Strategic Analysis of Past Experiences of New Towns in Iran for the Purpose of Achieving New Approaches in the Future

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Abstract: There have always been new towns throughout history. However, since after the Industrial Revolution and the increasing problems of bustling metropolises, these new towns have been paid more attention in order to solve the population and economic problems of metropolises. In our country, creation of new towns was proposed to make balance and help decentralization of big cities.

Now after a couple of decades, irregularities and problems observed have made us unsure or hesitant about continuing creating new towns because the past experiences of new towns show that, except in a few cases, the goals and objectives of these settlement centers have fundamentally changed.

This paper seeks to answer the key question: what are the most important strengths, weaknesses, opportunities and threats of past experience of New Towns in Iran?
On the one hand, this paper focuses on strategic analysis of various factors involved in the process of creating and building new towns in Iran, and on the one hand it attempts to answer the essential question of this research.

This study has been conducted with qualitative method and SWOT technique. SWOT analysis, is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project. It involves specifying the objective of the project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective. Four new towns in Iran including Baharestan, Shahinshar, Puladshahr, Majlesi new towns in Isfahan have been selected as cases of this research. These new towns were studied in eight dimensions consisting of region and spheres of influence in the town, environment and geography, urban management, population and social factors, economic and urban activity, spatial and quality of accommodation, urban infrastructures and facilities, movement and access network.
Based on the research findings, the main strength of new towns is that the prices of land and housing in them are lower than in metropolises. The main weaknesses of the new towns are inattention to environmental potentials in locating, fragmentation of urban management, and absence of participation of public in urban development plans, lack of population absorbing centers, limited employment opportunities and low diversity of jobs and so on. Feasibility to review experiences of massive urban development projects and feasibility to coordinate both public and private sectors are the biggest opportunities of new towns. Inconsistency of new towns with the goals expected for them is the main threat facing the new towns in Iran. Environmental sustainability, livability, identity creation and competition admission are the main criteria for projects and programs of new towns in Iran.

Keywords*:* New towns in Iran, strategic analysis, strengths and weaknesses, opportunities and threats, reviewing past experiences

Introduction

Creating new towns in modem style has been considered as a solution to properly settle citizens in populous countries of the world. Similarly, in our country, the government and the ministry of Housing and Urban Development has considered a new scheme for urban development of metropolises in order to make regional balance and help decentralization of big cities. It is because in recent decades urban population of Iran has greatly increased, a phenomenon that has had vast social-cultural consequences. Now after more than a few decades, it is the time to evaluate these accommodations (Etemad , 1997 : 9). Assessment is a process which attempts to find evidence and reasons for the advantages and disadvantages of a particular project in order to find the best solutions. Any assessment of the situation of new towns should be based on analytical-interpretive views and should be done scientifically (Behzadfar , 2009: 51). This means all the parameters affecting the design and construction of these houses such as the region, the environmental and geographical conditions, urban management, population and social factors, economy and urban activity, the quality of accommodation, urban equipment, and access should be taken into account so that comprehensive and strategic criticism of new towns can be achieved.

For making any decisions about the future of new towns, firstly their present situation should be analyzed. Therefore, strategic analysis of past experiences of Iranian new towns can help understand the challenges and problems of new towns, scientifically. So, firstly, the points of strength, weaknesses, opportunities and threats of new towns should be recognized in order to be able to present solutions and administrative policies of planning and design to modify and improve the existing conditions of new towns and also to clarify design criteria of future towns. This is what the present research study attempts to do.

