

THE ROLE OF INDUSTRIAL TOWNS ON PHYSICAL STRUCTURE OF CITIES (CASE STUDY- MASHHAD, TOOS INDUSTRIAL TOWN)

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ABSTRACT: *The development of industrial towns around cities, It is an important aspect worthy that the coming into existence of this town either directly or indirectly caused deep changes. Above all, the consequences of industrialization have more influence on patterns of population settlement in the region and increased urbanization and centralization of population centers and urban areas lacked facilities and services. Not only, the industrial towns caused attracting the investment, increase the economic prosperity of the city, increase income and create job opportunities are municipalities, but also the negative effect of such pressure on urban infrastructure, increased migration to cities and suburbanization have been followed. This research is based on the theory of the localization industry, the development of the polar, cumulative causation and center-around. The aim of this study is to investigate the social and economic effects of industrial towns on the physical city. For this purpose, Mashhad, Toos Industrial town was chosen as a case study. The research method is Analysis - Descriptive and methods of data collection are "documents – Library and interview. The SPSS software for data analysis and correlation coefficient was used as well as. The result showed that the establishment of industrial towns around cities can also cause changes in the economic and social aspects, in addition to affect on Physical growth of urban areas.*

KEYWORDS: Industrial town, Physical growth, social-economic effects, Toos Industrial town

INTRODUCTION

Since the growth and development of economic adds on population and Space area of city, it creates the changes in the structure and function of the city.

Therefore there are correlation among the growth and structure of economic and population growth and urbanization degree in each of the economic process. Marginal industrial towns that were formed as a result of government policy in Iran, Overshadowed the urban development.

While industrial town exposure industrial activities in form of employment and produce, have significant impact on the surrounding tissue and its surrounding settlements directly and conditioned. These changes led to the formation of industrial zones related, area of residence, particularly for employees and service areas which have significant role in the growth and Physical development of cities.

Centralization of industrial towns attract the rural population to the cities, increasing population which results in growth and centralization and inappropriate density of cities without planning, suburbanization and abuse of urban land by industry in some Iranian cities, including Tehran, Mashhad, Isfahan and Tabriz, has given new form to structures of towns.

Creating an industrial town near the city resulting the formation of market and competition in the job selection and establish, movement of groups in selection of residential area by certain social groups.

Generally, Industrial wasteland around towns has significant development. Because of the lack of regulations governing on construction and several constructions have caused the land located in the metropolitan area. In fact, inappropriate condition of these lands caused low value of them and establish of immigrant population in which come to cities for work in factories.

As a result, the needs intensified for water, electricity, gas and public transportation and Creative Street and the crisis caused by irregularities in the physical development of cities and irregularities occurred in the settlement rules.

The fundamental topic in this research is that Structural effects of the industrial zone would be causing the formation of structural defects in the formation of a new regularity.

This study tries to reach the model which accordingly establishment of industrial have minimum adverse effects on the different structures of the major cities.

Also it has been investigated the economic and social consequences of industrial cities on physical growth of cities. Although employment in the industrial town have made way for migration and have led arrival of rural people to the city, but caused social-economic change in the structure of the habitat and physical growth of cities .

In many less developed countries, urban industrial growth under programmed of economic liberalization has been regionally concentrated. In a liberalized regime, only a few large global centers emerge, attracting much of the infrastructure and industrial investment. Most of the new manufacturing units seek locations around these global cities since this is both cost effective and administratively convenient. Considerations of commercial profitability and efficiency in governance do not inspire multinationals or the indigenous corporate sector to invest in small and medium towns.

Many governments in the developing world are trying to create a few "global centers of the future", to attract local and international investment. At preferred sites, land is being provided for upcoming industrial and commercial houses through government intervention and the activation of the land market. Steps are being taken to facilitate changes in land-use through simplification of legal and administrative procedures and the empowerment of the market to push "low valued" activities out of the city core. Efficient management and better governance are being advocated as solutions to most of the urban problems.

