



An Analysis on Social Costs of Urban Expansion Patterns Case Study: Metropolitan Area of Tabriz, Iran

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ABSTRACT

Problem statement: Considering the inevitable rapid growth of urbanization, anticipation of the same trend will during next decade and the flows caused by this growth result in displacement, settlement and concentration of population in large cities, the purpose of this research is to find the best type of urban expansion having the lowest social costs. **Approach:** In order to compare the continuous and discrete expansion in two forms of planned and spontaneous, a 2×2 matrix was considered. Then four samples selected. After determining the effective parameters based on the concept of social capital and calculating the weight of criteria by the method of hierarchical analysis, the social costs of expansion in each the samples was assessed. **Results:** Taken environments creation which less social cost into a count, it has been proved that manager and urban planner have been more unsuccessful than private and unofficial selection of people to create environments with less social costs. In addition, base on the result, no ever the continuous expansion has less social costs than the discrete expansion. The results from mutually comparison of criteria verify that the existence of ethnic groups and family in the origin and after that, presence of job and educational opportunities have the main role in creating social capital in the location and reducing the social costs. **Conclusion/Recommendations:** However there is no transfer possibility of population groups to these new regions in order to establish ethnic and kinship groups but, at least we can create official social groups and public places and the more importantly we can supply occupational and educational opportunities in these cities.

Key words: Social capital, urban expansion, social costs, social networks, educational opportunities, homogeneity, public places, official social groups, social issues, urban population, social capital, sole attitude.

INTRODUCTION

We know the sole attitude of urban planning to Physical-functional dimensions of city regardless to social and economic goals and social norms has faced the philosophy of existence of cities as a locality to live with serious doubts, So that the main criticism against this type of planning have focused on objectives and Social and qualitative values or in other words the habitability of cities (Kokabi, 2005); in fact, that includes the social aspect of sustainable development. Interest and willingness to discuss about sustainability is related to two Subjects that is the confluence between human desires and nature superiority: ecologies with emphasis on global ecology and humanism with the emphasis on welfare and rehabilitation (Mohammadi *et al.*, 2005).

Mumford believes that the cities have been developed haphazardly and problems of urban lifestyle, do not offer any opportunities for revealing human values and the cities have been become a space to work and sleep and do not have social solidarity (shieh, 2003). Urban development is a process which has close relationships with the management factors. Scientific management is the most important matter that can be effective in the social participation, protection of urban environment, economic and social issues (Seyyed, 2004). On the other hand, poor urban governance is visible in urban distribution, Lack of affordable housing, undeveloped transportation system and destruction of green space. By improving urban governance, high quality sustainable cities will be provided to citizens (Raise-eu, 2005).

It should be noted that the process of urbanization due to special reasons generally in developing countries and specifically in Iran rapidly has led to become metropolitan and polarized (Ali, 2004). In 2006, Tehran metropolis along with four other traditional metropolitan and Karaj that newly has joined to this collection, have been

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embedded more than 15 million urban population of Iran, it means 32.8% of total population. If we add the population of seven cities with over 500 thousand people to this figure, this figure will exceed over 43.1% of country's urban population.