Literature Review

The definition of new town

Like other social concepts, the concept of town or new town has no complete definition containing all the features of it. Everyone has a different definition of it depending on the town, and its goals and design. Below, some definitions will be presented:

1. “New towns are towns formed after 1917 because of development of a) Arid areas or areas with scattered development b) villages changed to towns c) small and medium towns with high growth rates and rapid increases in population”(Underhill, 1991: 49)
2. “New town is a town that is not dependent on the metropolis in terms of employment and is self-sufficient in terms of services as much as” (a collection of articles in Seminar of new towns, 1968: 7)
3. New Town is a planned society that is created in response to pre-determined targets. Usually new towns are created for physical, social and economic decentralization of large cities. Since they are located near metropolises, the population is encouraged to leave metropolises to settle there. (Ziari, 2004: 5)
4. A new town is an area located out of urban areas. It can settle over 50000 individuals or it has at least 10000 residential units in addition to essential public buildings and facilities. (Regulations for construction of new towns approved 5.25.1992) Chart 1 shows the criteria of defining new towns in the present study.

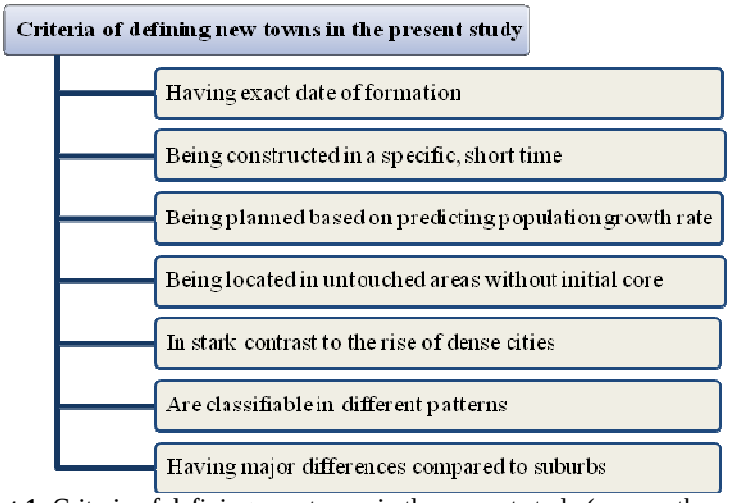

Chart 1- Criteria of defining new towns in the present study (source: the authors)

The definition of New Town Development Company

Before the construction of a new town, its Development Company should be established. The company is responsible for land preparation and ownership, land planning, administration of development plan, provision of basic services and required equipment, financial resource management, land preparation, and conducting site selection, economic, social, and physical studies. Iran Development Company credits through the pricing of the new city are provided as the most important source of investment return on investment. Its funding is provided by the Ministry of Housing and Urban Development. In Iran, its funding is provided through pricing land in new town which is the main source of returning investment. (Ziari, 2009:145)

Organizational structure of each development company consists of four parts:

1.The team of planners: in development companies, this team consists of the following experts:
urban and regional planners, urban designers, architects, sociologists, economists, geologists, geographers, computer programmers, environment experts, and housing and transportation experts.
2. Advisory Commission: the members are local people or volunteers interested in the project
3. Board of Directors: The Board consists of landowners, investors, representatives of the region and representatives of the Planning Team.
4. Construction circle: being appointed by the Board of Directors, the circle makes decisions about the required equipment. (Ziari, 2006:415)

Different kinds of new towns

New towns can be categorized into two groups based on their size, distance, population and the level and kind of economic activity.
First, in terms of form / function, they can be divided into two groups of independent new towns and new conurbations.
The second classification concerns specific function of new town and is divided into new colonial towns, new towns which can be overflown, new capitals and new industrial towns. (Galantay ,1975: 39)

The aim and functions of new towns

Since the middle of the present century, following studies in the field of dynamic nature of town, major changes have happened in the design of new towns. Since then, the aim of new towns has been creating a system that presents the framework for various activities of individuals and has the flexibility to develop along with dynamic nature of towns in long term (Pakdaman, 1992). Depending on the kind of new town, the aim of it can be different. One of the most general objectives of creation of new towns is providing new space for population overflow of larger cities and metropolis. Considering distribution and concentration, the idea of new towns can be suggested because of two reasons. In the following they will be discussed.

