure feeling due to residing near Shahnaz neighborhood. Kouy-e-Farhangiyan region with about 417000 square meters is including 1712 residential units that 274 of them are single-unit houses and 1438 of them are apartment units (Figure 1).



Figure 1. A view of Kouy-e-Farhangiyan neighborhood (taken by the first author, 2013)

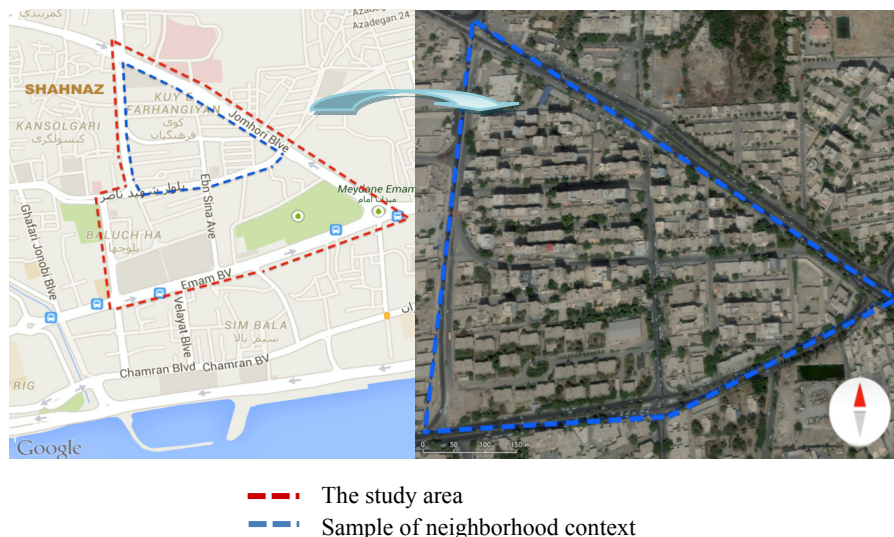


Figure 2. Farhangiyan neighborhood (Source: Google earth)

Noticeably, residential units were defined as our statistical population in this correlational research. With regard to Cochran formula and the studied population (1712 units), the sample size was conducted as 384 residents. Thus, 62 individuals residing in the single-unit houses, and 322 individuals residing in the apartment units were randomized as the samples of this survey. Using the software Google Earth (Figure 2), the map of the selected region was prepared and all the residential units were counted. Then the single-unit houses and apartments were

assigned particular numbers on the map. Next, 62 samples from the single-unit houses and 322 samples from the apartment units were randomly selected. It should be mentioned that in the apartment units the selection of the units was done by considering even and odd numbers of the apartment buildings. In the process of choosing the units, the randomization was considered all time, in order to have a reliable sampling. In each family, one person (aged between 18 and 60) was selected to answer the questionnaire. The demographic items were designed in a way that kept the identity of the participants unknown. In addition, the participants were assured their details and information would remain confidential.

2.2 Research Tools

In this study, type of housing and welfare aspects of housing were regarded as independent variables and residents' sense of insecurity in the residential area was seen as dependent variable. These variables have been examined through the self-developed questionnaires. Dwelling type has been asked through two options (apartment or single-unit house). The welfare aspects of housing in their residential context were considered in relation to two indexes: residential unit and residential area (neighborhood). Regarding the first index, the participants were asked: "Which of the following facilities exist(s) in your residential building?" including 1) lack of visibility into the home through the neighbors' windows, 2) lack of visibility into the home when the door is open, 3) door eyepiece or video doorbell, 4) double glazed windows, 5) soundproof external walls, 6) soundproof interior walls, 7) separate ducts in the building, 8) adequate bedrooms for all members who are living in the house, 9) parents' bedroom, 10) separate bathroom in parents' bedroom, 11) spaciousness of the house, 12) adequate electricity facilities in the building, 13) suitable size of kitchen area to the entire home, 14) bathroom suitable area regarding the total area of the house, 15) proper use of natural lighting in house spaces during the day, 16) appropriate wall color of living room based on the interest of residents, 17) appropriate color on the walls and kitchen cabinets in regard to residents' interest, 18) appropriate color on the walls in the rooms in regard to residents' interest, 19) parking, 20) storage, and 21) green space in the yard of the house or in the public spaces of the apartment complex. The participants could choose one or more choices scored from 1 to 21. Higher score showed the existence of more facilities in their residential building.

