

Research Article

The Analysis of Social Ecology and Physical Development Process of Cities (Towns) Case Study: Alvand City

¹Heshmati Ahmad, ²Marsousi Nafiseh, ³Farhoodi, Rahmat-o-allat and ²Ali Akbari, Esmail

¹Department of Urban Geography, Scientific Group, Payame-Noor University, Iran

²Geography Scientific Group, Payame-Noor University, Iran

³Geography Scientific Group, Tehran University, Iran

Abstract: This study aims the analysis of immigration influence on Alvand city resident's economical and living situation and its subsequent effects on Alvand city's social structure and its ecology and even its adjacency to industrial Alborz city. This analysis focuses on Alvand city's physical development using the software techniques such as GIS and using population data resulted from immigration which effects its physical development. We have increasingly witnessed the job-looking based immigrations since 1966 to 2006 which appeared differently in social, physical and spatial structure. This alternation and newly different situation has been seen apparently. The president's economic situation and immigration issue which considered as the most essential factor resulting in the ecology movements concerning Alvand city's circumstances. Such a factor could be seen in cultural varieties in Alvand city. This study also analyzes the ecological factors such as the immigration, economical situation, ecological movements and its influence on physical development using the descriptive and correlational methods to prove whether there is a logical relation among varieties providing that this statement is confirmed, this relation will be able to describe and explain the correlations in the different forms. The results show that immigration has influenced the spatial distribution of social groups and physical development of Alvand city.

Keywords: Alvand city, ecological movements, physical development, social ecology, spatial distribution

INTRODUCTION

The ultimate objective of urban planning is to provide the citizens' welfare and achieve the urban sustainability (Katie and Vazar, 2004). Undoubtedly, any effort in this regard requires an understanding of citizens' ideas, cultures, ideologies, feelings, emotions and spirits and without this understanding the urban projects will become the abstract projects. Nowadays, city and urbanization has a very wide range of concept and application and the forces resulted from these concepts and applications have changed the view of city in a very different way from the previous cities and the cities has become inactive in dealing with the industrial phenomena and have not been constructed for accepting them. Therefore, the manifestations of industry will not be put in their appropriate position in life environment and a heterogeneous community of forces, factors and numerous needs are created and they will not seek to provide the citizens satisfaction. Ecological social study of city is a way to understand the city and citizens and their effects on each other. Indicators used in this study include the residents' immigration, ecological movement and economic status which can be effective in creating the ecological competition in order to capture the better urban places and make the specific

urban ecological structure. This study seeks to provide the understanding context of ecological, human and urban effect by geographical social understanding of Alvand city because by understanding the hidden aspects of city, its pathology can be better achieved and the interaction of human and city can be controlled and leaded in an established way. Evaluating this research shows that the social and ecological structure of Alvand city is due to the industrialism, which intensifies the immigration, creates the numerous social and economic movements in the physical development of Alvand city and these movements are created in different ways in the form of principled, unprincipled, marginal settlement, reconstruction and rural and urban development.

THEORETICAL BACKGROUND OF RESEARCH

Social ecological concept in the urban geography: Since the late 19th century, the social ecological concepts were considered by social scientists and the social scientists particularly in the urban sociology use them widely by comparing the various social groups with natural and plant species in their social analyses and by understanding the urban and regional phenomena (Fakouhi, 2003). Patrick Geddes, Mark

Jefferson, Patrick Abercrombie and Lewis Mumford are the pioneers in the field of applying this concept in urban studies. Shokouhi (1986) this concept was used by Chicago school of sociology. This concept was criticized due to generalizing the specific features of urban society of Chicago to all cities of the world and the absolute generalization of animal and plant living conditions in human environments regardless of the factor culture (Sharepour, 2008).

Since the mid-20th century, this concept has been used again in social, sociological and urban geographical sciences with a new approach and by considering the factor culture in the relationships of environment and human, so that it is studied in the Neo-ecologic doctrine by investigating the correlation between the social and economic structures, social stratifications and by utilizing the relevant indices (Fakouhi, 2003).