a) decentralization of big cities: new towns are connected to metropolis and have some functions of big cities that can be transferred to small towns
b) Centralization of underdeveloped areas with development potentials: new towns function as development centers or development poles connected to regional sources and are located in far distance from big cities. These new towns actually have enough concentration of economic professions and make it possible to use natural resources by mobilization of financial resources, human resources and technology. These towns are usually located in areas with scattered and weak accommodation centers. (Sarrafi, 1989: 42)

Theoretical perspectives that govern the design of new towns

The theory of new towns is inspired by various theories and Ebenezer Howard has been the main theorist. Howard suggested his theory as Garden towns. But gradually over the intellectual developments of the century, the theories of Suburbs, neighboring units and finally new towns emerged. In addition, in the context of industrial development (industrial revolution), two theories of “reformers” and “utopians” were also formed. Reformers, within the framework of cognitive technology perspective, believed organizing and improving urban environment is possible and they believed that modernization and improvement should be done from inside. On the contrary, utopians believed in creating utopias or new towns rather than industrial ones. But the theory of Howard has been based on spatial organization of large cities, distribution of population and industry, providing housing, settling workers of especially industrial sector, employment and self-sufficiency. In fact, his theory includes integration of city and village. There is a green belt around Garden town, where food and required services must be provided. Following the theory of Howard, Garden Town Development Company and other construction companies were established in

the UK with the aim of building new towns. But in the realm of ideas, following Howard's theory, several other theories like Tony Grannie' s theory of industrial town(1917), Paul Wolfe's theory (1919), Raymond Alvin's theory(1922), and Le Corbusier's theory came into existence. Following these theories, the Association of urban and rural planning emerged and the university major "urban planning" was introduced as an interdisciplinary field of study. But the important thing was the attention of the British government to this case because of the damages caused by the Second World War and the creation of various commissions by Lodrite and sir Mantgiobarlo which paved the ground for creation of new towns based on the policy of decentralization of populated urban spaces (Ziari, 2004: 7-10).

History and the process of creating new cities in Iran and the world
History of new towns in the world

Since the construction of new towns started on the eve of the century with the theory of Howard as well as garden towns of Welding and Latch Worth, the goals and typology of these residential centers have undergone big changes. Based on this, new urban residential centers can be divided in three periods below:

The first period: Garden town as the prototype of new towns (1938-1898)

In this period, garden towns, conurbations and new towns were considered as solutions for rapid growth of a number of British cities, especially industrial ones. The total population of these towns is around 30 thousand people. In this period, the role of the government in the development of these towns and the transfer of excess population to garden towns are emphasized. During this period, new towns remain in the form of theories and just a few cases of them are constructed.

The second period: the policy of confrontation with the growth of metropolitan areas (1960-1938)

By the end of World War II, Great Britain, once again, was a pioneer in the development of new towns. Garden towns became important as a means of organizing urban metropolis. Therefore, new towns were built in a distance from big cities as main center of activities or potential urban pole. In this period, decentralization policy was not paid attention to and new town development plans were administrated independently in the process of planning socio-economic development and appeared as luxury investments which can only be administrated in times of economic boom. Therefore, the construction of new towns around some major world capitals (Moscow, Paris and Tokyo) began as new towns in Britain were developing. The function of most new towns was preventing overpopulation of big cities (especially capital cities).

The third period: the changes in the aims and goals of new towns (1970-1960)

During this period, new towns served as a means of organizing national space, regional planning and population and economic decentralization policy. In the third period, new towns in Great Britain were at the service of economic development at the regional level. Creating new capitals (Shandygar, Brasilia and Islamabad) in developing countries can also be considered as a goal. Considering the emergence of new issues such as the polarization pattern of residential centers, the regional imbalances and the emergence of a gap between the regions in this decade, fixing the problems and paying attention to decentralization were among the objectives of creating new towns.

The history of new towns in Iran

Experts in the field consider four clear phases for the history of new towns in Iran

The first period: between the two world wars

Residential areas built in this period along with developments in infrastructures and industries are mainly classified into three groups:

a. Cities created with a specific political-military purpose, such as Zahedan and Noshahr.
b. Cities founded with specific economic goals, such as Noshahr in the north and Naftshahrs in the south.
c. Residential areas in the vicinity of large cities for those employed by the government.