In line with the above perspective, a large section of planners and policy makers in India have argued that there exists no serious urban problem that cannot be tackled through management solutions. All that is needed is to restructure the system of governance in a manner that the "standard reform packages" can be implemented. Reduction of public sector intervention, development of capital market for resource mobilization, simplification of the legislative system to facilitate land use changes and re-location of economic activities are being advocated as the remedial measures (World Bank 1995, Expert Group on Commercialization of Infrastructure 1996, World Bank 1998).

Management solutions are often advanced based on the assumption that urban centers throughout the country are similar in character. Urban problems are attributed to inefficiency

of governance and imperfections in labor and capital markets created through administrative controls and governmental programmes. The solutions, thus, do not take cognizance of the differences in the social and economic structure of cities and towns.

A strong lobby is emerging, particularly in large cities, pleading for vigorous implementation of management solutions. It is advocating disbanding all zoning restrictions, building laws and bye-laws and making the city government relatively independent of state and central level controls. The new system of governance stipulates that the decisions regarding location of industries, change in land-use etc. should be taken expeditiously at the local level. The decentralization of responsibilities for development planning, sought to be ushered in through the 74th Constitutional Amendment in India, is helping this lobby through the empowerment of local governments in large cities that have a relatively strong economic base. Efforts are also on to develop the capital market so that local level agencies can mobilize resources by issuing bonds and other credit instruments. This strategy, being operationalized with support from financial intermediaries, including the credit rating institutions, enables only the larger cities with a strong economic base to mobilize resources (Kundu et. al. 1999).

Many of the international agencies involved in the urban sector in developing countries have been strongly critical of the existing social and institutional structures that are supposedly having adverse effects on the functioning of the economic system. They argue that the only way to benefit from globalization is to dismantle these structures that constrain the growth of economic activities and create new values and institutions that can back up the market based system of resource mobilization and investment. To support this view, studies suggesting that the countries which have a similar value system as the North America or West European countries benefit more in the process of globalization have been quoted.

Enthusiasm for the above package of solutions, both among international and national organizations, is the reason why issues concerning hierarchy of urban settlements are not receiving adequate attention among researchers. Understandably, given the disparity in economic strength of the towns and cities and their unequal access to capital market and public institutions, this pro-liberalization perspective would enable the larger cities to corner much of the advantage from the system. Indifference on the part of research community on issues relating to urban structure thus helps in institutionalizing existing inequality and accentuating regional imbalances. Furthermore, this reinforces the bias against small and medium towns in the developing world.

THEORETICAL BASES

Generally, all agree on the base that interest income and economic development in urban areas than elsewhere absorbed and distributed. So the urbanization and industrialization have mentioned as processes that are truly synonymous with each other.

The important reasons for industry attracted to the city are the benefits of profitability which geographers and economists as they say "economies of aggregation".

In general, large urban areas having benefit on infrastructural facilities and Professional Services in cultural, legal, financial, insurance and Skilled workforce while there are not exist in a small cities. (Mills et al, 1994).

Developments of urban system in the developing countries and in our country have been investigated according to various theories such as Christaller's Central Place Theory (CPT) and Peruvian growth pole.

In aspect of these theories, industrialization and the establishment of Capitalism caused to Rapid population growth and increased density in one or more point of city. It means that population growth in these cities accompany with economic focusing, but as was said of the economic growth rate has surpassed. (Nazarian, 2010 :188),

As city populations grow, they increase the demand for goods and services of all kinds, pushing up prices of these goods and services, as well as Industrial and economic boom will be followed. Two factors i.e. Cooperation of employment in the industrial sector and residence in cities are in frame of variables that related to geographical conditions, the type of industry, Level of expertise, access, transport, time or distance, wages, cost levels in the city or anywhere that could form the relationship between these two factors. (Mousavi, 2011:93)

Industrial towns in developing countries:

India

The new development perspective and management solutions advocated for urban development in India do not take into cognizance the serious distortions in urban hierarchy and the spatial distribution of economic activities. An analysis of the size class distribution of urban population and urban growth suggests that the distribution of population in different size class of settlements have become highly skewed over the years (Kundu 1994). The share of Class I urban centers, with a population size of 100,000 or more (henceforth called cities), has gone up significantly, from 26 percent in 1901 to 65 percent in 1991. Correspondingly, the percentage share of class IV, V and VI towns, with less than 20,000 people, has declined drastically from 47 to 10 percent.