Immigration and social ecology: According to the study conducted by Cohen (2009), the immigration is a phenomenon which is done due to the reasons such as inadequate food supply in a particular area, religious or political persecution and pursuit, war, racial and national hatred and hostility.

Immigration refers to the people's geographical movement which is designed by a predetermined plan and led to the change of their residence for ever or a long time (Saroukhani, 1991).

Functionalist theory: This theory is based on the explanation and causes and consequences of immigration. This theory about the reasons for immigration emphasizes on this hypothesis that all social needs are learned within a framework of social system and functionalists believe the needs in a system, in which they cannot meet them, because the characteristics of making the social systems and functionalists have never been static over time and are varied or independent towards the input and output. Therefore, the necessary changes may occur in order to reduce the inconsistency between the feeling of need and ability to facilitate it in the functionalist or system or both of them. Understanding the inconsistency between the individual characteristics and the social system will lead to the individual's immigration in order to reduce the structural inconsistencies (Gravand, 2007).

Immigration dependency theory: Adherents of Immigration Dependency Theory believe that the immigration is caused by the unequal development and on the other hand it is the factor for spread of inequality deepening. About finding the reason for the immigration from the village to the city or village to village in the third world, the adherents of this theory believe that the development should be first taken into account and in this regard the structural and spatial

inequalities among the segments of society should be considered (Gravand, 2007).

Everett-S-Lee Theory of adsorption and desorption, 1966: He introduced a theory about the immigration which explained the immigration according to four main factors. (Mohammad-Hosseini and Mohammad-Amir, 2001):

- Factors available in the origin (provocation and deterrence)
- Factors available in the destination (provocation and deterrence)
- Barriers in migration from origin to destination
- Personal reasons

His theory is known as the Repulsion and attraction theory; on this basis the outcome of positive provocation and deterrence factors will lead to the immigration by the individual and if the person is not able to eliminate this tendency and also the barriers to the immigration do not have the deterrent effect, the immigration is created and the person begins his movement from the origin to destination (Taghavi, 1992).

Basically, the immigration can be considered as a stage of social ecology; thus the immigrants strengthen the same groups (racial, ethnic and economic) by "rushing" into the destination city and therefore they affect the development and ecological diversity of city. Burgess, who had introduced the model of "urban landscape" with the aim to eliminate the fundamental patterns of social segregation in modern cities (Savage and Warde, 2001) considered this model as a confirmation of the importance of ecological processes. In other words, as a result of cities expansion, the people rushed into them; these people immigrated from their own lands, which have assigned to others (especially after the land reforms and assignment and quitting the lands due to the lack of financial and water resources), into the cities; and this process eventually led to the competition between different groups or a change in the structure of city. Immigration has a significant effect on strengthening and expanding the new ethnic and racial Ghettos and mainly the poverty in big cities. By obtaining the basic information about the destination city, the immigrants select their residence based on the pattern in accordance with their own economical and social situation.

This location selecting may be affected by the ethnic and racial interests. In this case, the newcomer will choose the residential place in where most of the hometown populations are living, thus they will strengthen the small or large ethnic or racial ghettos. Most of the immigrants, especially the village-city immigrants, who immigrate to the big cities without considering the hierarchy of step-by-step immigration,

are attracted to the border areas and slums and strengthen the ghettos of poverty due to the lack of attraction by the economy of big cities. Different forms of these kinds of location selecting after the immigration can be found and they can be described and explained within the framework of social ecology and its evolution stages.

Influence of social ecology on the physical development: Since the social ecology and movements caused by its effect is the main subject of this study, thus the issue of effectiveness should be proposed in order to determine the application and correlation of these two in the study. Basically, the influence of ethnic, tribal or social groups and demographic movements in a region or city entitled as the social ecology can affect the physical, cultural, social, economical and political development of city in two aspects (Habibi, 2003).

Direct Effect: Involvement in the land construction and preparation for physical development with determined objectives which first contains the physical development.

Indirect Effect: Indirect involvement in physical development as injecting the capital of social groups with respect to this fact that the confirmation or rejection of influence and effectiveness of social ecology in the physical development are the percentage of combining these two and distinguishing is difficult; thus only its effects and being affected are considered in the general concept of effective ecological factors.

