



Evaluating the Role of Neighborhoods Fields on vitality “Case study: Narmak district of Tehran”

Nasim Hasanimianroudi

Department of Urbanism, Tehran North Branch, Islamic Azad University, Tehran, Iran

Email: nasim_hasani2002@yahoo.com

ABSTRACT

Along with developments in urban textures in the contemporary time and replacing new urban texture instead of old urban places, the role and place of urban neighborhoods is very important. In today's neighborhoods social interaction of inhabitants is very little and these places do not have vitality and dynamicity of the old neighborhoods places. Though this issue is the result of type and method of life, but lack of necessary places for forming these interactions is considered a very influential factor. To evaluate the role of neighborhoods fields on vitality of the neighborhoods and measuring vitality in Narmak neighborhoods 130 questionnaire were completed by neighborhoods inhabitants to evaluate and analyze the condition of indexes and influential criteria in the current conditions. At the end of analysis using the Topsis technique of Excel software and rate of achievement of criteria and indexes in the current situation it was specified and finally the rate of Narmak vitality was calculated. For reaching at the next purpose of the project regression analysis in the SPSS was used to specify the rate of criteria correlation to each other. Based on the result Narmak neighborhoods is a vital neighborhood that is the result of contemporary times planning.

Keywords: neighborhoods fields, neighborhood, vitality, Narmak

Received 10.10.2016

Revised 17.10.2016

Accepted 01.11.2016

INTRODUCTION

Joyce and vitality is lost in the urban life. For different reasons Tehran city has lower vitality, though a principal part of this approach is due to the difficult conditions of life, but urban places are not ineffective. Vitality should be considered as a main subject in creating vital urban places. By trafficking of citizens in the streets and different places and using public facilities they can be livid and vital. Levity has two processes. One process depends on insight and culture of people and their perception and the other is related to urban and architectural places that these two processes are mutually related [1]. Neighborhoods are considered as part of cities that have the most interactions, actions and social relationships. They have an important role in neighborhoods vitality and existence of good and adequate public places. These places with their attractiveness and influence on human mind supply vitality of the neighborhoods [2]. Along with developments in urban textures in the contemporary time and replacing new urban texture instead of old urban places, the role and place of urban neighborhoods is very important. The process of forming old places that was formed during a long term period is so that it should response to the personal and social needs of inhabitants, but it seems that changing in different economical, social, environmental and physical conditions of cities in general and in neighborhoods in special has considerable negative impacts on their efficacy in responding the needs of inhabitants [3]. In today's neighborhoods social interaction of inhabitants is very little. Though this issue is the result of type and method of life, but lack of necessary places for forming these interactions is considered a very influential factor. If we consider the city as an alive creature for rest of the life it needs vitality and lividity. Role of city environment or the space that in the place of citizens social interactions forms and culture of society grow in that center and in our country it is declining day by day [4]. In the old neighborhoods, fields and their centers are considered as forming places of inhabitant's social interaction and played the most important role in vitality of neighborhoods. Such public place is one of the signs of physical and social health in the city and free and equipped public places that are formed in the public spaces should

be separated in the environment of metropolises. Lack of public places and replacing them with private and expensive places shows lack of physical and social health that influences vitality in the neighborhoods to a great extent. Meanwhile influence of physical factors in forming active and dynamic societies is more influential than the other factors. Unfortunately in today's neighborhoods because of lack of such elements vitality of neighborhoods decreased.

To sum up the rising issues in this study that dealing with them forms structure and their orientation specifies appropriate structure with case studies and finally offers strategies. Following issues are discussed:

- Among different city spaces in creating vitality in the neighborhoods, what is the role of field as a forming space in inhabitants' social interactions in the neighborhoods?
- As field plays an influential role in primary design of Narmak neighborhood, is Narmak a vital neighborhood?

Narmak neighborhood in Tehran is of the neighborhoods that in spite of passing a long term are considered as one of the contemporary neighborhoods, and at first it was formed based on correct principles of urban planning. Urban planning correct structures are appropriate distribution of performance and also appropriate spaces represent precise planning in designing this area. Communication networks are formed by consideration of hierarchies in the neighborhoods and performances are distributed precisely and correctly. The performing dimension of each servicing element is related to daily or weekly needs or in a longer times based on their distance from housing and based on access type is was specified that itself is a type of gathering and city concentration or accumulation .