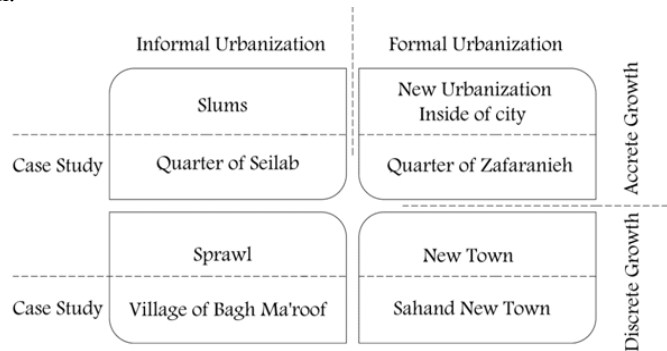


Fig. 1: Case selection matrix

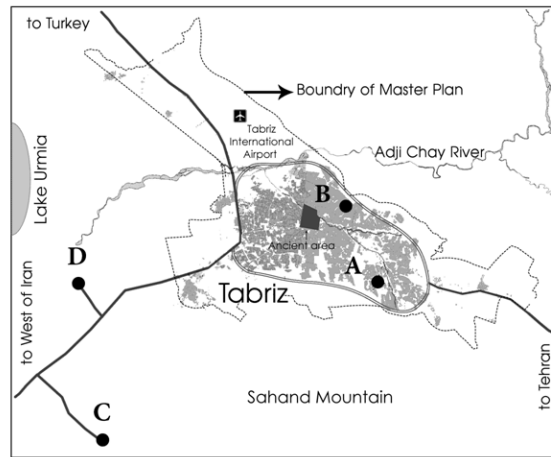


Fig. 2: Location of selective case in metropolitan area of Tabriz

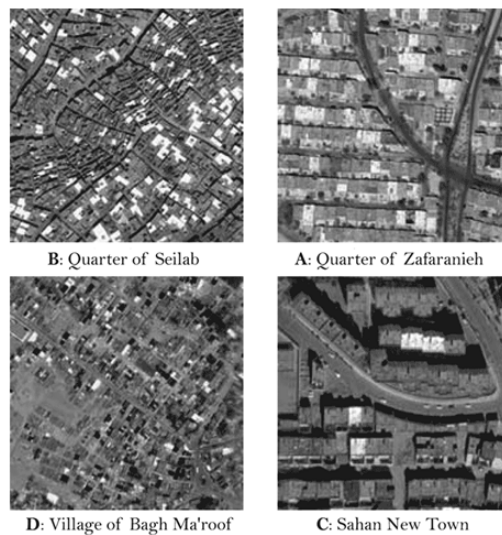


Fig. 3: Satellite Image of selective case

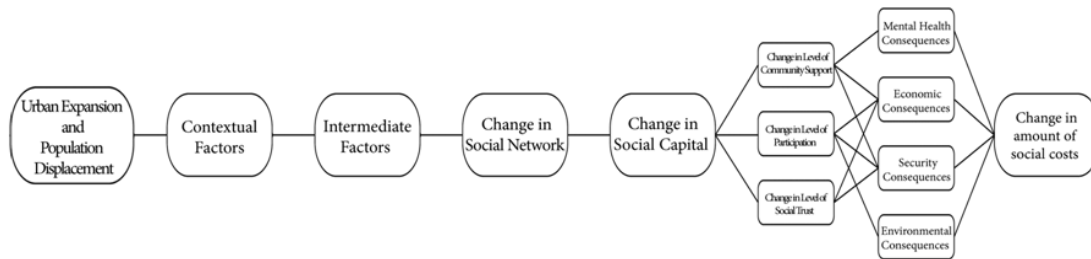


Fig. 4: Social costs of urban expansion and population displacement (reference: authors)

While the others population centers of country namely the city, have embedded less than 57 percent of the urban population totally (Statistical Center of Iran, 2006).

According to the mentioned contents, undoubtedly, we cannot resist against the flows caused by demographic developments, deployment, distribution and displacements to achieve more desirable life conditions and ignore their consequences (Seyyed, 2004). Considering the inevitable phenomenon of urban growth and development in third millennium, this question is proposed that what is the best form of urban development that has minimum social cost? This article is intended in addition to answer these concerns; evaluate the role of urban managers and planners in this field. To evaluate the social costs of city expanding the concept of social capital was used and meanwhile defining the concept of social capital, its relationship with general social life costs and habitability of cities was investigated.