An important feature of this period is village-like structure of these areas which gradually disappeared under the influence of dominant urban structure. (Masoomi Eshkevari, 1993: 24-25)

The second period: from the end of World War II to mid-40s (solar year)

This period coincides with the rapid growth of the oil-related industries and the development of other industries and new economic fields. The majority of towns built are Naft shahrs (oil towns) and residential centers for employees. Some of these towns were one dimensional, i.e. they were dependent only on a certain industry- particularly oil - and served as mere dormitories. Examples of these towns are Haftgol, Lali, Naftesefid and Anbar. Some other towns were located in the vicinity of a city and they in fact were residential centers for the employees of large organizations. But they were so big and important that even dominated the base city. The most obvious examples are Abadan and Mahshahr, two new Iranian towns. (Masoomi Eshkevari, 1991: 24-25)

The third period: from mid-40s to the time of the Islamic Revolution (1978)

In this period, the accumulation of petrodollars in new industries and economic sectors reached its maximum and also the population of cities increased. Therefore, the creation of independent industrial new towns and conurbations flourished. For the first time, in this period, new towns were located in great distances from urban areas without a rural core. The other phenomenon seen in this period is creating multi-function towns which are not dependent on only one particular industry. New towns in this period were created because of two main reasons summarized below:

1. Creating new centers to exploit regional potential and economic growth achieve national social goals and distribute the resources and investments in the country.
2. Attracting excess population or overflow of big cities and settling migrant populations. In the second case, large residential complexes are constructed in a certain distance from major cities or even attached to them as dormitory towns.

In fact, the creation of such new towns is lacking in financial justification, management, administrative systems and legal rules. That's why they have not been successful. Zarand in Kerman and Mes Sarcheshmeh, Ramshhr and Jarahi are examples of these towns which have not reached their goals and have imposed heavy costs on industries.

The fourth period: post-revolution era

In the early years after the revolution, change and revision of development patterns on the one hand and the imposed war on the other hand hindered the construction of new towns. But in recent years, the subject of creating new towns is taken up again. It is particularly because of the high rate of population growth. The major difference between today's proposed new towns and new towns of the third period is in their function. In the past, the construction of these cities was based on a kind of economic functionalism (single or multi-base) but today's new towns are considered as spaces where overflown population is settled. So, they are more like conurbations rather than industrial new towns. Based on the latest insights gained about these towns, in order to prevent pendulum migration, employment opportunities in these towns have been taken into account and gradually these towns have been relatively closer to industrial new towns. (Masoomi Eshkevari, 1991: 24-25)

A review of the experiences of new towns inside and outside the country and their analytic comparison

The idea of new Iranian towns, whether before or after the revolution, has been inspired by western countries in terms of the requirements, methods of execution and patterns of urban design. Therefore, there are the following general similarities in them:

(a) The strategy was introduced in Europe after the Industrial Revolution. In Iran, too, it dates back to the time of the industrialization of the country (the shift from agricultural society to industrial one). This means industrial revolution and consequently the immigrating from villages to towns led to overpopulation of big towns and new towns were created to prevent the problems mentioned earlier. In Iran, too, industrialization of the country and Land Reform policies caused big waves of immigration to urban areas and new towns were created to prevent overpopulation. Therefore, they both had the same requirements to exist.

(b) The strategy of creating new towns in both Europe and Iran has been a top-bottom reform, since it was designed and run by governments (especially Iran and France are very similar in this case. In other countries too, at first the entire project was run by government and after some years, private sector became active).

(c) Creation of new towns in developed countries started far sooner than in our country. Therefore, there are differences in shape and content including phase difference in start and completion of project. This means developed countries faced the problem of overpopulation sooner than Iran and they have attempted to find solutions and strategies to tackle the problems. Overpopulation in Europe dates back to the early

years of the 20th century, when the idea of garden city was introduced by Abenzor Harvard in England. It can be considered as the initial core of modern style of new towns. However, new towns, in their modern style, date back to about 40 years ago in Iran.