MATERIALS AND METHODS

Physical development process of Alvand city: Alvand city is a new established city with a position of industrial city in the complete meaning, with all facilities considered for a designed industrial city where was built after implementing the development plan and transferring the industries from Tehran to the distant 120 km, but practically the industries of industrial city were only implemented in designed plan and the rest of plan were almost incomplete or not implemented (Ministry of Planning and Budget, 1983).

As one of the most important and populous cities of Qazvin province during the last four decades, Alvand city is located in 14 km southeast of Qazvin in geographical location 50° 30 min east longitude and 36° 12 min north latitude. According to the latest country divisions and by building the city Alborz from Qazvin city, Alvand city has been chosen as the capital city of Alborz city where includes Mohammadiyah and Central district. (Agha-Mohammadi, 1996)

Initial part of Alvand city has been a castle village with adobe landscape and surrounding by rhomboid towers with the area of approximately 13.5 Ha and a

population of about 750 people with a completely rural economic-social livelihood and structure. In this city, the physical context, which is now partly existed with remained overall composition, contains the dense adobe and clay houses with wooden covers along the narrow alleys with a 300-year history (Safavid Period). (Mostofi, 1991)

Evaluating the historical development of Alvand city up to the year 1967 (before the establishment of industrial city) indicates that this city has had the traditional and organic structure with gradual expansion into the circle.

Physical development of Alvand city after 1967, when the establishment of the Alborz industrial city started, was based on the directions of expanding the city in main axes of city towards the Alborz industrial city. Physical expansion of city has been mainly into the North East and East and in some of its eastern parts the city has the marginal and irregular shape in the vicinity of nearby orchards. Physical development of Alvand is shown in Fig. 1:

Figure 1, during the years (1966-82) Alvand city has experienced significant physical growth and the main way of development has been towards the north-east and east and in line with the development and close to the industrial city. The horizontal development has been markedly reduced from 1982-1996 and 1996-2006 and has been mainly towards the North West and South East.

Physical development model of Alvand city: Evaluating the physical development of Alvand city indicates the linear-sectoral development model. So that the industrial estate residential buildings and organizational houses, built in southwestern of industrial city and locating en route to Qazvin road have caused that Alvand village to expand and develop towards the organizational houses alongside the road leading to Qazvin and this is a combination of linear-sectoral development (Soleimani, 1996).

Types of physical development: Urban development of cities is based on the expansion and horizontal and vertical development and in the horizontal development the city can be expanded horizontally in all directions in order to adopt itself in consistent with the population development; however, the horizontal development in the economic regions in which the land is inexpensive. Vertical development means the increased floor of existing buildings and creating the tall buildings with several floors; this type of development is suitable for regions in which the land is valuable (Shieh, 2003).

Ecological factors affecting the physical development of Alvand city:

Immigration with the origin outside the city: Alvand city is considered as one of the main poles and purposes