For the second index, the participants were asked: "Which of the following recreational, educational, and public services is (are) available to you by 5 to 15 minutes' walk from your residential building?" including 1) grocery store, 2) public transportation station, 3) medical center, 4) public booth, 5) educational centers and institutes, 6) high school, 7) secondary school, 8) primary school, 9) public library, 10) extra curriculum classes and activities, 11) kindergarten, 12) sport centers and clubs, 13) bakery, 14) park, 15) cinema and theater, and 16) mosque. The participants could choose one or all the choices scored from 1 to 16. Higher score showed the availability of more services close to the residential area.

In order to examine the dependent variable, the participants were asked to respond to four questions on 5-point Likert scale from 1= very low to 5= very high. The questions were: "To what extent do you suffer from young gangsters in your residential area?", "To what extent do you suffer from people addicted to drugs and alcohol in your residential area?", "When you travel, to what extent are you concerned about theft from your home?", and "To what extent do you feel insecure in your residential area in general?" Higher score showed higher level of feeling insecure.

In this study, internal consistencies of the scale based on Cronbach's alpha were 81.3, 75.2, and 76.2 respectively. Furthermore, the content validity of this instrument was approved through a panel of five *experts* in the field of psychology, sociology, architecture, and urban-designing.

3. Results

3.1 Descriptive Statistics

The descriptive statistics of the respondents' background are presented in Table 1. Regarding this table, about 47% of the respondents were female and 53% were male. The age categories of the respondents demonstrate that most of them were under 25 years old (60.7%), while 31% were between 25 and 45, and other 8.3% were above 45 years old. Additionally, 22.7% had Diploma, 30.5% had Bachelor, 9.9% had PhD or Master's degrees, and 33.3% were still students; however, 3.6% of them had no formal education. Interestingly, 90.9% were living in nuclear families, while 9.1% were living in extended families. Regarding their residential status, 40.9% were living in their own houses, 30% in rental houses, and 29.1% chose the option of other (e.g. houses owned by their family of origin or by their job manager, etc.) for their residential status.

Table 1. Respondents' background

		N	%
Gender	Female	180	46.9
	Male	204	53.1
Age Category	<25	233	60.7
	25-45	119	31.0
	>45	32	8.3
Level of Education	No Formal Education	14	3.6
	Diploma	87	22.7
	Student	128	33.3
	Bachelor	117	30.5
	Master and PhD	38	9.9
Family Type	Nuclear Family	349	90.9
	Extended Family	35	9.1
Residential Status	Own-Housing	157	40.9
	Rental Housing	115	30
	Others	112	29.1

As mentioned earlier, in the current study “the environmental aspects of housing welfare” have been studied through two factors: the existence of facilities in the house/apartment, and the availability of welfare services in the neighborhood. The facilities were included the items which their availability was needed in the house/apartment in order to increase the residents' welfare (e.g. audio gear of inner walls of the home and parking). The welfare services in the neighborhood were categorized into three categories, including educational services (e.g. schools and educational institutes), recreational services (e.g. theater and cinema), and public services (e.g. bakery and public transportation station). The level of residents' sense of insecurity has been measured through four items (e.g. “To what extent do you feel insecure in your residential area in general?”). Descriptions of these variables are presented in Table 2.

Table 2. Description of the welfare aspects of housing and the level of residents' sense of insecurity

Variables	Mean	SD
Facilities in the House/Apartment	38.75	21.81
Recreational Services	30.73	31.57
Educational Services	43.27	28.73
Public Services	68.36	25.28
Sense of Insecurity	50.38	21.59

According to table 2, mean and standard deviation for “Facilities in the House/Apartment” were 38.75 and 21.81, for “Residential Services” were 30.73 and 31.57, for “Educational Services” were 43.27 and 28.73, for “Public Services” were 68.36 and 25.28, and for “Residents' Sense of Insecurity” were 50.38 and 21.59.