Table 1 shows comparative-analytic investigation of the experiences of new towns inside and out of the country:

Table 1- Comparative-analytic investigation of the experiences of new towns in Iran and other countries (source: the authors)

The similarities between the experiences in Iran and other countries	**The differences between the experience in Iran and other countries**
- Being introduced after industrialization and vast waves of immigration to big towns -The top-down reform strategy being run firstly by government - The change in attitude from social welfare to economy-oriented look to new towns. - The appearance of unemployment, multiple deprivations and - The lack of welfare services. -Identity crises in citizens.	- A 60-year time gap in initiation and completion. - Differences in goals, principles, structural features, content, functionality, process and methodology. - Provision of national and regional backgrounds in policy system. - Making cultural, social preparations - High speed of construction: attracting both immigrants and investors.

Although there are many differences in goals, principles, structural features, content, process and methodology of new towns in the world, there are some points of similarity between Iran and other countries which are mentioned below:

(a) In spite of good management and planning in new towns with long hosiery in the world, multiple deprivations, unemployment, environmental unsafely, and lack of services are unavoidable. These can be attributed to the lack of a clear, practical statement of goals as well as the changes in goals and attitudes.

(b) Privatization has benefitted neither the citizens nor local authorities.

(c) Not controlling land price and putting land and building spaces in real estate market has not benefitted the citizens and local authorities of new towns; instead , it has only helped and benefitted land opportunists.

(d) The development and management of new towns need legal, financial and technical instrument. Indeed , in addition to a development program, a long-term plan for all the elements of planning system is needed. Moreover, resources should be allocated and purposeful and efficient use of instruments should be considered.

(e) The change in goals and attitudes to new towns form social welfare and public welfare to economy-oriented view, which considered a new town as a commodity to produce income and benefits, has just led to failure, both economically and in terms of welfare.

(f) Inconsistency and changeability of national and regional policies lead to overlap and negligence of development operations and finally lead to resorting to autonomy. Consequently, new towns are left alone, which is a waste of local resources.

(g) Although urban planning for new towns is in the framework of common urban and regional methods of planning, it has its own unique features not understanding of which leads to making mistakes in planning and management of these towns. New towns require inclusive planning for all systems and sub-systems, such as residential service, financial, and organizational sub-systems

(h) Considering the nature of new towns, urban management strategies are needed to tackle the existing problems as well as those problems predicted to happen by studying the problems of other countries.

(i) Special, innovative and non-traditional designs of new towns demand more amounts of money to repair and restore the structures over time, compared to those projects based on long-term economic policies.

(j) Creating job opportunities is very important; towns should not be just a residential area to sleep in.

(k) It is of vital importance to provide recreational facilities and sport centers.

(l) As the population increases, investors in private sector become more willing to invest in new towns. (Daneshpur, 2005)

The main factors contributing to the relative success of new towns in the world are summarized in the table 2:

Table2- The main factors contributing to the relative success of some new towns in the world
(source: the authors)

the main factors contributing to the relative success of some new towns in the world	-Political determination
	-the existence of the project of construction
	consistent and united urban management
	-efficient administrative management
	-self-sufficiency
	-creating urban identity
	-offering population-attraction centers
	-financial contribution of private sector
	- participation of public
	-the continuation of the process of development
	-continuous assessment

Methodology

In this research, a qualitative research method with SWOT technique is used. Adopting this approach has been for in-depth studying and discovering the true strengths and weaknesses, opportunities and threats facing Iran's past experience of new towns. The participants in the study are 30 academic experts and 30 individuals selected among the administrative authorities of the new towns. The reasons behind using them were their relevance to the subject is study of this study and their sufficient academic and administrative experience. In addition, considering purposive sampling, the participants were selected among university professors and representatives of Development Company. Then, the academic experts were interviewed individually and administrative planners of new towns were interviewed as a group. The final list was provided using the Delphi technique through the combination of similar responses and omitting marginal ones.