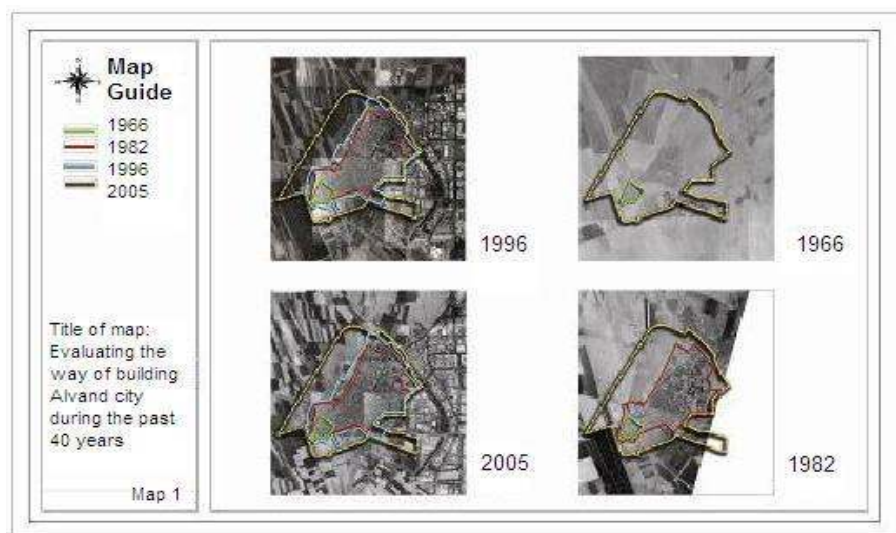


Fig. 1: Physical development of Alvand

Table 1: Development of population and annual growth in Alvand city

Year	Alvand population	Annual growth
1956	989	-
1966	1173	1.71%
1976	5371	15.21
1986	41706	20.50
1996	63586	4.22
2006	82433	2.60

of immigration of province. Geometric population growth since the 1960s indicates the hurried expansion of city and the following (Table 1) indicates the population and annual growth.

Therefore, in the decade of 1966-76 the population was increased from 1173 to 5371 with the annual growth 15.21 and was increased in the decade 1976-86 from 5371 to 41706 with growth 20.5% and all increased population was related to the immigration to Alvand village for working in the industrial city. The natural growth and net immigration are the factors of population growth and during the decade from 1986-96 the natural growth was 12.5% and the net immigration 29.7% and during the decade from 1996-2006 natural growth was 12% and the net immigration was 14 and they indicate the existence of deterrent organs against the population growth in the city such as municipality which was founded after the year 1982. Nosratabad village in the vicinity Alvand city was exposed to the influx of immigrants to apply for the job and its population was increased from 1768 in 1986 to 13090 in 2006 and it caused the unbridled growth and instable development in rural regions (Statistical Center of Iran, 1956-2006).

Incorporation of villages: The history of Alvand physical development indicates that a part of countryside is occasionally exposed to the ecological influx of a group of residents or immigrants due to

several reasons and this will lead to the physical development of city. Samples of these endogenous ecological influxes are the villages such as Nosratabad, Mashaldar, Pir Yusefian and Ghadimabad, Kamalabad and Kuchar from which Nosratabad village is now experiencing the stage of influx development due to being near Alvand city (at the distance 4 km), so that its population has been increased from 5828 in 1996 to 13090 in 2006 and it has been attached to one of 13 districts of Alvand city due to the physical development (Hmoon Yek Consulting Engineers, 2006).

Ecological movements: Ecological movements in urban regions are a kind of endogenous immigration which can complete the ecological processes. Ecological processes include the influence, influx, stabilization, compaction, place separation (Shokouhi, 1986). During the stages of place separation a particular class of society may rush into a certain region of city and replace with a native species and class during the stages of ecological development. The evidence of results of these population movements can be seen everywhere of Alvand city and sometimes they are among the factors of physical development. Influx of employees, administrative and professionals, into the organizational houses in the northeast regions and the influx of capitalists into Imam Khomeini Boulevard due to the commercial conditions are among the factors of physical development.

ANALYSIS AND FINDINGS

Social ecology of Alvand city: As noted, the social ecological factors affecting the physical development of Alvand city is mainly summarized in the economic factors or the citizens' financial ability or the social factors particularly the immigration. Here, we will