Social capital and costs of its lack: The concept of social capital is an interdisciplinary concept learned that has been noted in many fields of humanities during the past fifteen year. This concept generally focuses on the relationship between humans (Elmi *et al.*, 2005). Social relationships are considered as core of society and cause the operators by expanding linkages facilitate their actions in the community structure and thereby achieve their goals (Bastani and Heykuei, 2007). Social capital is regarded as a source for “collective action” includes norms of trust (public trust or generalized and institutional/civil trust), norms or behaviors of mutual exchange that Act within the social networks and structural elements of networks and formal and informal partnerships (Nateghpour and Firoozabadi, 2006).

Social capital in the general sense is a kind of investment in social relations which is defined with the expected efficiency on the market. However, the term market is metaphorical term and its range in various analyses can be economic, political, social or labor market, in which people by engaging in social interactions and networks produce the expected benefits (Tavassoli and Mousavi, 2005). Social capital is assumed as a source resulted from social relations and norms embedded in social network; this source enables people to coordinate action to obtain the desired objectives (Borgada *et al.*, 2002). According to network analysis theory social relationships and linkages are as social capital and individual assets. People can access to available resources and supports in the linkages thorough it (Bastani and Heykuei, 2007). According to that, social capital is a good private asset that individuals accumulate and use them to achieve their goals (Akbari, 2006). To prevent plurality in definition of social capital, differentiation between resources and results and outcomes is necessary. In fact social capital resources are the networks and institutions. The results of this capital that are norms, trends and values are formed by the relations among these networks and institutions. One of the most important results of social capital is trust where some studies have named trust as an alternative to social capital (Elmi *et al.*, 2005).

Various studies show that when social capital reduces the social and economic costs of life increase. So that if social capital can facilitate to achieve general results and create cooperation manners, we can know it as a creator of or equivalent of material and human capital (Souri, 2005). Social capital as a complicated and complex nature has effects on mental quality of individuals based on protective effects of social Links (Behzad, 2002; Almedom, 2005). Elmi *et al.* (2005) studied six ways of influence of social capital on economic indicators. The main emphasis of researchers has been on the basic factor of trust. Firoozabadi and Imani (2006) by studying the relationship between the seven elements of social capital and the level of development of zones in Tehran, concluded that they have a positive relationship. Negative relationship between social capital and crime and delinquency (Aliverdinia *et al.*, 2008) and positive relationship between social capital and the general feeling of safety has been proven (Wood *et al.*, 2008; Sharp and Smith, 2003). Pretty and Waed (2001), by regarding various aspects of social capital like trust, interaction, collective role and institutional affiliation, assessed the role of social capital in protecting environment.

Social costs of urban expansion: Despite Urban expansion has environmental effects that the main of them is land consumption, it doesn't have social costs but, population displacement is the first consequence of urban expansion

that affects social networks and social capital. Jane Jacobs in her book “The Death and Life of Great American Cities” explained that intensive social networks form a kind of social capital within old and complex urban areas and show more responsibility in maintaining cleanliness, absence of street crime and other decisions about improving quality of life in comparison of official institutions such as police agents. Do the new urban areas consist the same kind of social networks mentioned by Jacobs? Glaser, Libeson and Sakrodet concluded in their studies that mobility and movement of residence and organizational membership are negatively related. People, who change their residence, will lose their social capital and are less interested in investing on it (Nateghpour and Firoozabadi, 2006). But people can start to accumulate capital in new location, but some individual and environmental factors affect on the process of formation of social capital:

