



Analysis of the Role of Geographic Foundations in Locating the City of Namin

Saeed Kohansal¹, Meysam Mohammadi^{2*}

¹MA of Geography and Urban Planning, Islamic Azad University of Astara,

²MA of Architecture, Islamic Azad University of Khalkhal.

***Corresponding Author**

Abstract: *In general, geographic foundations are divided into two groups of natural and human foundations. Studies show that the structure of settlement system, while being influenced by human foundations, has been shaped in relation to natural foundations. The results of studying the investigated variables and distribution of settlements show that natural geographic factors have influenced formation of the city of Namin, and geographic foundations such as suitable soil and suitable water resources have had a role in initial locating of the city. In addition to natural foundations, regarding human foundations, functional success also affects settlement system. Functional success, although is dependent upon natural success, includes local, regional, and trans-regional situations too.*

Keywords: *Natural and Human Foundations, Locating, The City of Namin*

INTRODUCTION

For a geographer, city is conceptualized in terms of conscious occupation of some space in the nature that human beings take possession of it, according to the usual technique of the time; and on this basis, the first factor that characterizes a city is its geographical situation and the second factor is its place or in clearer words, location of the city that may be strengthened or weakened by the city's situation. The morphology of city texture reflects the city's map and plan which is often seen in turbulent, radial, or checkered forms. A city's character originates from the heart and central part of the city's primary complex; a part which is called urban core by the geographers and formation of its historical monuments is the beginning of city's formation and indicative of the city's history. This core, if has been revitalized, is generally the result of many centuries and eras. During centuries and ages, human beings have used the help of geographic factors in the nature in construction of cities.

Gharakhloo, Mehdi and Abedi (2011) studied locating of new cities including regional studies, initial selection of multiple locations, development of selection criteria, application of the criteria in different locations, and selection of the superior alternative, namely the more suitable location for development of a new city. This locating has a direct impact on the success or failure of new cities; and given that the city's location has an effective role in attracting populations or their acceptance in various dimensions, the new cities which can respond to the population can achieve their goals. Locating of new cities has a direct relationship with the desired goals in construction of these cities. In our country, locating of new cities has largely followed the goal of attracting the population's overflow of a metropolis; and the new cities whose location has been approved in the country, are related to a metropolis. Locating of the new city of Sahand, which is the discussed subject of

the present study, is related to a metropolis (Tabriz) and has followed the goal of attracting population overflow of the metropolis. Location of the new city of Sahand has been selected without a regional perspective, and merely by investigating some criteria.

In fact, geographic foundations have a decisive role in the process of formation, continuation of life, and historical evolutions of human communities, such that it is considered the main agent of unbalanced focus and distribution of population and activity in Iran. Therefore, it should be mainly focused in the process of urban development and planning.

However, the question is how much the urban foundation and urban theories have been used in constructing the city of Namin. The researcher is going to examine the extent to which geographic foundations have affected the structure and planning of the city of Namin; and the extent to which the natural and cultural context of the city and the current structure of the city is the result of functioning of geographical foundations.

Review of literature

Urbanization

From the geographers' point of view, every city is defined by its spatial structure, situation, core, inhabitants and special economy; and the factors distinguishing a city in their view are geographical situation, site, and the location of it (Hossein Zadeh, 2005, p. 79).

Cities are the manifestation of people's beliefs and life method and the result of their attitude toward life (Davari Ardakani, 2013, p. 185). But what is common in all cities with all their characteristics and features is concentration of human beings in a specific space, interacting with each other aiming to meet their common desires and to become civilized, and trying to move toward civil progress. In Islamic city model, the dominant factor is Islam religion and certainly all indices and elements of the city's social and physical life are identified and systematized based on this factor.

A review of urban development theory evolutions

Human has sufficient knowledge and tools to interfere in natural and social processes; any kind of using land resources for human development and progress is permissible and political directors of the society, based on "exclusive sovereignty" and "legitimacy of the government", can provide what is better for the society, with the help of planners (Ministry of Housing and Urban Development, 2008, pp. 13-14). Development of cities, providing their requirements, finding solutions for future developments of the city, making decisions that can minimize urban problems, and finally, trying to maintain a reasonable relationship between human and his natural environment have led to evolutions in urban development. Geographers have devoted a specific branch of their study subjects to urban geography, and sociologists have conducted studies in the field of urban sociology. Similarly, architects also have carried out further studies in the fields of urban design, urban landscape, and types of housing (Shie, 2004, p. 31).