Based on what mentioned the general purposes of this research are identifying the concept of vitality and dimensions and indexes. In addition, evaluating the role of neighborhood as physical factor plays an influential role in neighborhoods vitality that according to the purposes of this study we face two hypothesis that are:

- It seems that field is the most key element physical factor in city neighborhood vitality.
- It seems that Narmak Neighborhood for having field in the primary design of the place is a vital neighborhood.

The most influential research method in this study is the method of evaluation.

Geographical situation of the studied area

Narmak neighborhood is multi angle place that is formed from north eastern part to west eastern part and by having disorder in angles is placed in the eastern part of Tehran. Narmak is situated in to municipal districts and its larger part is situated in the lower part of Resalat area that belongs to district 8 and a part of Narmak that is situated in the north of this area is placed in the district 4. This type of division causes some problems respecting city management in relation to real situation of neighborhoods that should be considered [5]. The studied area of this research is the southern part of Resalat highway that is places in the area of district 8.

RESEARCH METHODOLOGY

This study contains 9 main criteria that are: 1. Readability, 2. Sense of dependency, 3. Social interactions, 4. Passenger way, 5. Green spaces, 6 economical growth and 7. Security that each criterion benefits some indexes (28 indexes that are shown in table 2). Based on the factorial analytical method of analysis these indexes are summarized to an acceptable number of factors to be useful in the next stage for regression analysis. In preparing questionnaire no pre established questionnaire is followed for preparing questionnaire. But from among used cases in different reports measuring the quality of life and measuring identity are used for preparing the main structure of questionnaire. This questionnaire is coordinated based on the environment of Narmak and is in line with statistical methods. Respondents were asked in 5 point Likert scale to see whether they are very satisfied with different factors related to vitality, or they are satisfied , have no idea, dissatisfied or they are very dissatisfied. Data collection was done using several methods that here using interview methodology for its strength was used against other methods.

For population of 140000 individuals with 10% error and insurance level of 95% 130 individuals were selected as case study to be able to generalize the results of survey to the entire society. Testing hypothesis was achieved using multivariable linear regression and Topsis model. To decrease data and summarizing them in this study the factorial analysis was distinguished an appropriate technique. For this reason Bartlett and KMO test were used. Information related to these two tests are inserted in the following table.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.601
Bartlett's Test of Sphericity	Approx. Chi-Square	2235.395
	df	1081
	Sig.	.000

Result shows that the number of samples and data are appropriate for factorial analysis. KMO test was 0.601 that indicates that numbers of samples are adequate. On the other hand Bartlett test shows that we can ensure that samples are taken from population that these variables are correlated in it.

Table 2: criteria and indexes of factorial analysis

	Number	Loaded variables	
		Name of variable	Correlated coefficient
Factor 1	1	Rate of satisfaction toward security	0.763
	2	Rate of security of women and children transportation at night	0.609
	3	Rate of light in the ways in the night	0.535
	4	Rate of Parks security and public places such as fields	0.495
Factor 2	1	Rate of registering positions of neighborhoods in the mind of inhabitants	0.636
	2	Knowledge about limitation and borders of neighborhood	0.636
Factor 3	1	Rate of intention to life in the neighborhood in the future	0.801
	2	Rate of intention to change the place of life	0.764
	3	Rate of influence from farness from neighborhood	0.732
	4	Rate of dependency sense to the neighborhood	0.641
	5	Rate of satisfaction toward life beside other co-neighbors	0.402
Factor 4	1	Rate of neighbors aid	0.714
	2	Rate of relying on the aids of neighbors when arising problems	0.701
	3	Rate of familiarity with neighbors	0.64
	4	Rate of intention to select friends from among neighbors	0.614
	5	Rate of up holding ceremonies in the neighborhood's public places	0.482
Factor 5	1	Rate of spending spare times in the neighbor hood	0.587
	2	Rate of walking in the streets and public places in the neighborhood	0.498
	3	Rate of referring to other neighborhoods for spending spare times	0.46
	4	Rate of existence of appropriate places in the neighborhood	0.42
	5	Rate of satisfaction toward quality of mosaic king the neighborhood	0.42
Factor 6	1	Rate of influence of green area in the presence of people in the fields and public places in the neighborhood	0.711
	2	Rate of impacts of green spaces in Joyce and vitality of inhabitants	0.653
	3	Rate of satisfaction toward quality of the green area in the neighborhood	0.551
	4	Rate of distinguish in the neighborhood for having green space in comparison to other neighborhoods	0.45
Factor 7	1	Rate of supplying daily needs in the neighborhood	0.56
	2	Rate of supplying awareness needs in the neighborhood	0.46
	3	Rate of supplying macro needs	0.42