- Proximity: social and cultural relations occur in space, thus the social life is located in space and is limited by it (Talebi, 2004). Social relations and consequently social capital are sharply decreased by increasing in distance (Ranani *et al.*, 2006). Even the sudden and massive transfer of population can cause negative effects on social capital on surrounding neighborhoods (Barghamdi, 2008). Putnam and other authors believe that living in low-density areas with reduced social interaction reduce social capital (Brueckner and Largey, 2008)
- Homogeneity: Proximity can cause launching of relationship but isn't the sufficient condition and to maintain these relations somewhat of homogeneity is necessary (Talebi, 2004). Other factors in this field are linguistic and ethnic assimilation (Glaeser, 2001; Fidrmuc and Gerxhani, 2005)
- Time: It's obvious that lack of time reduce social capital. For example Putnam (2005) mentioned that watching TV, daily suburb-city travels and full-time occupation have negative effects on social capital due to decrease spent time in social dealings. Glaser, Libeson and Sacrodet also believe duration of staying in a community largely effect on social capital (Nateghpour and Firoozabadi, 2006). Glaser (2001) believes that the shortage of consumed time on interactions because of different personal and environmental reasons is a reason of reduction of social capital
- Individual determination: the amount of fixation to the environment also affects on formation of social capital. De Pasqual and Glaser (DiPasquale and Glaeser, 1999), have been investigated the issue about the ownership of house and its relation to social capital. They believe ownership hinders mobility and fluidity of population and it is also a motivation for considering security of environment, establishing relations and social networks. Some individual factors also affect the formation of social capital, including age, education level, behavior, attitudes personal talent, religion and cultural patterns and ultimately the family (Nateghpour and Firoozabadi, 2006)

MATERIALS AND METHODS

In this study first, factors that influence changing the social networks of individuals due to displacement location are identified according to earlier theories and studies. Then measures or contextual factors affecting on each extracting factors and individual measures that environment is non-effective on them, were omitted. Then, a 2×2 matrix was established to compare continuous and discrete expansion in two cases of planned and spontaneous.

This case selection matrix was invented by “Handy” in 1992 (Masnavi, 2002). Each cell represents a specific type of expansion based on “continuity” and “urban management role”. In order to make the discussion more objective, a sample is considered for each houses of quad and you see that in the chart. To compare measures, hierarchical analysis was used and specific value of each item was identified based on ranking of the regions comparing to each other. Ancient area of the city was used as a witness sample. Quarter of Zafaranih (A) that is located in the southeast of Tabriz is accounted as urban expansion areas occurred after revolution. Quarter of Seilab (B) in the north of the city is located in slum areas. Sahand new town (C) is located 20 km far from Tabriz and had 13610 inhabitants in 1385. Population of Bagh Ma'roof (D) the biggest village in Tabriz County, increased from 2484 person to 7962 person (more than 3 times) during 10 years (Zaheri, 2008).

RESULTS

Social costs of various urban expansion: Social capital reducer criteria caused by population displacement and effective criteria in new regions on re-establishing social capital were used In order to evaluate the social costs of various urban expansion . For this purpose, related criteria to the topic were excluded by summarizing the theoretical studies. Then the social costs of urban expansion in selective region were evaluated according to these criteria and compared to old quarters of the city.

Summarizing the theoretical studies and selecting criteria: By considering above, we understand urban expansion that is accompanied with population displacement causes the reduction of social capital due to having

negative effects on social networks based on network theory. According to researches about social capital and social costs, urban expansion increases the social costs of expansion.

The purpose of contextual factors in the chart of urban expansion and social costs is seven parameters affecting the social networks and social capital which are extracted from theoretical discussions. Six out of the seven factors are effective factors on formation of social capital in new location which are selected based on four main factors shaping social capital mentioned in theoretical discussion. These six factors are topic of time including 2 categories, daily spending time and length of staying (population stability), proximity topic including 2 categories proximity in general sense the means region density and proximity on special sense means existence of popular places encouraging social relations, homogeneity topic and fixation topic. The Seventh factor is distance that reduces social capital. Contextual factors are some variable circumstances dependent on person and environment that effect on each intermediate factor. Contextual factors about any of intermediaries include:

- Distance from the previous network: Distance between the previous residence and new residence and living a number of acquaintances and relatives in new location means being fore-member in local social networks
- Daily time spent in social interactions: Employment or education site distance, presence or absence of basic daily public services in the location, distance to location of acquaintances and first degree relatives that can cause daily or weekly trips, along with individual factors such as way of life, individual lifestyle and disability
- Cultural homogeneity: distance between new and old residence, dwelling of some of acquaintances and relatives in new location and membership in ethnic and kinship groups
- Presence or absence of environments encouraging social interaction: existence of public place and social groups
- Fixation to environment: ownership of house, employment in location and other environmental parameters

Rate of migration was intervened individually to the population stability factor and urban crowding for density factor. Finally 13 measures or criteria were obtained. Six cases of these contextual factors are individual that means they are related to person and environment do not affect on them and are deleted. 7 factors are environmental means they are controlled by environment and their conditions must be evaluated in four selected areas.

