

# RELATIONSHIP BETWEEN ENVIRONMENTAL ASPECTS OF HOUSING WELFARE AND RESIDENTIAL SATISFACTION

Farimah Dokoushkani <sup>1\*</sup>, Behrang Moradi <sup>2</sup>, Aida Mehrad <sup>3</sup>, Asbah Razali <sup>4</sup>, and Mouna Ostadagha <sup>5</sup>

<sup>1,5</sup>Department of Human Development & Family Studies, Faculty of Human Ecology, Universiti Putra Malaysia (UPM), Serdang, Selangor, Malaysia.

<sup>2</sup>Department of Architecture, Faculty of Built Environment, Universiti Teknologi Malaysia (UTM), Johor, Malaysia.

<sup>3</sup>Department of Social & Development Science, Faculty of Human Ecology, Universiti Putra Malaysia (UPM), Serdang, Selangor, Malaysia.

<sup>4</sup>Department of Anthropology & Sociology, Faculty of Art and Social Science, Universiti Malaya (UM), Kuala Lumpur, Malaysia.

\* Corresponding author. E-mail address: f.dokoushkani@gmail.com

**Abstract**—Nowadays, residents' satisfaction and its relationship to housing design is an important concern for psycho-sociologists. In the current study, the importance of the welfare aspects of housing was considered in a residential context. Residents in Farhangian neighborhood in Bandar Abbas, a port city in southern coast of Iran, responded to a self-developed questionnaire. It was about the access to educational, recreational, and public services in their neighborhood; plus, the existence of various architectural and environmental characteristics in the single houses/ apartments based on the inhabitants' requirements. Also, the residential satisfaction in relation to these components was asked. This study employed a house-to-house survey of residents who were randomly selected. Descriptive and inferential statistics were applied to analyze data. Findings demonstrated that there are significant relationships between the functions of welfare aspects of housing in the house/apartment and in the residential area with the level of residential satisfaction. Therefore, housing designers should pay specific attention to welfare aspects in housing design. Based on the findings of this research, we believe that developers of residential environments have the power to affect the satisfaction of people by means of housing design manipulation.

**Index Terms**—Parsons' theory, interaction, neighborhood, residential satisfaction, environmental aspects, housing welfare, housing facilities.

## I. INTRODUCTION

From a socio-psychological perspective, proper dwelling plays a significant role in psychological health [6][14][19]. Dwelling is recognized not only as one of the three basic needs of human being, but also as a tangible expression in which spiritual values are manifested [15]. From one side, dwelling is rooted in and interwoven with environment, livelihood, production, and the essence of human being; and from the other side, artistic taste, social criteria, family foundations, traditions, beliefs, and ideas of every particular region and land have dedicated dwelling an especial significance [12].

In the area of environmental psychology, after recognizing the relationship between human being and environment, choosing the proper residential area and consequently having satisfaction of this choice are of great significance. When we have the right and ability to choose what we expect and desire, we could meet our satisfaction. However, sometimes we have

to choose to live somewhere that is not close to our ideal house. For instance, today, many people prefer to live in a small apartment close to the downtown, instead of living in an individual unit far away from the city center, since the apartment is close to their work office, shopping centers, and other facilities. Both preferences and selections of a dwelling are significant. Preferences usually refer to individual elements or architectural aspects of a building (e.g. individual values or architecture of the building), whereas selections often consider economic conditions (e.g. rent or residential cost) [10].

Also, psychologically, adaptation to the environment is regarded as another influential factor in people's lifestyle [8][27]. The present study considers Parsons' "theory of action". Parsons' emphasizes the complexity of human social behaviors and relationships. This mutual action that is between two or more actors and engaged minds constitutes the core of Parsons' theory [23]. Parsons' actor is a creature in different situations, since its action is constantly decoding the signs that it finds in the environment, and then shows reflection towards them. According to Parsons, every organization for having a successful function requires some particular tools such as 1) adaptation to the environment, 2) fulfillment of objectives, 3) unity and harmony, and 4) perseverance of a particular pattern. Social action that is the foundation of Parsons' theory is constituted of the four following elements:

1. *Actor* who can be a person, a group or a society;
2. *Situation* that includes physical and social items with which actor creates connection;
3. *Symbols* that help actor make relationship with different elements and find meaning for each of them;
4. *Principles, norms, and values* that guide the orientation of the action, namely the relationship that an actor has with social and non-social elements in its environment.

In case of physical objects, the actor can affect them or may use them for making relationship with other actors. It can also see them as a model and clue for orienting and directing its action in relation to other physical objects or actors [23]. Actor's environment is the first physical environment in which action becomes activated. This environment includes material objects, climate conditions, geographical situations, and

geological observations of lands and places. It also includes biological organisms in an individual status of actor. A social actor can feel the pressure or weight of these objects, and can recognize them and show its feelings in relation to them and even use them to achieve its goals. All these relations with physical environment are based on a collection of interpretations that help the actor recognize the reality and find the meaning, and consequently represent its performance [23].