RESULTS

Analyzing vitality factors and measuring them about Narmak and its subsections in three parts of factorial and regression analysis and Topsis method that we refer to them in detail.

Topsis method:

In the process of data analysis and proving research hypothesis about measuring vitality of Narmak neighborhood generally we divide sub-places that Topsis method is used for them. This method for the first time was introduced by Hoang and Ion in 1981. Topsis is based on this concept that the selective element should have the lowest distance with ideal positive solution and lowest distance with negative ideal solution. In this method m item can be evaluated by n index and each issue can be considered as one engineering system containing m point in a n dimensional space. In table 3 result of questionnaires about each index and results of Topsis model is shown.

Table 3: results of Topsis model and frequency of each index

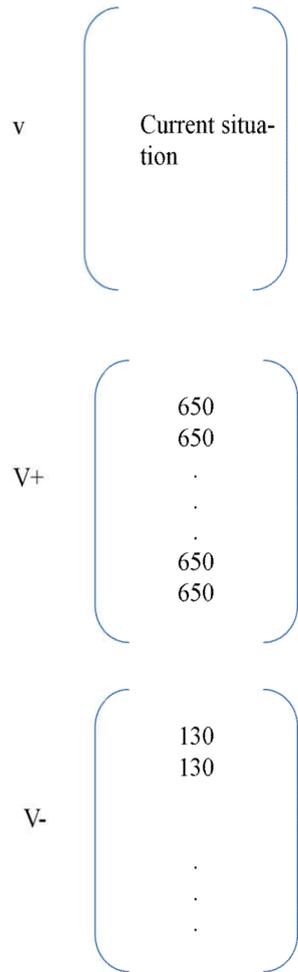
Criteria	Valid	Results of Topsis model calculations
Rate of familiarity with neighbors' index	Average	0.59
Rate of neighbors aid when there is problem	Average	0.42
Rate of relying on the aids of neighbors when arising problems	High	0.42
index of the rate of intention to select friends from among neighbors	High	0.59
rate of up holding ceremonies in the neighborhood's public places	High	0.56
Index of the rate of spending spare times in the neighbor hood	Very high	0.65
Index of the rate of walking in the streets and public places in the neighborhood	Average	0.63
Index of the rate of adequate ways of walking in the neighborhoods	High	0.63
Index of the rate of satisfaction toward quality of mosaicking the neighborhood	Average	0.63
Index of the rate of spending spare times in the other neighborhoods	Average	0.49
Index of the rate of dependency sense to the neighborhood	Very high	0.78
Index of the rate of intention to life in the neighborhood in the future	Very high	0.74
Index of the rate of intention to change the place of life while better economical conditions	Very high	0.78
Index of the rate of influence from farness from neighborhood	Very high	0.66
Rate of satisfaction toward life beside other co-neighbors	Very high	0.76
Index of the rate of supplying daily needs in the neighborhood	Very high	0.75
Index of the rate of supplying awareness needs in the neighborhood	High	0.65
Index of the rate of supplying macro needs	Average	0.43
Women and children transportation index	Average	0.65
Index of security and public places in the neighborhoods	Average	0.65
Rate of security of women and children transportation at night	Average	0.53
Rate of satisfaction toward security	Average	0.53
Index of rate of influence of green area in the presence of people in the fields and public places in the neighborhood	High	0.75
Index of the rate of impacts of green spaces in Joyce and vitality of inhabitants	Very high	0.77
Index of the rate of satisfaction toward quality of the green area in the neighborhood	High	0.75
Rate of distinguish in the neighborhood for having green space in comparison to other neighborhoods	High	0.73
Index of the rate of registering positions of neighborhoods in the mind of inhabitants	High	0.77
Index of the rate of Knowledge about limitation and borders of neighborhood	Very high	0.75

In the similar method Topsis calculations are represented in table 4.