Comparison of four selected areas based on contextual factors: The hierarchical analysis process is used in order to compare four selected areas representing two kinds of urban expansion, discrete and continuous expansion in terms of planned or spontaneous. This method is based on mutually comparison of criteria, it is used in this respect that the human brain does mutually comparison better, this method also is one of the best methods to rank qualitative data according to personal judgments or rank imprecise quantitative data (Taghvaie and Ghaffari, 2006).

For this purpose, first, the decision tree is formed that includes three levels of goal, indicators or criteria and alternatives. In this research, to determine the best type of urban expansion that has the least social cost (goal), ultimate seven criteria are used based on mentioned process above. In chart No.2 you can see mutually comparison of criteria matrix. Scale of measures importance to each other varied from value (1) for equal importance to value (7).

In order to do mutually comparison of parameters, effect of desired parameters in intervened in three main criteria of production or reproduction of social networks, that they are proximity, homogeneity and time and also in motivation criteria. Also it was considered that each measure were effective on how many contextual factors by how weight.

Table 1: Intermediate and contextual factors changing the level of social capital and their relation

intermediate	Intermediate factors	Contextual factors	Effect on Personal
1 Environmental Distance (from previous social network)	Distance from previous location Number of relationship in Present location *	*	Factor (4) Factors (4) and (7)
2 Time Time of spend in Social interactions	Occupation and educational opportunity Level of facilities Distance to location of relatives Way of life Lifestyle, Disability	* * * * *	Factor (7) - - - -
3 Population Stability	Rate of emigration	*	-
4 Homogeneity	Ethnic and kinship group	*	Factors (7) and (5)
5 Proximity Existing place for encourage of Social interactions	Public Places Public social organization	* *	- -
6 Density	Urban crowding	*	-
7 Fixation	Ownership of house	*	-

(Reference: The authors)

Table 2: Mutually comparison of Criteria and determination of their weight

Criteria	1 Occupation and education opportunity weight	2 Level of daily public services	3 Existence of Ethnic and kinship group	4 Number of place for encourage of Social interactions	5 Number of Public social organization	6 Rate of emigration	7 Urban crowding	Geometric mean	Final
1	1.00	4.00	0.33	4.00	3.00	5	5.0	2.35	0.24
2	0.25	1.00	0.20	1.00	0.33	3	3.0	0.76	0.08
3	3.00	5.00	1.00	5.00	3.00	7	6.0	3.70	0.37
4	0.25	1.00	0.20	1.00	0.33	4	4.0	0.83	0.08
5	0.33	3.00	0.33	3.00	1.00	5	5.0	1.58	0.16
6	0.20	0.33	0.14	0.25	0.20	1	0.5	0.30	0.03
7	0.20	0.33	0.16	0.25	0.20	2	1.0	0.38	0.04
							Sum	9.90	1.00

(Reference: Authors)

Table 3: the Score of four patterns of urban expansion and selective area in terms of criteria and compare them to Ancient area.