The changes in the settlement hierarchy are primarily due to the towns in lower categories entering the next higher category as a consequence of the natural growth of population. Unfortunately, however, there has not been a corresponding increase in the number of urban centers, especially at the lower levels, through transformation of rural settlements. During the period from 1901 to 1991, the urban population in India has increased eight-fold, while the number of urban centers only doubled. Indeed, the absence of a process of graduation of large sized villages into towns, through the growth of industrial and tertiary activities, is the major problem in India's urbanization (Kundu 1994).

Cities with more than 1, 00,000 people have a large share of workers in manufacturing compared to other urban centers. Being linked to the national or global economy, they usually experience high and stable demographic growth. There has been a concentration of investment in the large cities, particularly in recent decades. The small and medium towns, on the other hand, exhibit a low and fluctuating growth, which can be attributed to their poor and uncertain economic base and failure to attract private investment from within or outside the country. Instability in their economic base is also reflected in the high fluctuation/variation in their demographic growth across regions, as discussed below (Kundu, 1983). Consequently, the urban structure has become top heavy.

People in small and medium towns in India, particularly those with less than 50,000 people, have low per capita income due to lack of employment opportunities in the organized sector,

low incidence of secondary activities and poverty induced growth of tertiary employment. The data from the NSS reveal that the incidence of poverty is very high in these towns compared to the metropolises or other cities. The percentage of people below the poverty line increases systematically as one goes down the population size categories (Dubey and Gangopadhyay 1999). Understandably, many small and medium towns are not in a position to generate funds to provide civic services to all sections of the population and stabilize their economic base. The percentage of households not having access to basic amenities viz. drinking water, toilets and electricity are very high here and the figure goes down with size class of urban centers (Kundu et.al. 1999).

It can be demonstrated that the larger cities are financially stronger and can take up public works and social infrastructure projects on their own which is not so for smaller towns. With the decline in central or state assistance in recent years, it is not surprising that most of these smaller towns do not make any investment for improving infrastructure and basic services. This has compounded their problems of inadequacy of basic amenities.

Scholars have argued that cities experience relatively higher and stable demographic growth because many are linked to the national and sometimes international market (Nagraj 1987, Kundu 1983 and Bhalla and Kundu 1982). In the smaller towns that are mostly rooted in their regional economy however, population growth tends to be low and fluctuating over time and space. This provides a basis for the proposition that in India, there exists a dual urban structure wherein the larger cities are integrated with the higher order system and share the growth dynamics at the macro level, which is not the case for the lower order towns.

With the launching of economic liberalization, development in India has adversely affected the growth of the medium and small towns in the country. Their economic base appears to have become weaker over time. Most of them have failed in upgrading or even maintaining basic services as a result of the private sector shying away on grounds of low profitability, and the decline in public investment. This has often led to a high disparity in economic opportunities, population density, quality of life etc. across size class of settlements.

It is observed that the local bodies in smaller towns have a low revenue generating capacity. It is important to note that the 74th Constitutional Amendment would make the civic bodies increasingly dependent on their own tax and non-tax resources. As a consequence, the disparity in the level of services and economic infrastructure across size class of urban centers is likely to increase. This, in turn, would adversely affect the level of basic services in these towns and their capacity to absorb future growth of the population or attract new economic activities.

It is surprising that much of the current policy debate and media discussion on the problems of slums and deficiency of amenities is restricted to a few large cities. The fact that greater attention is paid to these cities in the policies and programmes for poverty alleviation and provision of amenities can possibly be explained in terms of strong vested interests in favor of larger cities. These cities have greater visibility and consequently get selected for slum improvement and poverty alleviation programmes by international and national agencies. Further, it becomes easier to cover a larger number of poor households in absolute terms because of the size factor, if larger cities are selected under the programmes.