Table 4 calculations using Topsis method

name/size	positive size	negative	v-v+	v-v-	v-v+ ²	v-v- ²
471	650	130	-179	341	32041	116281
439	650	130	-211	309	44521	95481
410	650	130	-240	280	57600	78400
504	650	130	-146	374	21316	139876
435	650	130	-215	305	46225	93025
445	650	130	-205	315	42025	99225
608	650	130	-42	478	1764	228484
533	650	130	-117	403	13689	162409
516	650	130	-134	386	17956	148996
484	650	130	-166	354	27556	125316
537	650	130	-113	407	12769	165649
313	650	130	-337	183	113569	33489
522	650	130	-128	392	16384	153664
584	650	130	-66	454	4356	206116
524	650	130	-126	394	15876	155236
476	650	130	-174	346	30276	119716
513	650	130	-137	383	18769	146689
440	650	130	-210	310	44100	96100
353	650	130	-297	223	88209	49729
410	650	130	-240	280	57600	78400
412	650	130	-238	282	56644	79524
423	650	130	-227	293	51529	85849
434	650	130	-216	304	46656	92416
470	650	130	-180	340	32400	115600
469	650	130	-181	339	32761	114921
459	650	130	-191	329	36481	108241
408	650	130	-242	278	58564	77284
404	650	130	-246	274	60516	75076
379	650	130	-271	249	73441	62001
476	650	130	-174	346	30276	119716
447	650	130	-203	317	41209	100489
387	650	130	-263	257	69169	66049
540	650	130	-110	410	12100	168100
469	650	130	-181	339	32761	114921
531	650	130	-119	401	14161	160801
523	650	130	-127	393	16129	154449
520	650	130	-130	390	16900	152100
472	650	130	-178	342	31684	116964
354	650	130	-296	224	87616	50176
460	650	130	-190	330	36100	108900
402	650	130	-248	272	61504	73984
409	650	130	-241	279	58081	77841
439	650	130	-211	309	44521	95481
437	650	130	-213	307	45369	94249
413	650	130	-237	283	56169	80089
414	650	130	-236	284	55696	80656
362	650	130	-288	232	82944	53824

Applications in Topsis method



$$d_i^+ = \left\{ \sum_{j=1}^n (V_{ij} - V_j^+)^2 \right\}^{1/2}, i = 1, 2, \dots, m$$

$$\text{Sum}(v-v)^{.5} = (1947982)^{.5} = 1395.701$$

$$d_i^- = \left\{ \sum_{j=1}^n (V_{ij} - V_j^-)^2 \right\}^{1/2}, i = 1, 2, \dots, m$$

$$\text{Sum}(v-v)^{.5} = (5171982)^{.5} = 2274.199$$

$$C_i^+ = \frac{d_i^-}{(d_i^- + d_i^+)}, i = 1, 2, \dots, m$$

$$C^- \quad 1395.701 \quad 2274.199 \quad 1395.70 - 0.65$$

Multi variable regression analysis

In this stage of analysis to evaluate the role of neighborhood fields in vitality of Narmak neighborhood multivariable regression analysis was used. Accordingly vitality of the neighborhoods a dependent variable and factors of factorial analysis are considered as independent variables.

Following table shows multiple correlations of independent variables with dependent variables of (security factor, readability, sense of dependency, social interactions, economical growth, passenger based way, green area). Based on the following table we can say that correlative coefficient is 0.789 that intensity of relationship between environment vitality and variables are the same. R square is 0.687 that is 68.7% and evaluation of vitality to research variables depends on research variables and other 31.3% depends on other factors that are not inserted in the model.

Table 5: multiple correlation between dependent and independent variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.789	0.687	0.608	0.729	2.095

F test shows significance of regression and linear relationship between variables (Kalantari, 2006, p.182).

Table 6: F test results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64,170	8	21.390	40.227	0.000
	Residual	38,817	121	0.532		
	Total	102,987	129			

Reference: researcher calculations

Based on the upper table level of sig was 0.000 that shows regression sig at the 99% level.