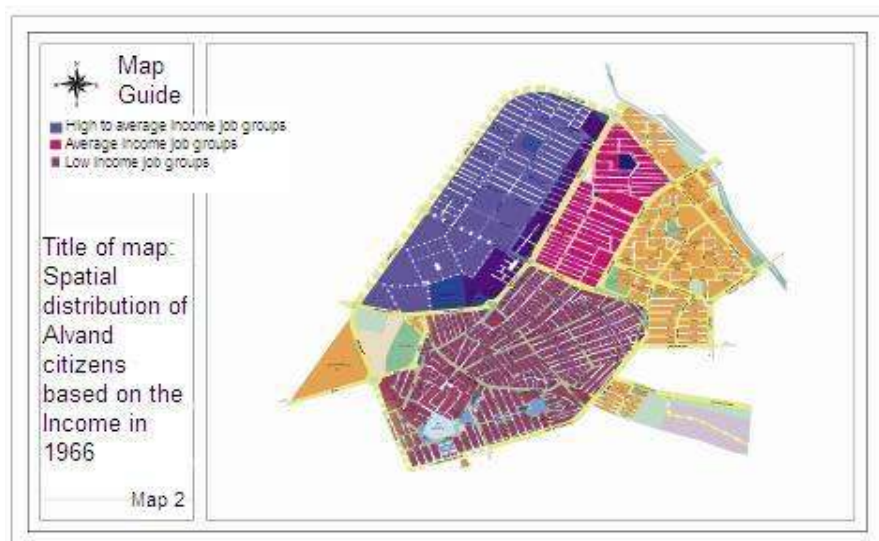


Fig. 2: Space view of the Alvand in terms of revenue

Table 2: Structure of Alvand city population based on the place of birth in 1986

City	Total Population	Place of birth				
		Alvand	Other cities	Rural areas	Out of country	Unknown
Alvand	41706	49.4	10.1	37.6	1.9	1

study these factors on the urban scale and investigate these factors in the studied region in order to explain the effect of these factors on the development models.

Economic and population movement factors:

Figure 2, which has been interpolated based on the data of public census areas in Alvand city in 1996, shows the spatial distribution of Alvand city citizens based on the income and significant place selecting.

According to the Fig. 2, the job groups with high income (managers-legislators and senior officials, engineers and physicians) are often passing the way due to the lack of appropriate residential conditions and being close to the cities such as Qazvin, Karaj and Tehran and they are not the resident of Alvand city and only come Alvand city and industrial city in order to work. The second group including the job groups with average income (Educators, staff and experts) with a lower class than the wealthy class have mainly chosen the north and north-east of west of Street Moalem for settlement and these regions include the districts 11, 10, 9, 8, 7, 12 and 6.

In this ecological competition, the low-income groups (simple workers-agricultural workers, construction and industry workers) have been forced to choose the low-impact initial and central regions of Alvand and the regions 4, 2 5 and 3.

Immigration and ecological movements in Alvand city: Three types of immigration can be studied in Alvand city

- Entered immigrants with outside-country origin

- Entered immigrants with urban origin
- Entered immigrants with rural origin
- **Entered immigrants with outside-country origin:** By the establishment of Alborz industrial city and beginning the construction of industrial cities and the need for foreign experts to complete the engineering projects, the need for foreign engineers in the industrial city was felt, but given the lack of facilities in Alvand city and being close to the urban poles of country such as Karaj, Tehran and Qazvin, the foreign engineers became residents in mentioned regions and the foreign immigrants reached to 1.9% of immigrants in 1986 (Industrial Estates Corporation, 1991).
- **Entered immigrants with urban origin:** Different of place-selecting by the immigrants with urban origin of other provinces mostly has the economic aspect and it seems that the cultural and social factors are not involved in this place selection. Perhaps it is due to Alvand city's diverse and non-coherent social structure which creates no attraction and repulsion for any kinds of social or cultural groups. As it can be seen in the following table, 10.1% of immigrants in Alvand city have been entered Alvand from the urban areas in 1986 and they have mostly been settled in districts 9 and 11. Structure of Alvand city population based on the place of birth in 1986 is shown in Table 2:
- **Entered immigrants with rural origin:** This group of immigrants has demonstrated their economic weakness in place selecting and in 1986 37.6% of people immigrated from rural areas to