3.2 Inferential Statistics

H_{A1}: There is a significant relationship between dwelling type and residents' sense of insecurity due to crime in the residential area.

In order to investigate the relationship between dwelling type and residents' sense of insecurity, Cramer's V was applied (Table 3). Obviously, there is a positive significant relationship between dwelling type and the level of insecure feeling among the participants (Cramer's V= 0.255, P<0.001). It means that the sense of insecurity among the residents in the selected neighborhood is affected by the dwelling type. Interestingly, most residents of Kouy-e-Farhangiyan had the feeling of insecurity at a low (32.0%) or a mediate level (32.6%).

Based on table 3, the highest percentage of the respondents residing in the single-units had an average feeling of insecurity (43.5%) while the highest percentage of the respondents residing in the apartment complexes had a

low feeling of insecurity (35.7%). Furthermore, with regard to comparing these percentages at high and very high level, it was found that the level of feeling insecure among people residing in single-units was higher than those residing in apartment complexes. Indeed, it should be taken into consideration that increase in the sense of insecurity leads to decrease in the sense of security. Thus, dwelling type is a variable that affects sense of security in families. Hence, this hypothesis (H_{A1}) was accepted for the relationship between dwelling type and the level of residents' sense of insecurity in the residential area.

Table 3. Results of Cramer's V analysis for the relationship between the dwelling type and residents' sense of insecurity

		The Type of Housing		Total	Cramer's V
		Single House	Apartment		
Residents' Insecurity Feeling					0.255***
Very Low	Count	2	37	39	
	Expected Count	6.3	32.7	39.0	
	% within type of housing	3.2%	11.5%	10.2%	
	% of Total	0.5%	9.6%	10.2%	
	Residual	-4.3	4.3		
Low	Count	8	115	123	
	Expected Count	19.9	103.1	123.0	
	% within type of housing	12.9%	35.7%	32.0%	
	% of Total	2.1%	29.9%	32.0%	
	Residual	-11.9	11.9		
Mediate	Count	27	98	125	
	Expected Count	20.2	104.8	125.0	
	% within type of housing	43.5%	30.4%	32.6%	
	% of Total	7.0%	25.5%	32.6%	
	Residual	6.8	-6.8		
High	Count	11	45	56	
	Expected Count	9.0	47.0	56.0	
	% within type of housing	17.7%	14.0%	14.6%	
	% of Total	2.9%	11.7%	14.6%	
	Residual	2.0	-2.0		
Very High	Count	14	27	41	
	Expected Count	6.6	34.4	41.0	
	% within type of housing	22.6%	8.4%	10.7%	
	% of Total	3.6%	7.0%	10.7%	
	Residual	7.4	-7.4		
Total	Count	62	322	384	
	Expected Count	62.0	322.0	384.0	
	% within type of housing	100.0%	100.0%	100.0%	
	% of Total	16.1%	83.9%	100.0%	

*** $p < 0.001$

H_{A2} : There is a significant relationship between environmental aspects of housing welfare and residents' sense of insecurity due to crime in the residential area.

In order to investigate the relationship between welfare aspects of housing and resident's sense of insecurity, Pearson product-moment correlation was conducted. Based on Table 4, the relationships between welfare aspects in the residing building, welfare aspects in neighborhood (recreational, educational, and public services), and residents' sense of insecurity are negative. However, regarding the amount of Pearson's r , the associations

between welfare aspects in the residential building, access to the recreational services (as one of the welfare aspects in neighborhood), and residents' sense of insecurity were significant at low levels ($r=0.155$, $p<0.01$ and $r=0.138$, $p<0.01$ respectively). Additionally, the other two factors of welfare aspects in the neighborhood (access to educational and public services) were found to have no significant effect on residents' sense of insecurity.

Table 4. Relationships between welfare aspects of housing and residents' insecure feeling

Variables	r
Welfare aspects of housing in residing unit	
Facilities in the house/apartment	-0.155**
Welfare aspects of housing in neighborhood	
Recreational Services	-0.138**
Educational Services	-0.069
Public Services	-0.093

** Correlation is significant at the 0.01 level (2-tailed).

In the next step, a multiple linear regression analysis was applied to determine the effects of welfare aspects in the residential building and in the neighborhood (as the independent variables) on residents' sense of insecurity (as the dependent variable). The findings from regression yielded a significant model ($F(4, 379) = 3.288$, $p<0.01$), whereas only 4% of the variance in the residents' sense of insecurity was explained by these independent variables (Table 5).