The physical relationship between the actor and its environment can achieve cooperation that should lead to the stability of social order regarding the minimum requirements of individuals. Clearly, people's adaptation to the environment is influential in their lifestyle [24]. Thus, when individuals could not adopt themselves with the environment, the social order will face with failure. Also, people's adaptation to the environment depends on their satisfaction of the environment [13][30]. Therefore, considering people's satisfaction in relation to the environment in which they live and the influential factors in this environment are of great significance. If an environment is created based on the satisfaction of its users, it can be influential in adaptability of people who live in that environment, and consequently it affects the stability of social order.

The present study considers satisfaction of the respondent as an actor in relation to their residential area as a condition and investigates the influential factors on this condition. It is an issue that has been less discussed in Iran. The main objective of this research is to show the relationship between the satisfactions of housing consumers with the required services and facilities in their housing regarding the influential factors in their welfare.

Housing welfare refers to different aspects which affect the residents' welfare. One of them is environmental aspect investigated in the current study through two divisions of house and neighborhood. Studies on architecture and the built environment have recognized several factors that affect people's welfare in the residential area, such as geographical location regarding availability of facilities and services [10][16][22], prevention of noise pollution of outdoor [9][25][26][29], the proper size of the indoor spaces of the house [21], suitable lighting in both public and individual places and appropriate use of sunlight [1][18], suitable color in indoor places of the house [2][7], adequate ventilation [17][28], adequate green space in both indoors and outdoors [3][4][5], division of proper spaces in the house in relation to the number of residents and their needs [11][20].

## II. METHODOLOGY

*Population, sample, and sampling:* Farhangian region in Bandar-Abbass a port city and capital of Hormozgan Province on the southern coast of Iran is selected as a proper place for this study due to its urban texture and the design of its residential buildings. This region is located in the center of Bandar-Abbass and is about 417000 square meters. In this area, there are 1712 residential units that 247 of them are individual houses and 1438 of them are apartment units. In this study, residential units are defined as our statistical population. In this correlational research, with regard to Cochran formula and the studied population (1712 units), the sample size is 384. So, 62 of the individual houses, and 322 of the apartment units were randomized as the samples of this survey.

Using the software Google Earth, the map of the selected region was prepared and all the residential units were counted.

Then the individual houses and apartments were assigned particular numbers on the map. In the next step, 62 samples from the individual 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 apartments. It is also tried to include all kinds of units with different areas. In the process of choosing the units, the randomization was considered all time, in order to have a reliable sampling. It should also be mentioned that one person in each family (aged between 18 and 60) was selected to answer the questions of the study. The demographic items of the questionnaire were designed in a way that kept the identity of the participants unknown. Also, the participants were assured that their details and information will remain confidential.

*Research Tools:* In this study, welfare aspects of housing are regarded as independent variables, and inhabitants' satisfaction towards their residential area is seen as dependent variable. Both variables are examined through the self-developed questionnaire. The welfare aspects of housing in their residential context were considered in relation to two indexes: residential area (neighborhood) and residential unit (single house/ apartment unit). Regarding the first 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 house?" including 1) public transportation station, 2) grocery store, 3) public booth, 4) medical center, 5) primary school, 6) secondary school, 7) high school, 8) public library, 9) educational centers and institutes, 10) extra curriculum classes and activities, 11) sport centers and clubs, 12) bakery, 13) kindergarten, 14) park, 15) mosque, and 16) cinema and theater.

For the second index, the participants were asked: "Which of the following facilities exist(s) in your residential building?" including 1) door eyepiece or video doorbell, 2) lack of visibility into the home when the door is open, 3) lack of visibility into the home through the neighbors' windows, 4) double glazed windows, 5) soundproof interior walls, 6) soundproof external walls, 7) separate ducts in the building, 8) parents' bedroom, 9) separate bathroom in parents' bedroom, 10) adequate bedrooms for all members who are living in the house, 11) adequate electricity facilities in the building, 12) spaciousness of the house, 13) toilet suitable area regarding the total area of the house, 14) suitable size of kitchen area to the entire home, 15) proper use of natural lighting in house spaces during the day, 16) appropriate color on the walls and kitchen cabinets in regard to residents' interest, 17) appropriate wall color of living room based on the interest of residents, 18) appropriate color on the walls in the rooms in regard to residents' interest, 19) storage, 20) parking, and 21) green space in the yard of the house or in the public spaces of the apartment.