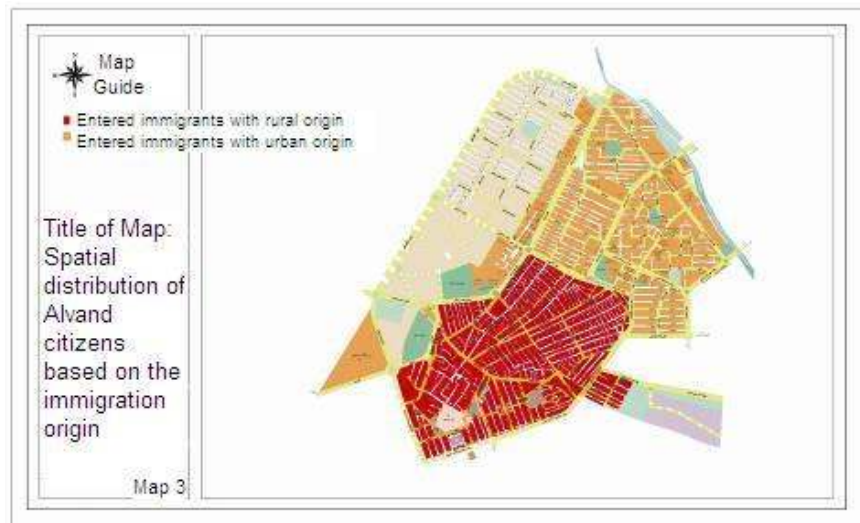


Fig. 3: Space view of the Alvand in terms of origin migration

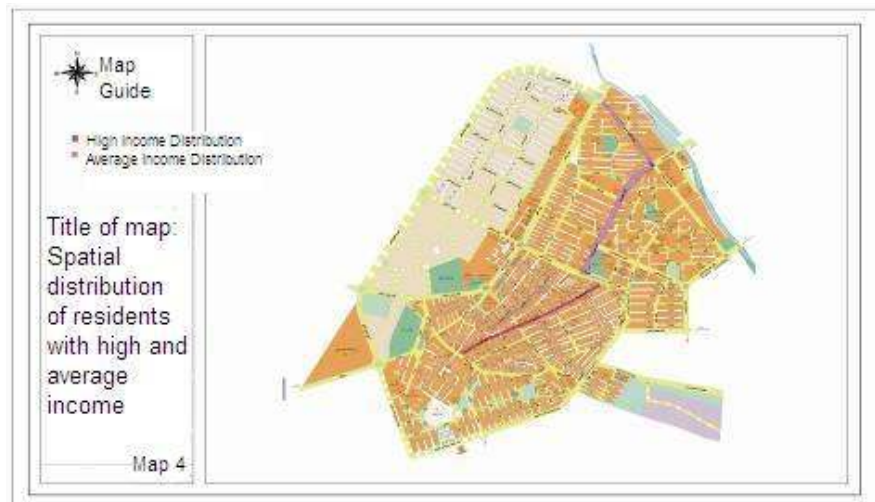


Fig. 4: Spatial distribution of residents with high and average income

Alvand city and most of them settled in districts 2, 3, 4, 5 and the initial center of Alvand city. Space view of the Alvand in terms of Origin Migration is shown in Fig. 3.

As it's shown in Fig. 3 entered immigrant with rural origin is in west part of city and entered immigrant with urban origin is in north part.

The impact on the economy, ecology and social development ALVAND: As mentioned previously, the high-income group comes to Alvand city daily for business and economic activities and their place of settlement is mostly Qazvin or Karaj, but their income is mostly provided on Imam Khomeini Street. However, if we consider the average to high job group, the majority of them are settled in Vali-e-Asr dormitory, Farabi Boulevard - Suhrawardi Boulevard.

With the ecological influx into the regions, this group has reached a stage of physical and social development in the urbanization development processes and has created the complementary physical and social development. Spatial distribution of residents with high and average income is shown in Fig. 4.

Based on Fig. 4 place of residents with high income are shown with red color and average income residents place with gray. As it's presented average income population are more than other.

Extended distribution of average group indicates the ecological influx of this group into the regions 8, 9, 10 and 7 and its effect on the physical development of region is inevitable. This group has played a role in the horizontal development of region and Alvand city and the interesting point is that since it has been rarely attracted to the illegal development and most of the time it has been in line with the planned (principled)