According to Geddes, the map of cities is not merely consisting of curved or straight lines that determine the place of mountains and rivers, but rather is a Hieroglyph line and in fact, a linear diagram through which human beings have written civilization history. The more difficult it is to understand this line, the more its results are when its mysteries are discovered (Shie, Esmaeel, 2007, p. 40).

Some of the most famous urban designing and planning theories

1. Natural construction of cities

The basis of this theory is based on geographic characteristics of city, such that natural characteristics and cultural features of people who live in a city, determine its natural area construction. This theory cares human nature and his culture more than physical situation of urban settlements. In other words, construction of a city is a collective and social construction. The general principle of the theory of natural area of city regarding urban community and urban construction is that the followers and members of a religion, a race, a nation, or a particular cultural group try to live in the area where people with the same religion or race live. However, this

theory emphasizes more on construction of inner regions of cities rather than the shape of their general space, and can only be used as a complementary theory along with other theories. This theory has been accepted by many theorists and is in fact a supplementary issue which is accepted by many urban thinkers, especially those who rely on natural and ecological issues.

2. Naturalism theory

This theory suggests liberation of man from artificial environment and settlement in nature and attention to natural functions as leisure. Attention to home, preservation of nature and functionality in city are among the fundamental frameworks of this theory (Ziari, 2007, p. 14).

3. Theory of sustainable urban development

The theoretical foundations of the concept of sustainability in city include the following: reducing pollution, preserving natural resources, reducing urban waste, urban decentralization and reducing dispersions, increasing average density in urban suburbs and small cities, reducing communication distances, creating local employment, developing small cities in order to reduce reliance on big cities. In this way, firstly, through replacement of resources and renovating them and adopting proper use policy, protection of land will be increased; and secondly, considering urban planning and space organization, sustainable urban development will be obtained (Ziari, 2004, p. 18).

4. The theory of Islam and city

This theory has been proposed in line with the above theory. According to this theory, the major role of religion in development of city is undeniable because in fact every city is a center for accumulation of values that create a civilization and thus create an image of the world, in Qur'anic thoughts.

Natural factors and physical growth and development of cities

According to this view, in geographical areas where there have been suitable and sufficient soil, hydraulic and aquatic agriculture has been created resulting in an increase in surplus production, population growth, division of labor, emergence of bureaucratic system of administration and concentration of power, construction of huge buildings, and ultimately, provision of the ground for emergence of city and prosperity of urbanization (Shokuee, 1994, pp. 141-143).

Among all natural complications, plains, climate, waters (rivers and seas) have caused existence and expansion of cities. It can be said that plains are considered a suitable ground for human group activities in urban centers. Favorable climate and existence of rivers and seas (for irrigation and transportation and use of water and sea products) can provide the ground for development of cities' process. On the other hand, some natural complications also prevent urban expansion (Rahnamayee, 1992, p. 56).

The role of geomorphic units in urban designing and planning

Geomorphic units and topographic elements affect a city in the following ways, according to which we can plan for the existing cities or future cities (Zomorrodian, 2012, pp. 17-23).

1. The impact on genesis, emergence, and more precisely, locating and substitution of cities
2. The impact on physical development of urban settlements and directing their development
3. Playing roles in distribution pattern and spatial distribution of cities, influence area, and connection of urban areas
4. The impact on urban morphology and map (construction and texture)
5. The impact on urban structures, facilities and service provision conditions
6. The impact on economic activities of city
7. Application in identifying recreational and leisure centers in the peripheral areas of cities

Research hypotheses

1. In construction of the city of Namin, attention has been paid to geographical foundations.
2. Geographic factors (water and suitable soil) have played a role in construction of the city.