The participants could choose one or all the choices. In order to examine the dependent variable, the participants were asked to respond to two questions on 5-point Likert scale from 1= very low to 5= very high. The question were: "How much you are satisfied with your residential area based on their access to the welfare services?" and "How much you are satisfied with your residential unit based on the equipment and facilities of your house/ apartment?". In this study, internal consistencies of the scale based on Cronbach's alpha were 75.2, 81.3, and 78.4 respectively. Further, the content validity of this instrument was approved through a panel of five experts

in the field of psychology, sociology, architecture, and urban-designing.

III. FINDINGS

*Descriptive Statistics:* Table I presents a descriptive statistics of the respondents' background. According to this table, about 53% of the respondents were male. The age categories of the respondents show that most of them were youth (about 79% < 30 years old). Additionally, only 3.6% of

them had no formal education, in contrast, 22.7% had Diploma, 30.5% had Bachelor, 9.9% had PhD or Master's degrees, and 33.3% were still students. Interestingly, 90.9% were members of nuclear families, while 9.1% lived in extended families. Regarding to their residential status, 40.9% lived 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 I. RESPONDENTS' BACKGROUND

		N	%
Gender	Female	180	46.9
	Male	204	53.1
Age Category	<20	143	37.2
	21-30	159	41.4
	+31	82	21.4
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 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. appropriate color on the walls and kitchen cabinets in regard to residents' interest, audio gear of inner walls of the home, and parking). The services in the neighborhood were categorized into three type of services including educational services (e.g. educational centers and institutes), recreational services (e.g. cinema and theater), and public services (e.g. public transportation station). The level of residents' satisfaction has been presented in the following table (Table II).

TABLE II. DESCRIPTION OF THE WELFARE ASPECTS OF HOUSING AND THE LEVEL OF RESIDENTS' SATISFACTION

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
Satisfaction with the existence of facilities in the house/apartment	3.02	1.12
Satisfaction with availability of services in the neighborhood	2.99	1.20

According to table II, mean and standard deviation for "Facilities in the house/ apartment" 38.75 and 21.81; for "Residential Services" were 30.73 and 31.57; for "Educational Services" 43.27 and 28.73; for "Public Services" 68.36 and 25.28; for "Satisfaction with the existence of facilities in the house/apartment" 3.02 and 1.12; and for "Satisfaction with availability of services in the neighborhood" 2.99 and 1.20 respectively.

The level of residents' satisfaction regarding the existence of facilities in residential unit is shown in figure 1. It displays that how much they are satisfied because of the existence

these facilities. Based on this figure, the level of satisfaction among 6.3% respondents was very high, 37% high, 19.8% moderate, 26.4% low, and 10.5% very low.

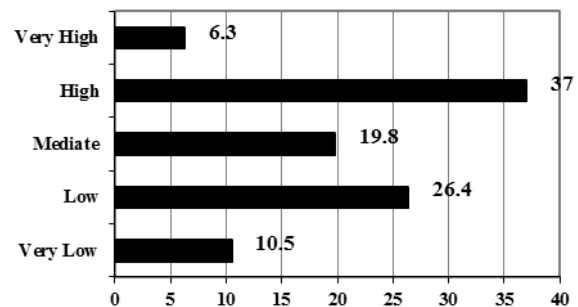


Fig. 1. The levels of residents' satisfaction of the existence of welfare facilities in the house/ apartment

The level of residents' satisfaction with availability of services in the neighborhood is represented in figure 2. It shows that how much they are satisfied with their neighborhood because of the existence of educational, recreational, and public services with 5 to 15 minutes walking in their living area. According to this figure, the level of satisfaction among 11.2% respondents was very high, 25.2% high, 19.4% moderate, 29.5% low, and 14.7% very low.

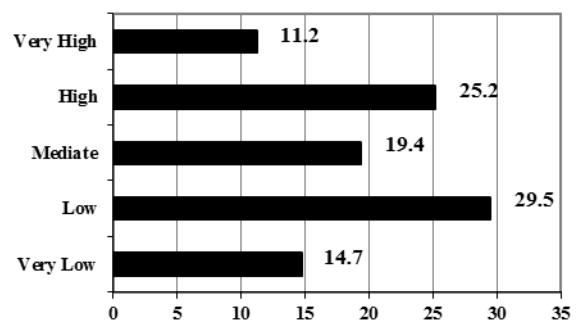


Fig. 2. The levels of residents' satisfaction with the availability of services in the neighborhood

*Inferential Statistics:* In order to investigate the relationship between welfare aspects of housing and residential satisfaction, Pearson product-moment correlation was conducted. Residential satisfaction is the result of computing the level of satisfaction with the existence of facilities in the house/apartment and availability of services in the neighborhood.