At a time when obtaining funds for investment from the private sector or the capital market has become the critical factor, the option of going for project preparation in formal or informal consultation with the "stake-holders" is an easy way out. This in effect means the private

corporate sector taking away a part of the development responsibility, through the mediation of the financial institutions. Local governments in large cities find this option hard to resist. As a consequence, they attract capital both from within and outside the country whilst recording a high population growth. Unfortunately, the small and medium towns are unlikely to benefit much from this process (Kundu 2000). The economic and demographic growth in India is, thus, likely to be concentrated in and around fifty to sixty large cities of about a million people or more. This will make the urban structure more top-heavy in future years. It is important to note that the new system of governance and urban planning, as recommended by several international agencies and broadly accepted by the Indian planners, envisages the State as a facilitator. Indeed, if the public agencies intervene as a facilitator in the market by removing its deficiencies and saving the actors from market failures, the above scenario would emerge, possibly with a greater ease.

LITERATURE REVIEW OF INDUSTRIAL TOWNS IN IRAN

In our country, the efforts to create an industrial zone was on Karaj city in 1333 that failed. This failure mainly due to lack of knowledge and experience in the organization and management of industrial cities and the most important problems facing this industrial town are the lack of infrastructure and a fundamental planning.

The United Nations in 1341 at the request of the Iranian government sent one of its technical experts to conduct preliminary studies on the creation of an industrial area to Iran. In cooperation with Iranian experts, two areas in Bandar Anzali and Ahvaz were selected for this purpose. Sending another group of United Nations experts to design, cost estimation and find places in industrial zones, the list of cities for the development of industrial cities were prepared to cities such as Hamadan, Kermanshah, Ahvaz, Dezful and among them were considered.

In 1343, an independent organization for the planning and implementation of projects in the industrial areas were created. This organization was merged with the small industries and handicrafts in 1347. the purpose of this merging was Development of small industries, concentration of industries and Small industrial installations and establish of industrial zones and finally to help investors in small industries were announced.

This center was called: organization of small industries and industrial zones of Iran. (Ghamami, 1994)

The result of this effort is the creation and utilization of five industrial zones as follows:

Ahvaz Industrial town created in 1346.

Alborz Industrial town created in 1347.

Bakhtaran (Kermanshah) Industrial town created in 1350.

Kaveh Industrial town created in 1352

Rasht Industrial town created in 1353.

In these towns residential spaces allocated for workers (Baroghi Bonab, 1999:5)

After the victory of Islamic revolution, new developments were made in industrial towns. In order to best organization of industrial activities, According to the law passed by parliament in Persian, the company of industrial town (Corporation) was registered in Companies Registration Office and industrial property of Tehran. The company started its activity in order to coordinate and optimal usage of the industrial town facilities in 1363. After the Islamic revolution, Tehran experienced rapid development in different areas out of legal boundaries and this city continued its development in different areas without following rules and restrictions. Therefore organization of Tehran space was considered by presentation of trial planes to create a balance between urban functions and spaces within the existing space in Tehran. The growth of Industry, the limitations of land, preventing and decreasing the industrial pollutants, Economic benefits and the remarkable role in the development of industry, urbane and area resulted from aggregation of industry in special places called Complement, Area, or industrial Towns. In 1367 the Supreme Council for Urban Planning and Architecture approved industry regulations and put into enforcement. It was approval that location of industrial units was identify, meanwhile construction limits were determined.

Following legislation adopted in 1370 by the Ministry of Economic and Affairs, locating of Iran's industrial assets were begun and locating plan was prepared on the basis of country's industrial development strategy. Other industrial plants in the industrial area in 1366 were established by the Ministry of Construction as "industrial zones". These areas are too small industrial town and were launched in small towns and rural areas. (Tavakolinia, 2001:15).

MATERIAL & METHODS

This research is based on Descriptive-Analytic and methods of data collection are "documents – Library and interview. The SPSS software for data analysis and Pearson correlation coefficient was used as well as. At first Fundamental data

Collect by relevant centers such as Universities, organizations, institutions and research centers such as the Management and Planning Organization, etc. one main question is stated in the study:

What is the effect of industrial town's establishment on major cities and settlement's around of them?