Research results

Examining and recognizing the city

According to the brief information obtained from the works of historians, the past history of the city of Namin is as follows. This city had been part of Talesh region until Qajar government coming to power, and it had been governed by Mehranis. Agha Mohammad Khan Qajar, after establishment of Qajar government, tried to defeat internal enemies. Although he failed three times in the war against Talesh, but finally he succeeded to force the region's government to obey him. After him, at the time of Fath Ali Shah rule, after the war between Iran and Russia, Talesh was split into several separate parts. With division of Talesh, Vilkiy was determined as the center of the governor Namin. During Qajar period, cultural exchange between Namin and Tehran began, and on the other hand, cultural relations of Namin with Azerbaijan of that time and Caucasus contributed significantly to the cultural development of the region.

After victory of Islamic Revolution, significant evolutions took place in Namin in cultural, social, economic and political fields. Construction of new streets, green spaces and construction of beautiful buildings by people changed the face of the city. Namin, which was governed by sherifdom since 1946, was transformed into governorship in 1995 by the Ministry of Interior, after the activities and requests and pursuing by its people. As confirmed by the new arrivals and especially tourists, construction culture of the city of Namin in recent years, which is carefully monitored by the municipality, is almost adequate compared to other cities and even cities of other provinces. One of the other cultural activities which is an indicator of growth and promotion of urban culture is opening of Pardis Faculty of Literature in Namin (affiliated to the University of Mohaghegh Ardabili) in 1995. Registration of students from all parts of Iran in this faculty has caused scientific growth of Namin and recognition of Namin in all provinces of the country. Construction of a cement factory and a lot of other large factories, as well as development of aviculture and animal husbandries has caused economic prosperity of the city in recent years.¹

Development stages of the city of Namin are as follows:

Table 1: Direction of Namin development based on natural factors

No.	Factor	Suitable for development	Not suitable for development
1	Topography	gradient between 1 to 12%	Gradient more than 12%
		Lack of height difference more than 20 m	height difference more than 20 m
		Lack of topographic cuts	Existence of multiple topographic cuts
2	Rock units	Lack of sensitivity to hillside motions and gully and groove erosion (existence of solid lithology)	Sensitive to erosion and hillside motions (marl stones, chile stones and hydrous clay)
3	Structural complications	Distance more than one km and lack of active structural complications especially quaternary and active faults	Distance less than one km and being located in the area of structural complications with the history of seismicity and quaternary faults
4	Flood potential and hydrography	More than 50 m distance with waterways or rivers with rank 4	Less than 50 m distance with waterways or rivers with rank 4
5		Non-adjacent to waterways or having at least 10 m distance with waterways with ranks 1,2,3	Adjacent to waterways with rank 1,2,3 with a distance less than 10 m
6	Geomorphology	Being far from sliding, slipping zones, craters and environmental dangers	Being located in sliding, slipping zones, craters and regions sensitive to these phenomena
7	Land use	Existence of idle land suitable for development or third class agricultural lands	First class agricultural lands and gardens

¹ Ardabil Province Information Bank (<http://www.ardabilcity.com/>)

Geographical foundations affecting the city of Namin

Generally, these factors are divided into two groups of natural and human complications:

1. Roughness

Natural complications such as mountains, hills and rocks and valleys on the land surface determine the direction of cities' expansion. Mountainous cities, since access to them is possible only through impassable roads and mountain passes, provide a specific form of geographical locating. Regarding the city of Namin, northern and northeastern highlands have prevented development of the city in this direction.

2. Agricultural lands

Due to special life conditions of the city residents, part of the lands around the city is devoted to agriculture. By recognizing the quantitative and qualitative features of these lands, allocation of agricultural lands for development of the city is prevented. Currently, agricultural lands located in the south of the city have restricted development of the city in this area.

3. River or watercourse

Watercourse is one of the factors determining development directions at different growth and development stages of the city. Human factors that have influenced directing development of the city are factors such as communication paths, boundaries and borders of the city.

4. Communication paths

Communication paths, as the channel of activities of the city and its inhabitants, direct the city's physical process too. In the case of the city of Namin, existence of Ardabil-Astara communication road has generally directed development of the city.

