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PROMOTION OF THE QUALITY OF SOCIAL INTERACTIONS THROUGH SKELETAL DESIGN OF BUILDING COMPLEXES

Mitra Nomani[1,2], Alireza Daneshpour[2]*

[1]*Department of Architecture, Fars Science & Research Branch, Islamic Azad University, Marvdasht, IRAN*

[2]*Department of Architecture, Marvdasht Branch, Islamic Azad University, Marvdasht, IRAN*

ABSTRACT

Aims: *Following economic, political, and social circumstances governing the society and the building construction sector, high-rise buildings do not necessarily meet the criteria for desirable residential environments. Consequently, the design of mass and space is performed irrespective of the social interactions of the residents. In this vein, the present research mainly aims to propose approaches whereby social interactions are enhanced designing a residential complex promoting the quality of social life through establishment of suitable public and common spaces. The present research is both applied and descriptive-survey nature. A researcher-produced questionnaire is used to collect data. The statistical population consists of three building complexes: Moa'lem, Aryobarzan, and Mohandesin. Cluster sampling and Cochran formula were employed to select 235 samples. SPSS was also used to analyze data and to test out the research hypotheses in factor analysis. The results emanating from the analyses suggest that in terms of the physical dimension which exerts the most influence on the design revealing the design codes, the residents consider four factors as the most salient factors in social interactions. The present paper contributes to the literature on the topic in that it investigates the establishment of social interaction among residents of building complexes and the effect of architectural space designs in enhancing these relationships.*

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KEY WORDS

Social interactions, Residential Complexes, Public Spaces, Residence

***Corresponding author:Email:** daneshpouralireza@gmail.com;**Tel:**+989173146167; **Fax:**+987136279441

INTRODUCTION

In recent years, interactional spaces are a prerequisite to the design and formation of architectural spaces whose influence reveals the role of these spaces in enhancing the socio-cultural character of the city. Social interactions and the establishment of relationships can be manifested in a physical context, a view, a conversation, and interpersonal exchanges all of which necessitate the definition of respective events and activities and consequently responsiveness of the people in spaces and their membership in social groups and networks [1]. The inappropriate and unsatisfactory conditions governing social life in some modern-day residential complexes, evident both in material and spiritual sense, necessitates the promotion of stabilized living conditions of social life emphasising principles of social sustainability. Open public spaces in residential areas provide the locality for social events and the groundwork required for interactions directly influencing the residents' quality of life. It is imperative to consider these social interaction centers as open public spaces and social interaction centers, as the most salient and the smallest social element of the city, play a pivotal role in social life. In this regard, the varied nature of residents' behavior and their respective needs necessitates the creation of spaces having an accurate, responsive and trustworthy design [2].

Eshghipour (2014) investigates various factors influencing social interactions in a multi-purpose commercial, cultural and recreational hub. These factors include: flexibility of spaces in a manner such that they be responsive to the needs of all the members of the community, appropriate lighting and special design conducive to attendance of women and children creating a sense of security in them, modern technology commensurate with local and temporal circumstances and behavioral, social, and cultural norms [3]. It is imperative to consider these social interaction centers as open public spaces and social interaction centers, as the most salient and the smallest social element of the city, play a pivotal role in social life. In this regard, the varied nature of residents' behavior and their respective needs necessitates the creation of spaces having an accurate, responsive and trustworthy design [4].

Considering the fact that the creation of desirable privacy for residents of each dwelling and the neighborhood in the context of interpersonal relationships suggests the enhancement of social interactions within the space, the provision, definition, and clarification of private, semiprivate, and public spaces in Iranian residences and

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neighborhood relationships enhances social interactions. The appropriate physical design of internal spaces within each Iranian residence and adequate spatial communications of these residences with neighboring residences which ultimately form a district having desirable personal space complying with the individualistic culture and psychology of residents enhances social interactions among residents. Suitable quantitative and qualitative proportions for volumes and areas within Iranian residential spaces, crowding, adequate density, and number of households residing therein and adherence to the same proportions and ratios at the scale of neighborhood and district strengthens social interactions among attendance [5] all of which are of paramount importance in the physical design of residences.