Hypothesis:

It seems that the establishment of industrial towns have economic-social impact on settlements and consequently on the main cities.

SOCIETY & STUDIED AREA

Mashhad is one of the largest centers of population and concentration of economic activities in the East; on the other hand this city is an important industrial city of Iran.

Mashhad city is one of the largest centers of population and economic activities in the East; on the other hand this city is an important industrial city of Iran. According to statistics of industrial towns company, 7 Industrial towns have been constructed for the establishment of industrial

units around the Mashhad city. Toos industrial town mentioned as a most important industrial towns and the most important center of food industrial in the East of the country. Toos Industrial town was approved by the Council of Ministers in 1368 and its executive operations began in 1371 and in 1378, Toos Industrial town was established. Toos Industrial Town is next to Hasanābād and is located in Razavi Khorasan of Iran.

Toos industrial town located at 1000-1500 m altitude and in mashhad-chenaran plain. It should be noted that the place of Toos industrial town in the slope's area, is less than 5 %.(Farnahad, 2010:64)

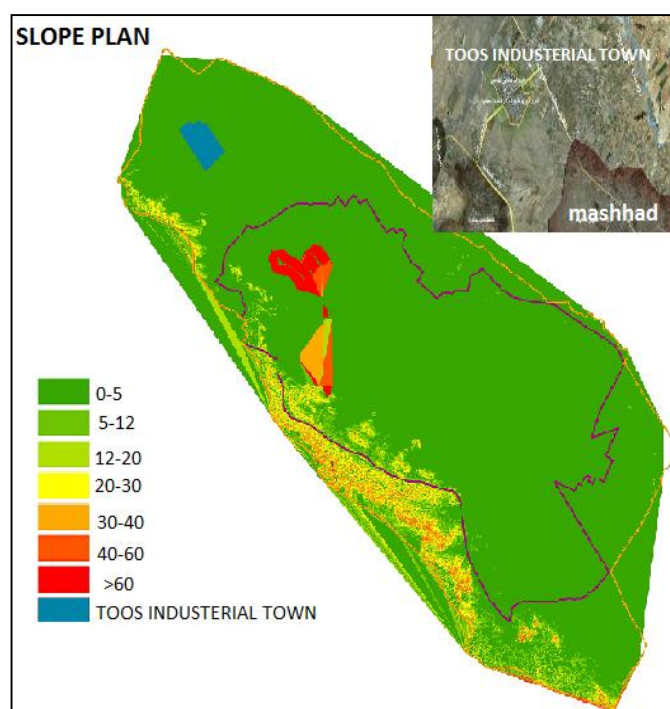


Figure 1: Toos position

FINDING

In Iran, the development of industry and manufacturing in the form of industrial town and complexes was taken to a large extent into consideration in recent decades. The goal of such towns was expressed by the Enterprise of Industrial Towns: stimulation of industrial development particularly small industries, increasing the productivity and performance of industrial units, modernization of small factories, bringing a balance between the advanced and underdeveloped areas, utilizing the natural resources in the region, performing the policy of population distribution, employment and the security measures. so there have patterns for establishment of these towns :

1-Discontinuous and independent pattern:

In these pattern industrial towns located far from the main city, for example zobahane in Isfahan is one of them.

2- Discontinuous pattern (satellite):

In these pattern industrial towns located near the main city and have Independent economy, for example kaveh as a new industrial town in saveh city is one of them.

3-Continuous pattern:

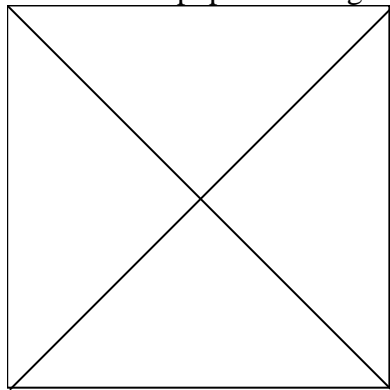
In this pattern industrial towns located within the framework of the city limits and have Independent economy.