Main result of regression is specified in the following table. Beta column in this table as coefficient are used for predicting Y in the regression equation.

Table 7: Regression relationship between dependent and independent variables

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.558	.09		.000	0.000
security	0.546	.09	0.560	5.3	.100
Readability	0.283	.09	0.290	3.2	.400
Sense of dependency	0.630	.09	0.645	7.56	.000
Social interactions	0.703	.09	0.733	9.95	.000
passenger based way	0.678	.09	0.680	8.02	.010
Green spaces	0.519	.09	0.520	5.3	.000
Economical growth	0.617	.09	0.620	6.6	.010

a. Dependent Variable: Sarzendegi

0.7703+2.558-y Sense of dependency +0.678 readability +0.630 green space+ 0.617 economical growth+ 0.546 passenger based way+ 0.523 social interactions+0.283 security+ tolerable capacity

In this table t for the entire regression coefficients as calculated and level of significance is represented in the last column. As the level of significance shows impact of variables of Sense of dependency, readability, green space, passenger based way and Economical growth has a higher sig level than security, and social interactions. This issue shows that in the case of vitality in the Narmak neighborhood these criteria have a high importance. In the case of role and importance of independent variables in predicting regression equation beta values should be used and as the rate of Beta is standardized through them it is possible to judge about relative importance of variables.

Based on the information in the table 7we conclude that criteria of sense of dependency and readability and green space has a higher share in comparison to other variables in vitality of Narmak neighborhood. As mentioned before, urban designation of Narmak neighborhood is 100 small fields and as these fields are the most important cannons of forming social interactions in the area, therefore, discussions about

inhabitants social interaction in Narmak has a high potential and as mentioned in the upper equation after three stated criteria, social interaction criteria has a great influence in discussions about vitality in Narmak. The next important criterion is passenger based way in the neighborhood. Passenger based way in Narmak with sub criteria like rate of walking in the neighborhood, quality of mosaicking and furnishing the city and appropriateness of fields and other public places in the neighborhood for different ages. The 100 field of Narmak in the texture are the most important factor in attracting inhabitants and referees of Narmak to the passenger ways. Appropriate quality of mosaicking pursued people to use passenger ways in Narmak. The next criterion is the result of field studies of the researcher and in the upper model one that is posed as a main criterion is economical growth and according to the existence of business centers it is a logical center.

Readability and security are other criteria for measuring vitality in Narmak that according to their coefficient importance they are represented in the regression model. Based on coefficients of these two criteria for promoting vitality in Narmak they should be considered.

By calculating the importance coefficient each of these criteria and based on the specification of their scores in the case of Narmak neighborhood measuring vitality in line with other evaluations and analyses can be formed. Table 8 represents situation of the entire indexes and criteria about Narmak neighborhood. As it is clear vitality of Narmak neighborhood has a score as much as 0.65 that represents average and high condition.

Table 8 (criteria score)

Criteria	Ideal conditions	Current situation
Social interactions	1	0.6
Passenger based way	1	0.59
Sense of dependency	1	0.7
Economical growth	1	0.6
Security	1	0.59
Green space	1	0.73
Readability	1	0.75

Narmak neighborhood is based on sense of dependency with 0.7 score that represents high achievement condition. Two criteria of green space and readability with scores of 0.73 and 0.75 are in similar conditions than each other. As 78 percent of Narmak inhabitants are resident for more than 20 years and also existence of 100fold fields in the neighborhood for creating differentiation and efficiency of fields from green spaces results seems to be realistic. As result shows in the case of social interactions score of Narmak neighborhood is 0.6 that means closeness to the high position. This happens when economical growth criteria and passenger based way with scores of 0.59 and 0.6 in the approximation situation they are similar.

Current conditions of security in the neighborhood are in an average position. The Narmak challenge is the issue of security in the place. Neighborhood fields in this case are as strength in increasing social interactions and they are considered as a threat for gathering of rambler therefore the issue of security is serious challenge of Narmak. Following table shows influential criteria of on vitality in the Narmak neighborhood based on Likert spectrum.