The sample population

The sample population consisted of 60 individuals 30 of whom were researchers and university professors and 30 other were administrative planners in the field of planning and urban design working in New Town Development Company.

Sample size

In this case study, four new towns of Pooladshahr, Shahin Shahr, Majlesi and Baharestan were selected.

Research variables

The study is based on eight dimensions: the area of influence of the town, the environment and geography, urban management, population and social factors, economic and urban activities, physical and quality of housing, urban infrastructure, and access. In each of these dimensions some indices are defined which have been presented in the table.

Method of data collection

One method of acquiring knowledge is using the Delphi technique. The Delphi method is a structured communication technique or method which relies on a panel of experts. Its purpose is to reach a consensus while being able to freely express and revise ideas through numerical estimates. Consensus does not necessarily mean a correct answer is obtained. It simply means participants reach a certain level of agreement over an issue. The experts answer questionnaires in two or more rounds. After each round, a facilitator or change agent provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. Delphi implementation is a time-consuming process. This includes the time required to coordinate (organize, request and receive information), the time required to think, to write and to send it to the experts.

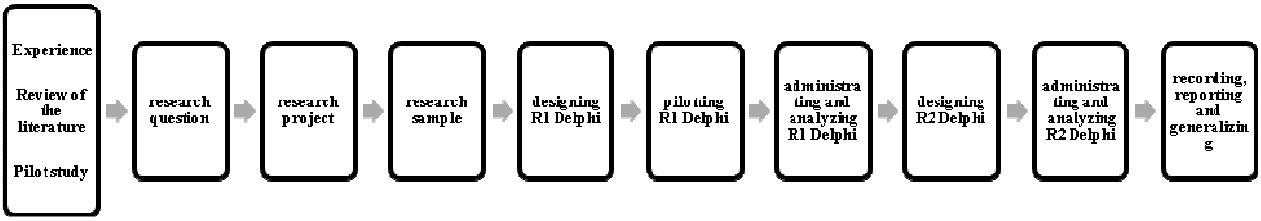

Chart 2- Method of data collection

In this study, to collect data, the participants were asked to fill in the questionnaires after studying a comprehensive, detailed review of the new towns and investigating land use per capita, field surveys and interviews with citizens of the new towns selected in this study.
In the first questionnaire, the questions are open in order to make it possible to spot the main points of strength and weakness of the selected new towns, while in the second questionnaire which aims at investigating the eight dimensions of the study the items are closed (Table 3).

The first questionnaire

1. What do you think are the most important strengths and opportunities facing new Iranian towns (in terms of the eight dimensions)?

2. In your opinion, what are the most important weaknesses and threats facing new Iranian towns (in terms of the eight dimensions)?

The second questionnaire

Table 3. The second questionnaire in Delphi Method (source: the authors)

code	Evaluation criteria and indices	Extremely	Very	Average	Not very	Not at all
To assess the success or failure of new towns, how important do you think is the impact of each of the following criteria and indices?						
1	**A) environmental criteria: maintaining the ecological balance in the region**					
1-1	Index: sustainable urban environment					
1-2	Index: balanced loading of life and work in accordance with environmental capacity					
2	**B) demographic criteria: creating centers of attraction**					
2-1	index: identifying social and economic status of the target population groups					
3	**C) social criteria: social justice and security**					
3-1	identity and social cohesion in the creation of the concept of citizenship					
3-2	individual and collective welfare and comfort					
4	**D) criteria of economic and urban activities: strengthening the foundations of the economic system in order to create endogenous economic structures**					
4-1	index: creating a wide, inclusive and diverse range of jobs and activities					
4-2	index: self-sufficiency and self-reliance in order to meet the financial needs and welfare of the town					
5	**E) physical standard and quality of living, improving the quality of urban environment and living features**					
5-1	index: giving identity to the appearance and looks of town					
5-2	Index: presence of nature in town and creating a balance between natural and built environment in town					
5-3	index: perfection of the town at any time in spite of its gradual completion					
5-4	Index: strengthening the sense of belonging and the desire of people to stay in town					
6	**F) infrastructure: development and fair distribution of urban infrastructure in town**					
6-1	Index: infrastructure development in proportion to the density and spatial distribution of population					
6-2	index: Designing a balanced and equitable distribution network for the installations and facilities					
6-3	Index: correct locating of facilities, taking defense considerations into account					
7	**G) spheres of influence in the region: creating an atmosphere of cohesion and identity in the urban hierarchy**					
7-1	Index: efficient use of internal land					
7-2	Index: strengthening cross-regional functions					
8	**H) access criterion: development of sustainable transport**					