Not only to development of industrial towns Physical environment and infrastructure reconstruction and development of technical services and facilities are needed but also Conversion of agricultural lands to residential users is also necessary. Consequent of these changes the population of the city and its settlements around the city increases.

Since the growth and development of industries in Mashhad are on the one hand, As a result, the city of Mashhad to be closer to Toos industrial town day by day. According to the subjects that expressed, Toos Industrial City follow third model.

In the first and second model special place for employees living away from the main city considered. So that the effect may not be visible on the physical growth of the city. But in the third model since the industrial zone of the city is linked to the main city, as a result employees choose the main city or village that located around industrial town for living. So residence of workers in main city lead to increasing demand for housing, increase land prices, conversion of agricultural lands to residential and pressure on urban infrastructure.

Settlement population growth around the Toos industrial town represent that



villages are opened to immigrants who leave their homelands and attracted in industrial workshops. Low cost of housing in the countryside and proximity to the industrial zone to attract them to these area.

As a result, the rural areas will lose their functions of agriculture and becoming dependent to industry and services. The villages are often in transition state, or are attracted to the major cities of the region or else be turned into cities and towns.

These villages before becoming a city or a merge to a major city, with a population of severe inflation, neither as a city nor have village's traditional role. These area are similar to Semi-urban and rural population centers which in its evolutionary process, have no stable form and is in crisis on cultural, economic and environment. With development of industrial activities, adjacent Villages become settlement area for workers and with population growth, local farmers and immigrants turn to new construction jobs, transportation, retail and etc. Therefore, the outcome of development of industrial workshops includes: physical changes, housing pattern changes, consumption pattern changes and changes on passage network in new rural zone. The

village after becoming or merging with the city, since the services and facilities for the needs of their population growth not developed. In the field of infrastructure are faced with numerous problems. In addition to, these villages becoming the city still retain the conditions and characteristics of transition phase and at this time they have extremely rural context. As a result, when talk about development of urbanization and urban life should add that this development do not follow the law governing in developed countries. In fact, the expansion of the industry without special programme will change the physical structure of these area. These changes have been made through the centralization of villages and not prevalence real urban life and no industrialization and entrepreneurship development. In order to provide better analysis in relation to employment and population growth in the settlements surrounding the Toos Industrial town in Mashhad city, the population living in the villages around industrial town were evaluated during up to radius of 10 km on decade from 1997 to 2007. From 61 villages located within a radius of 10 km to 30 km in Toos industrial town have been deserted in 2007. The people of the remaining villages (nearly 31 villages) are often migrating, so increase or decrease in population growth can be seen in 1997-2007. As can be seen, the growth rate is the reason for low population in these villages in a radius of 10 km of Mashhad. So there is a correlation between the population growth in surrounding settlements to the industrial town and the distance of them to the industrial town. As mentioned to ensure that the correlation between population growth in settlements surrounding industrial town with industrial town, Pearson coefficient was calculated.

Table 1: Pearson coefficient

Population 2007	Distance from town		
0/011	1	Pearson correlation	Distance from town
0/953	-	Significant	
31	31	number	
1	0/011	Pearson correlation	Population 2007
-	0/953	Significant	
31	31	number	

The results of the Pearson correlation coefficient between the two variables shows that the distance from town and population in 1385 have not a significant relationship ($\text{sig}=0/953$). In other words, we can say that there is no correlation between rural population in 1385, with the distance from the industrial town and it can be concluded that far or near to the industrial town on the number of people living in rural areas have a certain effect. The reason for this lack of correlation it could be concluded that vicinity of these village such as manzelabad, zarkeshkal, amirabad, to main city and large distance from industrial town and advantage of main city services. As can be seen in the table above these villages accept migrant. Based on these patterns of settlement industry and population developments about Toos Industrial City, this result is achieved: Since the pattern of establishment of industrial town is continuous, so increasing immigration from the countryside to the industrial town can be seen and it is due to having job opportunities in industry and advantage of services. The increase in immigration and settlement in the main city influence on physical structure of city and rapid growth of Mashhad city to the industrial town can be seen.