MATERIALS AND METHODS

The present research is of an applied nature in terms of aims as it investigates the physical design of residential complexes to promote the quality of social interactions while it can be considered to be of a descriptive and survey type in view of its nature. The present research, a researcher-produced questionnaire is employed to collect data. The instrument consists of a number of likert-type questions including some eliciting demographic information. [6]

In general, the stages involved in conducting the present research are as follows:

Stage 1:
selection of the residential complexes in Shiraz and specifying the qualitative data for the residences using qualitative indices, their analysis, and collecting questionnaires based on questions prepared with reference to these indices. [7]

Stage 2:
classifying qualitative data and their analysis base on criteria such as fluency, perception, social effect, and content and analysis of these data using regression and factor analyses.

Stage 3:
Analyzing the results and deriving the conclusions transforming the qualitative results to qualitative indices comparing and classifying them.

The present research employs descriptive and inferential statistics to analyze data to test out research hypotheses. Considering the hypotheses, factor analysis and the nonparametric tests such as the t-test, Kolmogorov test, and Smirnov tests were used in the SPSS software. The present research employs descriptive statisticsto analyze data and inferential statistics to test the research hypotheses. Factor analysis and parametric tests such as the t-testand nonparametric tests including Kolmogorov, Smirnovin SPSS are also used for this purpose. [8]

Research Hypotheses

The design elements in social sustainability such as liveliness, attendance, creation of common communal memories, sense of belongingness to the space, the opportunity for dialogue, face-to-face interactions, possibility to express views, opinions, and interests among the residents can exert effect on the skeletal design of residential complexes.

The design of specific communal spaces, appropriate access to communal spaces, signs, elements, and natural and artificial space-creation in the residential area can promote the quality of social interactions in the complexes. Presenting planning and design approaches for the layout of the communal spaces in the storeys and public open spaces can lead to the creation of desirable environment for residents promoting social interactions among them.
[1, 9]

RESULTS

Considering the level of influence, the four factors are classified and named in SPSS as follows:
1. Specific Public Spaces: This factor defines approximately 19 percent of the variance in the data being the most salient physical factor in enhancing social interactions in building complexes as viewed by residents. This factor includes the following variables: the existence of a location for convening, a location contemplated for delivering speeches, a location for the computer site, a location for artistic activities, and a library.
2. Access: This factor incorporates the following: adequate access to communal spaces, access to green spaces and adequate access to public spaces accounting for 15 percent of the variance in the data.

Signs and Elements: This factor accounts for 10 percent of the variance in the data including criteria for characteristic elements, waterfronts, and sculptures.

Natural and Artificial Space Building: This factor accounts for the appearance of residential complexes incorporating the following variables: natural characteristic elements, quality green spaces, playgrounds, and existence of spaces for leisure activities for different age brackets.

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Table 1: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.536	.130		4.120	.000
	Specific Spaces	.503	.135	.230	3.733	.000
	Access	.870	.164	.327	5.315	.000
	Elements	.172	.184	.058	2.234	.035
	Space-Building	.386	.180	.132	2.141	.033

On the basis of the table of coefficients **[Table- 1]**, the standard beta coefficient for each independent variable determines the significance of each one. The beta weightings are indicative of the variability of the dependent variable (i.e. level of social interactions) for variations for one standard deviation in the dependent variable.

As the level of significance of the test for equivalence of regression coefficients and the constant or the zero value is less than 0.05 no regression equations need to be ignored. In other words, the four dependent variables exert influence on the dependent variable. Accordingly, the effect of each factor on social interactions in decreasing order is as follows: Access (standard beta=0.870), specific communal spaces (standard beta=0.503), space-building (standard beta=0.386), and finally elements and signs (standard beta=0.172). To determine the reliability of the regression model, the colinearity test was employed. Colinearity represents a situation which indicates that an independent variable is a linear function of other dependent variables.