Table 9: condition of criteria based on Likert spectrum

Criteria	Very low	Low	Average	High	Very high
Social interactions					
Passenger based way					
Sense of dependency					
Economical growth					
Security					
Green space					
Readability					

DISCUSSION AND CONCLUSION

Testing first hypothesis

First hypothesis of this research is:

It seems that field as a key physical factor and as it is the canon for forming social interactions is influential in city neighborhood vitality.

To prove this hypothesis regression analysis is used. According to the regression analysis in this study the following results achieved:

In the primary analysis adjusted determination coefficient of the model shows that seven factors in this model are considered as independent variables that are more than 68% and changes of dependent variable is discussed. The same result shows that neighborhood fields are influential in vitality of neighborhoods. Because independent variables that are used in this model are achieved by common agreement between features of fields and vitality criterion. Beta coefficients in regression coefficients specify importance of each factor in changing the rate of vitality of the neighborhoods. To the extent that this value is higher the same factor is influential in judging the mind of inhabitants than general vitality based on situation of fields. Based on the positive primary criteria coefficient we conclude that increasing each criteria increases vitality. Therefore we conclude that factor of the sense of dependency, readability and green space has the highest correlation. Now the issue of security has the lowest rate of dependency that by need for interference in this area for increasing the rate of vitality in the neighborhood was necessary.

Second hypothesis of this research is:

It seems that Narmak Neighborhood for having field in the primary design of the place is a vital neighborhood.

For testing this hypothesis Topsis method was used. For this reason indexes and influential variables on vitality that are basis for questions of the same questionnaire were analyzed precisely and rate of achievement of each of them in the current condition of Narmak was analyzed using Topsis method. Result and deep interviews with inhabitants proves the correctness of this hypothesis. Though current condition of some indexes in Narmak is far from the ideal limitation, but according to the calculations in the Topsis method and its algorithm rate of Narmak vitality is about 65% that the same issue represents vitality of Narmak. Hypothesis of the same study that are related to the conditions of neighborhood fields in vitality of neighborhoods and measuring the rate of vitality in Narmak and based on what analyzed was specified. Results are offered as follow.

- High percentage of Narmak inhabitants has long experience in residency in the neighborhoods. For this reason most of them have high sense of dependency and little tendency for leaving the neighborhood and changing the place of residence.
- In the case of supplying macro, daily and awareness needs in which a great part of inhabitants needs in the neighborhood is supplied.
- Narmak urban designing with having 100 small fields as subfield centers in addition to providing neighborhood differentiation than other neighborhoods in the view of inhabitants is considerable. For example respecting remembrance, dependency, spending the spare time and sign elements in the neighborhood.
- Benefiting the entire fields from green space increased Narmak green space per capita than other neighbor places in the district 8.
- Though Narmak fields changed the face of neighborhood than other places but for high similarity of fields in the formal form for unfamiliar individuals provide some problems for the neighborhood. While inhabitants in this field sense little difficulty.
- These fields are the most important canons for forming social interactions of inhabitants and inhabitants of the neighborhood spend a considerable part of their time in them.
- Respecting formation of social interactions fields have a twofold nature and are considered as opportunity and threat. Closeness of Narmak to insecure neighborhoods considers this threat as an important factor so that fields are considered as citing places of rambler youth. This issue is very influential in insecurity of the neighborhood and endangers the security of the neighborhood.

According to findings of the research we can say that Narmak is a vital place, because it benefits principles and criteria of security, readability, sense of dependency, social interaction, passenger based way, economical growth and green space.

REFERENCES

1. Golkar , K. (2007). Noted that the quality of urban design, platform Quarterly No. 44 , pp. 66 to 75 .
2. Chapman , D (2005).The creation of neighborhoods and places in man-made environments , translating she screamed and M. Tayebi , Tehran University Press .pp90.
3. Azizi , M. (2001) . The density in Urbanism - the principles and criteria established urban density, Tehran University , Tehran .

4. Khasto, M. (2010). The factors affecting the vitality of urban spaces, creating a lively urban environment with emphasis on the concept of " shopping center on foot " , Journal of Identity , number 6 , page 63 .
5. Lynch , Kevin (1997).Tthe theory of good city form , translated by M. ornate , Tehran University Press . Consulting Engineers Manystar Parsineh ,2008-2010 , Tehran neighborhood of the identity of the structure plan .