5. Boundaries and limits of the city

According to studies, it is seen that initial development of this city had been around Shohada square and toward the north. In the next stages, the city development has begun from the east toward the market region and has stopped around the city's market. This stage of the city's development has continued until 1966 and has included parts of southeast of the city. Development of the city between the years 1966 and 1976 has occurred in the west and southwest regions of the city and some northeast parts. During the years 1976 to 1988, direction of the city development has orientated toward the east, and this trend, due to the existing heights, agricultural lands in the south of the city, and also Ardabil-Astara road, has continued since 1988 up to now. The noteworthy point is gradual filling of the city's texture which has prevented the city's area expansion, and has preserved the size and boundaries of the city to a large extent.

Texture of the city of Namin

1. **Old texture of the city:** This texture is located in the northwest (Goni or Imam Hossein neighborhood) and southwest of the city (along Imam Khomeini street) and has been formed as an organic organ. Narrow and twisted passageways and alleys, in which no particular geometry has been used, have not penetrated the depth of the texture. These passageways, due to high slope, very low width and not providing climatic comfort, cause fatigue and an unpleasant space for the passersby. On the other hand, in this texture, there are narrow and deadlock alleys ending to the entrance of several residential units.
2. **Middle texture:** This part, in addition to having relative qualities and problems of the old texture, has also followed the principles of modern urban development. This texture has emerged during urban development process in the northeastern areas. One of the features of this texture is wider passageways. In this texture, there are no turning points except the intersection of main passageways of the city. Instances of this type of texture, according to the below picture, can be seen in the city. This type of texture, as the map also shows,

3. **New texture:** This texture has a checkered and orderly structure that can be seen sporadically in western, eastern, and northeastern areas of the city. Regular perpendicular intersections and blocks of the same area are among the characteristics of this texture. Also in this texture, there are northern-southern buildings along the eastern passageways. Most city complexes (such as Siman Town, Farhangian Town, and Behdasht Town) in Namin have been built in this way.

Climatic features of Namin

Namin city is located in the northwest of the country and is part of the high plateau of Azerbaijan, which is limited to plain and low lands of Moghan in the north. The most important natural factors in this region include Ghooseh Dag mountain and Sabalan volcanic mass in its west. Among the geographic factors influencing the climatic features of Namin region, latitude, mountains, moisture sources, and vegetation can be mentioned. The average rainfall of the whole area is about 345 mm per year.

1. Vegetation

Keen slope, thick and loose soil, lack of mass forests, heavy rains and snows, and extreme glacials are the major causes of occurrence of slides in this place. The ridge of Talesh reaches its peak at its middle section (Talesh-Khalkhal orbit). High asymmetry between eastern and western hillsides is one of the other features of the middle Talesh. Boghroodagh (3197 m) and Aghdagh (3009 m) are its highest mountains. The highest rainfall in the northern part of the country is devoted to this middle part of Talesh, due to being located in the longest route of northern rainy winds. For this reason, a dense network of short active valleys at its eastern side has been cut. Asalem mountain pass is one of the other complications of the middle Talesh.

2. Pastures

In this area, the highest amount of pastures is seen in the western and northwestern parts and to some extent in the north and south east. These areas are coincident with the mountainous points. In total, about 173483.7 hectares of Ardabil area is consisted of pasture regions, which is about 36.7% of total area of the region. Due to existence of seasonal and permanent springs, especially permanent springs which are created from melting of Sabalan natural glaciers and its hot springs, this area is rich in terms of underground waters, and its underground water levels varies between 3 and 10 meters beside the watercourses and up to 85 meters at the upstream of the river. In recent years, due to excessive water withdrawals from underground resources, water bill is currently negative and the Ministry of Energy has banned this plain in terms of development of groundwater exploitation. Currently, many dams have been built or are being built in this region in order for artificial feeding, irrigation and use as drinking water.

3. Examining geological situation

From structural point of view, Ardabil province is part of the high plateau of Azerbaijan which is located on the western side of the intercontinental subsidence of Caspian Sea. According to the divisions for geological and construction units of Iran, Ardabil province is located in Azerbaijani zone. In the middle Paleozoic rocks, there are signs of erosion all across Azerbaijan that indicate uplifting resulted from Caledonian epeirogeny movements. In these areas, intrusive bodies such as granite, micro and diorite have penetrated inside the old systems and have been covered by Permian lime.