RESULT & DISCUSSION

The establishment of industrial towns around cities can also cause changes in the economic and social aspects of city and affect on physical growth of cities. The main effort of urban planners is suitable and favorable developments in cities.

If we consider the city as a system, the processes resulted from internal and external developments as factors influencing on the directions of development can be considered. And the results of the physical growth can be determined the pattern of physical development of cities.

Basically Mashhad city is pilgrimage –tourism, so it's important that positioning of the different industrial activities should be carried out with minimum impact on the physical space of the city and satisfaction of tourists. In this area, there are special features and capabilities for economic and service laboring division, but it can be seen disorder due to the lack of management for development and lack of appropriate plans. However, in many region and area of Mashhad city, the potential for industrial development and settlement services have remained unused. Investigating of the effects of the industrial zone on the city and neighboring settlements, it can be concluded that industrial town mainly caused one increase on population displacement rates in terms of immigration and marginalization in large cities. This migration is intelligent, and it is for achieving a higher level immigrants. So usually the major cities also will be changes that not only aren't adverse effects but also have significant positive effects in physical - economic and social areas. It seems that in establishment of industrial towns should be considered guidelines dealing with adverse effects, at the same time the positive effects to be considered.

Suggestions

- Locating appropriate for industrial town such that access to raw materials, markets and means of communication and not located on high quality agricultural land. In addition, we can create strong connection with the economic activities of rural areas and local markets as well as and pursue industrial strategies for rural area.
- Agriculture and gardening should be scientific and mechanized to cause productivity and more young people are attracted to it and strengthening the local economy and new jobs arise pursuant to it. This process reduces rural migration to the cities.
- The establishment of a fund to support the development of entrepreneurship and support small rural village activities is recommended.
- Upgrade the professional of informal residents in order to better jobs and income is recommended.
- Maintain and strengthen the industrial role of the northern of Mashhad city, assuming the preservation and consolidation of land uses and the provision of facilities and infrastructure required is suggested.
- Guiding and directing heavy vehicles to the old road Mashhad-Quechan to reduce the traffic and heterogeneity them to municipal organizations is suggested.
- The most important result of this industrial town are "epidemic urbanism" detection and the ongoing transformation of the populous rural to urban and integration of them with the main city. It can be countered by expansion of economic, political, cultural facilities

environs of Mashhad city with the uncontrolled population growth and physical structure growth.

REFERENCES

- Ejlali ,parviz (1995),Regional policy in developing countries ,first edition ,Tehran ,Plan and Budget Organization
- BaroghiBonab, farideh (1999), Evaluate the effects of industrial town development on the cities, Master's thesis, Tehran, Shahid beheshti university.
- Tavakolinia, jamileh (2001), Economic - spatial effects of industrial town in the district of Tehran, Ph.D. Thesis Tarbiatmodares university.
- Farnahad,Consulting Engineers(2010),development plan(Comprehensive Plan) Mashhad Metropolis, Volume 2, population studies.
- Sazab, Consulting Engineers (2006), the principles of industrial towns plan, Mashhad.
- Shiee, esmaeel (2001), Study the effects of implementation of industrial programs in the physical structure of urban space: case study (arak). Ph.D. Thesis.Tehran University.
- Zohre, daneshpour (1998), the function / activity study in Tehran, Research project of ShahidBeheshti University, Tehran.
- Ghamami, majid (1994), Comprehensive Plan for Mashhad, Journal of villages, Volume 9.
- Mills, Edwin and Hamilton, Bruce (1997), the city's economy, Translation by abdollah kosari ,Tehran, capital of Iran'sresearch and study onurban planningand architecture.
- Mousavi, seyed Mohammad, (2011), Introduction to restructure the industry and live in urban areas, Tehran, Parham Press.
- Nazarian, Asghar (2010), dynamic urban system of Iran, Tehran, Mobtaker Press.