8-1	Index: adaptation of transport system with spatial organization					
8-2	Index: organizing communication network, improving traffic and ease of access					
9	**I) management criterion: improving urban management structures and strengthening public participation**					
9-1	Index: unified management of town					
9-2	Index: management based on participation of public					
9-3	Index: efficient executive management					
9-4	Index: continuous and comprehensive evaluation and foresight					
How much do you think is the impact of the following weaknesses in town's lack of success?						
10-1	Locating based on government policies					
10-2	Lack of understanding of target groups					
10-3	Reliance of sources of income of new towns on land sales and pre-sales of land and building prior to constructing new town					
10-4	Inattention to superior projects and cultural functions					
10-5	Lack of attention to ways of financing new towns					
10-6	Lack of attention to employment and reasonable needs of residents					
10-7	Economic attitude to town, instead of paying attention to welfare					
10-8	Lack of attention to required legal, technical and organizational tools					
Decide on the national priorities of the following urban policies						
11-1	Development of other new towns					
11-2	The revision of existing new towns and stop development					
11-3	Development of village-towns					
11-4	Repairing run-down buildings in towns					

Data analysis method

A SWOT strategic analysis examines internal and external environments, evaluates monitoring and evaluations, and checks the effectiveness and efficiency of processes. It actually examines strategic management of the interaction between internal and external environments through the development of appropriate strategies. A SWOT analysis is a structured planning method used to evaluate the **strengths, weaknesses, opportunities and threats** involved in a project. This is one of the most important tools to adapt to the strengths and weaknesses of a business with the opportunities and threats facing it. Internal strengths and weaknesses are compared to external opportunities and threats to find adaptive pattern of internal and external situation. (Musaie, 2011:130)
Chart 3 depicts the analysis of the findings.

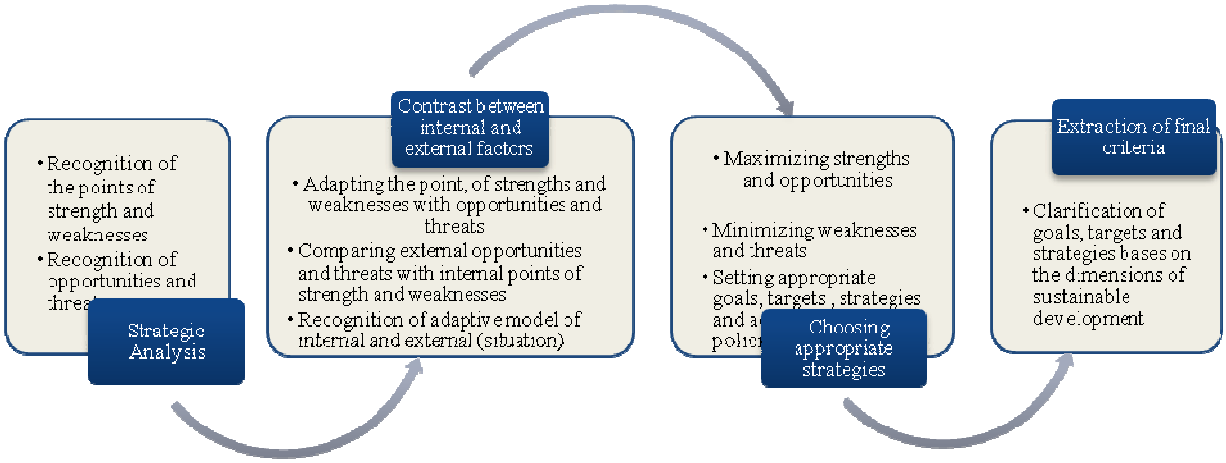

Chart 3- Analysis method of research findings (source: the authors)