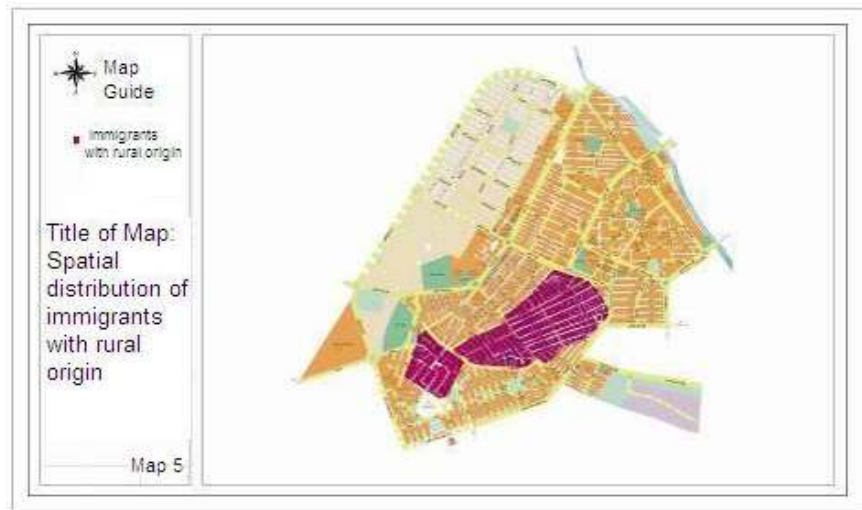


Fig. 5: Spatial distribution of immigrants with rural origin

Table 3: Physical effects of Alvand city

Groups	Indicators	Horizontal-principled development	Horizontal-unprincipled development	Complementary development	Illegal development (marginal settlements)
	Employees	×		×	
	Educators	×			
	Laborers		×		×
	Immigrants with the origin of cities in other provinces	×		×	
	Immigrants with the rural origin		×	×	×

development, this group can be called as the pioneer of horizontal-principled development of Alvand city despite a few tendency to the non-planned regions (horizontal unprincipled development).

Low-income group, who are mostly the laborers and farmers and the lower class of society, have been settled in districts 2, 3, 4, 5 and 6 where have not been subject to the principled urbanization and have been developed horizontally-illegally and horizontally-unprincipled. This group is the primary core of Alvand city in the main position and its effect on the development of informal settlements is significant.

Effect of immigration on the social ecology in Alvand city: Immigrants with outside-the-country origin: Immigrants of this group have not been settled based on their social status and lack of financial and appropriate welfare facilities in the city and they have come to the city only to work and there is no specific place for this group in the city.

Immigrants with urban origin: As shown in Map 3, the immigrants with origin of other cities of province have represented different types of development with the special tendency towards the horizontal-principled and complementary development and have settled in districts 9 and 10.

Immigrants with rural origin: Map 3 shows the immigrants' place selecting with the dimension of

village of province in Alvand city based on the sample census 2006. Immigrants with the origin of villages in the province are mainly defined in the horizontal-principled and complementary development. In the map, districts 4 and 5 are among the horizontal-unprincipled development and district 3 among the horizontal-principled development and district 2 among the complementary development. spatial distribution of immigrants with rural origin is shown in Fig. 5.

Also physical effects of Alvand city is shown in Table 3.

As it's presented in Table 3, five groups (Employees, Educators, Laborers, Immigrants with the origin of cities in other provinces and Immigrants with the rural origin) are investigated according to the Horizontal-principled development, Horizontal-unprincipled development, Complementary development and Illegal development (Marginal Settlements) and physical effects of Alvand city in each part is shown.

CONCLUSION AND SUGGESTIONS

Despite the fact that Alvand city has deficiencies in terms of physical security, it seems that the social ecological structure of city is the main reason for the lack of mental security and spatial disorientation. Considering the spatial analyses of this study, which

indicate the domination of immigrant population on the native population including 70% of population on the one hand and the instability of residents' social, economic and cultural structure in the districts with linguistic, ethnic diversity on the other hand, all infer a kind of social alienation which change the social communication into the unknown communication. This soulless communication and also the immigrants' attachment to their original hometown after the activity and at the time of retiring has led to the severe decline in place attachment and made low level of city and citizenship relationship which only meets the financial needs; this sense of separation and lack of responsibility for city and living place make the identity of city unstable and change the city into a soulless city. Nevertheless, it seems that we need to take attention to the social and cultural development in order to improve the process of Alvand city physical development in order to eliminate the emotional gaps of city and citizen and strengthen the sense of citizenship for all residents. Therefore, the citizens will participate in maintaining and preserving the physical structure of city and the cultural and social identity and security and make the city stable.