As it is shown in table III, the existence of welfare aspects in neighborhood (recreational, educational, and public services), and house are related to residential satisfaction significantly. Regarding to the amount of Pearson's r, the relationship between public services and residential satisfaction is at the lowest level in this study. This amount ( $r = 0.298, p < 0.01$ ) shows that it is a weak positive relationship. In addition, the relationships between recreational services, educational services, and residential satisfaction are a kind of moderate positive relationship ( $r = 0.35, p < 0.01$  and  $r = 0.37, p < 0.01$  respectively). However, a strong positive association was observed between housing facilities and residential satisfaction ( $r = 0.42, p < 0.01$ ).

TABLE III. RELATIONSHIPS BETWEEN WELFARE ASPECTS OF HOUSING AND RESIDENTIAL SATISFACTION

Variables	r
Recreational Services	0.345**
Educational Services	0.367**
Public Services	0.298**
Facilities in the house/apartment	0.417**

\*\* 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 neighborhood and in the residential units (as the predictors) on respondents' residential satisfaction (Table IV). The findings from regression yielded a significant model ( $F(4, 379) = 30.41, p < 0.001$ ), whereas 24% of the variance in the residential satisfaction was explained by independent variables.

TABLE IV. RESULTS OF MULTIPLE LINEAR REGRESSION ANALYSIS FOR RESIDENTIAL SATISFACTION

Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	SE	$\beta$	
Recreational Services	0.32	0.11	0.16	2.84**
Educational Services	0.13	0.06	0.14	2.21*
Public Services	0.07	0.07	0.05	0.90
Facilities in the house/apartment	0.143	0.02	0.30	6.07***
R <sup>2</sup>	0.243			
Adjusted R <sup>2</sup>	0.235			
F	F(4, 379) = 30.41			

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

As shown in table IV, facilities in the house/apartment were found to be most significant predictor of residential satisfaction ( $\beta = 0.30, p < 0.001$ ), followed by recreational services ( $\beta = 0.16, p < 0.01$ ), and educational services ( $\beta = 0.14, p < 0.05$ ). However, public services were not found to be a significant predictor of residential satisfaction ( $\beta = 0.05, p = 0.369$ ).

#### IV. DISCUSSION

The findings show that more educational, recreational, and public services and facilities in the residential area lead to more satisfaction among the family members. However, among these three groups of services (educational, recreational, and public), the relationship between public services and inhabitants' satisfaction is the weakest. This finding is significant since the majority of the participants of the present study were below 30 year-old people whose priority was not the availability of public services such as bakery and public transportation; instead, recreational and educational facilities and services played an important role in their satisfaction. In addition, welfare facilities inside the building were meaningfully influential on the inhabitants' satisfaction. It should also be noted that facilities inside the building are more influential on satisfaction than facilities in the residential area. In the contemporary Iranian society, due to the emergence of new computer technologies and games, many teenagers and young individuals prefer to spend their free time at home. Thus, recreational facilities inside the building are important to meet people's satisfaction.

Indeed, the results confirmed the definition of proper housing that is a place in which there is sufficient private space for every individual to study and rest. In addition, proper housing should protect and provide the human with needs for security, independence, a sense of belonging and continuity with nature. Also, it should express the need for human beauty and pleasant landscapes and stimulate and inspire social space - in accordance with the physical, mental, and social essence of human being. Furthermore, proper housing is affected by some factors such as appropriate area and suitable space division. In fact, housing as an important aspect of human life is in mutual interaction with other aspects of life. Thus, a house should be constructed regarding to social, economic, psychological, and cultural features of a society.

The results obtained from this study are in agreement with Parsons' results. Based on Parsons' theory of interaction, it can be said that compliance with environment is one of the most important factors in families' satisfaction and welfare. As mentioned earlier, Parsons' actor is a creature in a situation and its action is a meaningful understanding of signs that it faces in the environment and shows reflection towards. The actor's environment is the first physical environment in which the actor's actions become activated. Then, the actor shows his/her emotions towards the activated actions and uses them to achieve his/her goal. Finally, the actor can achieve an understating in relation to its physical environment. In other words, a person, as an actor in the residential unit, responds to the signs and uses them in relation to his/her goal that is to

achieve ultimate peace. This understanding and interaction should occur in a meaningful way that provides people's basic needs and leads to social stability.

#### V. CONCLUSION

According to the results of the present study, it can be concluded that interaction between the components of welfare in the house, the availability of access to welfare services in the residential area, and individuals' requirements in the neighborhood, ultimately, lead to satisfaction of family members. On the other hand, constructing residential complexes is a necessity due to lack of suitable land and prevention of swallowing coastal lands, especially in a port city like Bandar-Abbas. Besides, an essential planning and development in the newly built part of the city, specifically in the old contexts, is needed.

Consequently, regardless the relationship between the components of welfare housing and individuals' requirements in housing, the management of the city will face many serious problems in a close future that lead to families' deprivation of peace in their residential area. Thus, it is important to consider the psychological and social aspects of housing, in order to figure out the socio-economic problems and rescue the society from the psychological and sociological disorders caused by improper housing supply.

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