Contextual factors	The Score of selective area				
	Sahand	Bagh Ma'roof	Zafaranieh	Seilab	Ancient area
Occupation and education opportunity	1	4	2	2	5
Level of daily public services	1	3	2	4	5
Existence of Ethnic and kinship group	1	4	1	4	5
Number of place for Social interactions	1	3	3	5	5
Number of Public social organization	1	3	2	5	4
Rate of emigration	3	1	4	2	5
Urban crowding	1	3	2	5	4

After formation of Mutually comparison matrix, geometric mean of each measures were calculated and final weight of each measures was derived based on total equal to one (1). Then, the rank of each region in question (alternatives) in each measure was determined. As you see in Table 3, for more objective comparison the fifth alternatives, the Ancient area of Tabriz, was used as a witness. The procedure is that the highest value region in every indicator gets score 5 and the lowest value region gets score 1. In addition, areas with equal condition get equal scores. As you see, index number 3 namely "presence of ethnic and kinship group in location" has the most effect in creating or repairing of social networks and after that "presence of occupational and educational opportunities in location" and "presence of official social groups" are considered. It must be said that unlike other criteria, the migration index has negative effect so to correct it the ranks are implemented conversely, it means the highest migration regions get lower scores and vice versa. Then by implementation of derived weights from Table 2, the final scores of four regions and Ancient region of the city were calculated (Table 4) and comprised to each other.

According to the results of Table 4 and as previously in Jacobes view mentioned, Ancient area of the city has the highest advantage for constructing and maintaining of social network and accumulation of social capital. Among the four supposed types of expansion, non-official continuous expansion gets the highest score. Overall, continuous expansion than discrete expansion and more obviously informal expansion than formal and planned expansion have more facilities to create social capital. The main factor in prevailing informal settlement over formal settlement is having more "presence of ethnic, kinship and formal groups" indicator and the main cause of prevailing of continuous expansion over discrete expansion is having more "congestion and the number of public places".

Table 4: Final score of four patterns of urban expansion and Ancient area (score of Table 3 * weight of Table 2)

Contextual factors	Weight of Table 2	The Score of selective area				
		Sahand no.2	Bagh Ma'roof	Zafaranieh	Seilab	Ancient area
Occupation and education opportunity	0.24	0.24	0.96	0.48	0.48	1.2
Level of daily public services	0.08	0.08	0.24	0.16	0.32	0.4
Existence of Ethnic and kinship group	0.37	0.37	1.48	0.37	1.48	1.85
Number of place for Social interactions	0.08	0.08	0.24	0.24	0.4	0.4
Number of Public social organization	0.16	0.16	0.48	0.32	0.8	0.64
Rate of emigration	0.03	0.09	0.03	0.12	0.06	0.15
Urban crowding	0.04	0.04	0.12	0.08	0.20	0.16
Final Score	-	1.06	3.55	1.77	3.74	4.8

CONCLUSION

As it is said the purpose of this research is to compare forms of urban expansion from the standpoint of social costs. According to results, managers and urban planners have been more unsuccessful than private and unofficial selection of people in creating environments with lower social costs. As it is mentioned in introduction, the base of this literature can be recognized in sole consideration to physical aspects. It should be noted that better life is impossible by motion in the people's natural selection path regardless to the social dimensions of sustainable development.

The other point is that the negative view of urban managers towards the slum phenomenon is achieved due to the consequences of this phenomenon. Due to the existence of ethnic and kinship groups in peripheral regions, these areas are the best places for immigrants at the first stage because it imposes lower social costs to immigrants and the city. Ethnic and kinship groups are formed in special process and probably it is impossible to create it in other places synthetically.

Studies also show that the horizontal discrete expansion of Tabriz city, in both form of new town of Sahand expansion and unbalanced expansion towards surrounding villages, imposes more social costs than expansion within the area. Unbalanced expansion or development out of the area of the city or expansion in form of new towns due to distance factor, potentially are social capital reducer factor and increasing social costs factor. The current conditions over this process in Tabriz city and other similar cities are affected by other factors which considering them helps improve current conditions. Especially they must be considered about new towns. Sprawl and unplanned expansions are recognized in crowding in villages near the city. New towns are positioned by previous planning in a way that be better in case of environment and avoiding hazards and other spatial parameters. To achieve this target we can model the process of social capital formation in forms of inharmonious urban expansion. However there is no transfer possibility of population groups to these new regions in order to establish ethnic and kinship groups but, at least we can create official social groups and public places and the more importantly we can supply occupational and educational opportunities in these cities.

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