In this province, there are two prevailing structural-sedimentary realms. In the northern part of the province, Moghan plain, as part of the area of Pratis sea, is a plain type area which has been covered with clastic deposits of Oligocene-Miocene time. Most of the area of Ardabil province belongs to the structural territory of Alborz-Azerbaijan in which volcanic rocks and also pyroclastics of the early tertiary period have a significant share. The considered areas are part of the copper strip of Caucasus-

Sungun which continues to Tarom region in Zanjan through Ghoshehdagh, Sabalan, Majdar, and Hashtjin.

4. Examining seismicity situation

The study area is part of the land construction unit of Western Alborz-Azerbaijan and is coincident with the wrinkled hillsides of mountains of Talesh. In this region, the wrinkles generally have a northwest-southeast trend, including anticlines and synclines, the most important of which is Anbaran anticline. The most important faults of the region are Astara fault or Talesh fault, the inverse mobility fault in the west, the southern Khazar fault, and having the north-south direction.

5. Examining soil conditions and lands potential

The area of Namin boundaries, according to its physiographic characteristics, consists of four units of land. The unit of land type is 2.2, having low-height to relatively high hills, with rounded peaks consisting of soft limestone and igneous masses and volcanic sections.

6. The city's water sources and water supply method

Water supply of Namin city is through two deep wells located in Qarachanagh village. Also, before 1987, it had been supplied through one deep well in Noje-deh village. In addition to the two deep wells, one deep well had also been reserved and stored. This city has three ground storages and one air storage. According to interviews with local authorities, the city of Namin has no problems with water shortage and the most important problems of drinking water network include prolonged transmission route, oldness of distribution network, lack of zoning in the network, and problems with going and coming in the wells' route in the cold seasons of the year.

7. Surface waters movement system and position of watercourses in the city

The area of the city's lands is located below Qaresu river which is drained by NaminChai, GheshlaghChai, and KhanghaChai rivers. These rivers often originate from northeastern highlands of the city. NaminChai river originates from the northern and eastern highlands of Mirzanogh and Minabad villages and passes through inside the city's texture (main center of the city).

Human foundations affecting growth of the city of Namin

The following table shows evolution process of population of Namin during the period 1956-2006.

Table 2: Evolution process of population of Namin (during the period 1956-2011)

Period	Year	Population (person)	Growth rate (percentage)	The main reason for population evolution
1956-66	1956 1966	2259 2514	1.08	The impact of Land Reform and migration of villagers
1966-76	1976	2833	1.02	Urban development
1976-86	1986	5138	6.13	- Stopping of population control policies after the victory of Islamic Revolution and adoption of incentive policies about increasing birth rate - Increase of villagers' migration to cities which was a public phenomenon in the country after the revolution
1986-1991	1991	6329	4.41	- Beginning of adoption of population control policies
1991-1996	1996	7852	4.11	- adoption of population control policies - Decrease of migration rate to cities
1996-2006	2006	10456	2.91	adoption of population control policies
2006-2011	2011	11963	2.7	-

Source: Statistics Center of Iran, Population and Housing General Census, the years 1966, 1976, 1986, 1996, 2006, and 2011

Examining spatial distribution of population in the city of Namin indicates main focus of the population in the central parts of the city. Population density in the blocks of the city of Namin is 27.7 persons per hectare.

Table 3: Population density of each separate neighborhood in the city of Namin in 2011

Population density	Area (hectare)	Population	Neighborhood
Neighborhood 1	5.168	6124	3.36
Neighborhood 2	5.208	4332	8.20
Total	377	10456	7.27

Source: Findings by the author

Economy of the city of Namin

Table 4 shows the share of employed people in Namin city in agriculture, industry and service sectors in 2011.

Table 4: Examining the number of employed people in Namin in different economic sectors (2006)

Major activity groups	Number
Agriculture	127
Industry	1165
Services	1295
Total	2588

The service sector, having 83% of the total number of workhouses in the city of Namin is ranked first in terms of the number of workhouses.