Given the non-coherent and unprincipled structure of Alvand city, it seems that creating a common sense among the citizens is an effective step in reducing the social differences and conflicts and strengthens the local-considering, local thinking and local perspective contexts in immigrants. Obviously, the ecological social movements of city become natural and play the role in line with integrating the residential neighborhoods and ultimately the social separation changes from the negative balance to the positive balance and the citizens become interested in the local place and this will lead to a same type of neighbors and people in the district and a sense of social satisfaction and internal and familial peace and security following by the mental peace.

Therefore, conducting the experts' wider studies and recommending several suggestions are essential for achieving the sustainable urban conditions for Alvand city with emphasizing on the social aspect and eliminating the loss resulted from the social ecology:

- Survey of local residents for prioritizing the development activities of regions and prioritizing the cultural spaces for citizenship and neighboring reinforcement.
- Appropriate distribution of development projects in the region with the aim to reduce the physical differences by using the cultural, social, economical, especially in regions with problems.
- Making the indicator through building the neighborhood and increasing the social communication by improving the neighborhood

parks, sports ground on the neighborhood scale and using the advantages of industrial city in order to achieve the objectives of Alvand city.

- Implementing the planned and regular educational and recreational programs in the parks of neighborhood in order to improve the neighborhood residents' community making and Alvand citizens' interconnectedness by creating the districts, groups and neighborhoods in different regions of city.
- Strengthening the neighbouring structure and identity with various designs and integrating diverse cultures in local culture.
- Strengthening and developing the cultural infrastructure by creating the cultural centers and places in the neighborhood and people's easy access to these structures.

Further strengthening of councils, using the councils in line with the targeted neighborhoods in order to solve the internal problems and strengthening the cultures of council by creating the public meetings in order to meet the self confidence neighborhood and local objectives

REFERENCES

- Agha-Mohammadi, H.A., 1996. Landscape of Qazvin. Governorship Publications.
- Cohen, B., 2009. Principles of Sociology. In: Gholam-Abbas, T. and F. Reza (Eds.), SAMT Publication, Tehran.
- Fakouhi, N., 2003. Urban Human Study. Ney Publication, Tehran.
- Gravand, J., 2007. Study of sociological theories of immigration in Iran, Naghsh Click Website.
- Habibi, M., 2003. From town to city. University of Tehran.
- Hamoon Yek Consulting Engineers, 2006. Plan of organizing the rural and village centers in Qazvin province.
- Industrial Estates Corporation, 1991. Qazvin Province.
- Katie, W. and M.M. Vazar, 2004. Achieving the Sustainable Urban Condition. Urban and Planning Processing Co., Publication, Tehran.
- Ministry of Planning and Budget, 1983. Study of the Area of 120 km in Tehran.
- Mohammad-Hosseini, P.Y. and E. Mohammad-Amir, 2001. Theories of Rural Development. SAMT Press, Tehran.
- Mostofi, H., 1991. Selected History. Tehran Publications, Tehran.
- Saroukhani, B., 1991. An Introduction to the Encyclopedia of Social Sciences. Kayhan, Tehran.
- Savage, M. and A. Warde, 2001. Urban Sociology. In: Abolghasem, P. (Eds.), SAMT Publication, Tehran.

- Sharepour, M., 2008. Urban Sociology. SAMT Publication, Tehran.
- Shieh, E., 2003. Workshop on Urban Planning. 3rd Edn., Payam Noor University Press, Iran.
- Shokouhi, H., 1986. Social Geography of Cities, Social Ecology of City. Jahad Academic, Daneshgahi.
- Soleimani, M., 1996. Development of villages around the new industrial cities. case studies: (Alvand-Alborz).
- Statistical Center of Iran, 1976. Census of Population and Housing. Detailed Data of Alvand Census districts.
- Statistical Center of Iran, 1986. Census of Population and Housing. Detailed Data of Alvand Census Districts.
- Statistical Center of Iran, 1996. Census of Population and Housing. Detailed Data of Alvand Census Districts.
- Statistical Center of Iran, 2006. Census of Population and Housing. Detailed Data of Alvand Census Districts.
- Taghavi, N., 1992. Rural-urban Immigration: A Sociological Introduction to Theories. Sotoudeh Publications, Tabriz.