Table 5. Results of multiple linear regression analysis for residents' insecure feeling

Model	Unstandardized Coefficients		Standardized Coefficients	
	B	SE	β	t
Welfare aspects of housing in residing unit				
Facilities in the house/apartment	-0.138	0.055	-0.139	-2.494**
Welfare aspects of housing in neighborhood				
Recreational Services	-0.083	0.042	-0.121	-1.971*
Educational Services	0.056	0.052	-0.074	-1.069
Public Services	-0.029	0.054	-0.034	-0.542
R²	0.042			
Adjusted R²	0.029			
F	F(4, 379) = 3.288			

* $p < 0.05$, ** $p < 0.01$

As shown in Table 5, the existence of educational and public services have no significant effect on residents' sense of insecurity; while facilities in the house/apartment were found to be the most significant predictor of dependent variable ($\beta=-0.139$, $p<0.01$), followed by recreational services ($\beta=-0.121$, $p<0.05$). Hence, this hypothesis (H_{A2}) was not accepted for the relationship between all environmental aspects of housing welfare and the level of residents' sense of insecurity in the residential area.

4. Discussion

Findings show that living in apartments brings less sense of insecurity for the residents. Thus, dwelling type is an effective factor in predicting the level of insecure feeling. This result supports the results of the studies conducted by Ameri Siahooie and Rostami Goorani (2010) and Wood et al. (2008) regarding the relationship between dwelling type and feeling of safety. They agreed that dwelling type predicts the level of insecure feeling among the residents in different areas. Moreover, since the residents in Kouy-e-Farhangiyan region have negative attitude toward Shahnaz neighborhood as an insecure area, they mostly tend to reside in apartment complexes. On the other hand, the availability of facilities in the residential building and the access to recreational services in the residential neighborhood causes a decrease in the level of insecure feeling among the

residents. Additionally, the access to public services has no significant effect on residents' sense of insecurity. This result is in line with the results achieved by Foster et al. (2010). Indeed, the results confirmed the definition of proper housing that is a place in which there are sufficient private spaces for all family members to do their favorites individually (e.g. study and rest). In addition, proper housing should protect and provide the human with a sense of security, belonging, and continuity with nature. Moreover, it should express the need for human beauty, pleasant landscapes, and stimulate and inspire social space-in accordance with the physical, mental, and social essence of human being. In fact, since housing as an important aspect of a human-being's life is in mutual interaction with other aspects of his/her life in the society, it should be constructed based on social, economic, psychological, and cultural features of that society.

Therefore, the results obtained from this study are in agreement with Affordance Theory which says the sources of environmental information are associated with humans' behavioral reactions. In other words, the components, such as door eyepiece, video doorbell, double glazed windows, soundproof interior walls, adequate bedrooms for all members in one house, and proper light in residential building as the sources of environmental information in the residing area affect the level of insecure feeling among the residents negatively.

5. Conclusion

The components of housing welfare in the residing unit, and the access to recreational services in the residential neighborhood (as the environmental aspects of housing welfare) are related to the level of feeling of insecurity among the families. However, the type of housing is also significant factor in predicting the insecure feeling among them. Although the construction of residential complexes or apartments is a necessity because of shortage of suitable land and prevention of land degradation and landscapes in a coastal city such as Bandar Abbas, without the necessary planning and development in the city, specifically in the newly-established part of the city, and without considering the relationship between environmental factors affecting the welfare of people and sense of insecurity in the housing, the urban management will face many issues. Consequently, these problems lead to loss of tranquility and security of families in the urban environment. Thus, architects and planners in housing should pay more attention to psychological and sociological aspects of housing. They should also take into account environmental factors affecting the welfare of people. Hence, reducing the feelings of insecurity is a step towards increasing the sense of security and safety among residents. Finally, it should be noted that if these factors which contribute to safety are well understood, they will assist both designers and policy makers in the development of urban housing and enhance people's quality of life.

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