Table 5: The number of workhouses in the city of Namin in 2012, in different economic sectors

Sector	Number of workhouses
Agriculture	7
Industry	86
Services	463
Total workhouses	556

Source: General Workhouse Census, 2012

The role of equipment in the city's development

According to the statistics of Iran's Statistics Center in 2006, among the villages located in the zone of Namin city, six villages have plumbed water among which, four villages (KhashHeyran, Dodaran, Nodeh, Soolidargh villages) also receive water purification services. The only village without plumbed water is the village of Jalekaran.

The role of antiquities and attractions in development of the city

According to the studies by De Morgan and given the obtained signs, Namin is 9000 years old. The works obtained from the region are divided into two distinct periods²: pre-Islamic historical monuments and post-Islamic historical monuments.

Conclusion

In general, in spatial establishment and dispersion of settlements (including both urban and rural ones) and population, two groups of factors are influential which are called geographical foundations. The results of this study and analysis of the data show that along with human factors, distribution of settlements and population are influenced by natural environment factors, although these factors do not work the same. Natural limiting factors such as high altitude and slope, inappropriate land type such as mountains and flood plains have a

² Erfani, Namin, Laleh (2010), Old glory of Namin: myth or history. Tehran: Gohar Danesh.

negative impact on spatial distribution of the settlement and the population. In other words, there is a reverse and significant relationship in this regard; and on the contrary, appropriate height and type of lands has a positive and significant impact on the settlement system of populations. The results obtained from this study in the studied area and its consistency with field studies, taking into account the geography of environmental and behavioral perception, is an evidence of this.

First hypothesis: In construction of the city of Namin, attention has been paid to geographical foundations.

It can be said that in the investigation and construction of the city, the natural geographic foundations have been considered at the beginning of the formation, and thus the first hypothesis of research is confirmed.

Second hypothesis: Geographic factors (water and suitable soil) have played a role in construction of the city.

Initial development of this city has taken place around Shohada square toward the north. In the next stages, the city development has begun from the east toward the market region and has stopped around the city's market. This stage of the city's development has continued until 1966 and has included parts of southeast of the city. Development of the city between the years 1966 and 1976 has occurred in the west and southwest regions of the city and some northeast parts. During the years 1976 to 1988, direction of the city development has orientated toward the east, and this trend, due to the existing heights, agricultural lands in the south of the city, and also Ardabil-Astara road, has continued since 1988 up to now. The noteworthy point is gradual filling of the city's texture which has prevented the city's area expansion, and has preserved the size and boundaries of the city to a large extent.

In general, existence of suitable natural conditions such as rich water sources and suitable soil which have formed a life based on agriculture, and a suitable slope, have caused growth and development of the city; thus, geographic factors have played a role in the city's development.

References

1. Davari Ardakani, Reza (2013), Questioning efficiency of philosophy at the time of non-development: a review of the book: Kalam, philosophy, mysticism, second year, Nos. 7 and 8 (6 pages, 231 to 236).
2. Gharakhloo, Mehdi, Asghar Abedini (2009), Evaluation of challenges and problems of new cities and their success rate in Iran: New city of Sahand, Modarres Quarterly for Human Sciences, vol. 13, No. 1.
3. Hosseinzadeh Dalir, Karim, Maleki, Saeed (2005), Sustainable urban development and land use in Ilam city, Faculty of Literature and Human Sciences (Shahid Chamran University of Ahvaz), No. 1, (32 pages, 23 to 54).
4. Ministry of Housing and Urban Development, 2008, Namin comprehensive plan.
5. Rahnamayee, Mohammad Taghi (1992), Government and urbanization, a critique of old urban elements and benefit capitalism of Hans Bobrk, Geographic Research, No. 32 (10 pages, 17 to 26).
6. Shie, Esmaeel, 2005, An introduction to urban planning, Tehran, Iran Science and Technology Publishing House.
7. Shokouei, Hossein, 1994, New perspectives in urban geography, vol. 1, Tehran, Semat Publications.
8. Ziari, Kermatollah, 2004, Planning of new cities, Publishing Organization of Ministry of Culture and Islamic Guidance.
9. Ziari, Kermatollah, 2007, Planning of new cities, Tehran, Semat Publications, fifth edition.
10. Zomorrodian, Mohammad Jafar, 2012, Application of natural geography in urban and rural planning, Payame Noor University Press.