Table 2: The colinearity test

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Specific Spaces	Access		
1	1	4.077	1.000	.00	.02	.01	.01	.01
	2	.341	3.456	.00	.82	.02	.11	.05
	3	.277	3.835	.00	.01	.02	.59	.38
	4	.239	4.134	.00	.02	.59	.08	.31
	5	.66	7.847	.99	.13	.36	.21	.25

[Table- 2] depicts the eigenvalues and condition indices, respectively. Eigenvalues less than 1.0 reveal the high internal correlation of predictions. Thus, in view of the appropriateness of eigenvalues and condition indices, colinearity among independent variables is ruled out and the model is considered as being highly reliable. Results emanating from regression analysis suggest that "access" (standard beta=0.870), "specific communal spaces" (Standard beta=0.503), "space-building" (standard beta=0.386), and finally "elements and signs" (standard beta coefficient=0.172) occupy as the first through fourth priorities. Regression analysis was also conducted in the social dimension suggesting that the factor entitled "socio-economic harmony" (beta coefficient=0.429) was the factor exerting maximum influence on social interactions in the residential complexes under study. This factor was followed by "social assets" (beta coefficient=0.392), "satisfaction with space" (beta coefficient=0.352),

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"security" (beta coefficient=0.295), and "open communal spaces" (beta coefficient=0.281). In sum, the results emanating from the colinearity test clearly support the fact that there is no colinearity among independent variables and that the model possesses high validity and reliability. [9, 10]

DISCUSSION AND CONCLUSION

The present research mainly aimed at identifying factors influencing social interactions in building complexes. Accordingly, to achieve the objectives contemplated in the study, factor analysis of physical and social dimensions was performed. In the skeletal dimension, which exerted major influence on design and represents design codes, the four factors "specific communal spaces", "access", "Signs and elements", and "natural and artificial space-building" were selected as the most influential factors in social interactions as viewed by building complex residents. Subsequently, regression analysis was performed to prioritize the factors involved as each factor plays a major determining role in the design process. Results from regression analysis suggest that "access" (standard beta=0.870), "specific communal spaces" (standard beta=0.503), "space-building" (standard beta=0.386) and "elements and signs" (standard beta=0.172) occur in the first through fourth priorities, respectively.

Factor analysis was also performed in the social dimension. This was because the social dimension exerts large influence on the level of social interaction in building complexes. Furthermore, the analysis of this dimension makes it possible to discover the salient points in design which influence the level of social interactions. Factor analysis in the social dimension revealed that five factors influence social interactions in building complexes which are: "social assets", "open communal spaces", "socioeconomic harmony", and "satisfaction with space", and "security". Regression analysis was also performed on this dimension with results suggesting that the factor "socio-economic harmony" (standard beta=0.429) is the most influential factor in social interactions within residential complexes. Following this factor are the factors "social assets" (standard beta=0.392), "satisfaction with space" (standard beta=0.352), "security" (standard beta=0.295), and "open communal spaces" (standard beta=0.281).

As was mentioned earlier, inattention of planners and designers of residential complexes to physio-spatial criteria in meeting human needs can cause serious consequences for residents the most salient of which are nonexistent neighborhood relationships among building complex residents and lack of social interactions among them. Considering the fact that the combination of functions and activities intended to establish spatial unity and various semi-private, semipublic, and public areas are regarded as groundwork for social interactions and relationships, appropriate design of these spaces and their suitable connection can play an effective role in enhancing the quality of human interactions in residential complexes.

Although public spaces play a pivotal role in strengthening familiarity and interactions among residents,living in apartments distances human beings from the natural environment. Thus, the creation of open and green spaces having scenic architecture and landscapes paves the way for the establishment of fruitful social interactions and communications. Furthermore, the creation of public spaces within the buildings and the juxtaposition of areas for residents' conventions in the evenings can promote interpersonal interactions and communications.

Given the analyses performed in the present research, it can be observed that the higher the quality ofpublic spaces in residential complexes the larger is the opportunity for social interactions following communal activities such as visiting, chats, games, exercise, ...rendering the spaces conducive to livelihood and civil life.

Access to these facilities is made feasible subject to numerous factors some of which are closely associated with the physical structure of the environment such as variety, compliance with functions, security, concentration, and adequate capacity. The physical groundwork can play a crucial role in establishing a lively and attractive environment provided these requirements and the qualitative specifications demanded by consumers are met. In other words, the establishment of the necessary qualities, the minimum requirements for creation of social interactions and hence increasing the likelihood of individuals' attendance in the environment as a starting point for communal activities and social interactions are provided.

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CONFLICT OF INTERESTS

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