The cases of the research study

Four towns of Baharestan, pooladshahr, shahinshahr and Majlesi were selected as cases of the research.

Urban region of Isfahan

Isfahan region, a region with Isfahan in the center, is an area with a radius of forty to sixty kilometers from the center. It is 5580 square kilometers big. Until before 1345 when Zoobahan steel plant was founded, the city's initial skeleton has consisted of two agricultural poles but now it has two industrial poles, instead. One of these two poles is in the East and has the city of Isfahan in the center, and the other one has Zobahan steel plant in the center. In urban centers, in addition to the city of Isfahan, there are other towns including Shahin Shahr, Malekshahr, Khaneesfahan, Rehnan as well as a few villages. The main reason for the existence of Poolad residential-industrial complex is Zobahan steel plant. The main part of Poolad complex is the new town of Phooladshahr. Urban region of Isfahan is the second most powerful industrial poles of the country.

The population of the region had the highest rate of urbanization over a twenty-year period (1345-1365) in the whole country. This figure has also been high in urban areas (16/5 percent). This is because of rapid industrialization of the region. Thus, in the urban region of Isfahan, four new towns of Pooladshhr, Shahin Shahr, Majlesi and Baharestan have been formed to absorb excess population, and create balance. Below, they will be briefly introduced.

Pooladshahr

Pooladshahr new town is situated 35 km southwest of Isfahan. It is 10 Km far from Steel Plant, 35 km far from Mobarakeh Steel Complex, and 15 km far from Sepahan cement plant. It is in the vicinity of Isfahan-Shahrekord road. It is located on the slopes of mountain, which is one of the characteristics of Iranian cities. LENJAN's beautiful scenery and mild slope of the area have paved the ground for industrial and urban development of the town. Pooladshahr's history is very short. In 1345, simultaneously with the construction of Zoobahan steel plant in Isfahan, the idea of creating a new town for the settlement of the employees of Zoobahan steel plant and related industries was suggested.

The town is designed based on the pattern of urbanization in developed countries using high economic-technical standards and technology. There are two hills in the town which are considered two important landmarks of the town and with Zoobahan steel plant and the land for future development of the town form the skeleton of the town. The division of the town is based on the hierarchy of region, quarter and neighborhood. Before the Revolution, public administration of organizational neighborhoods of the town constructed (B1, B5, A2, A3, B2, B3) to house Zob-Ahan workers. These neighborhoods enjoy appropriate urban shape, a combination of different forms of construction with different heights (from one to twelve floors), and distribution and extension of public green spaces and semi-private green space. These areas have been made using governmental funds. After the Revolution, neighborhood A1, A4, and A6, which do not belong to any organizations, were built. They have been built by public sector investment. Now, after about 30 years since the town was formed, there are only eight residential neighborhoods which Includes a total area of less than 10% of the land. (http:// Pooladshahr-ntoir.gov.ir)

Shahinshahr

Shahinshahr is a new town located 24 kilometers to the north of the city of Isfahan. It is next to Tehran-Isfahan road. Some land owners created this town 1350 in Borkhar without any initial nucleus. Immediately after that, Development Company established Shahinshahr. Following that, Williamson Company conducted studies on the settlement of 200 thousand people there. The purpose of creating this town was merely satisfying financial purposes of the administrators through settling Americans. It was initially in the shape of a falcon with open wings. That's why it is called Shahinshahr. Shahinshahr's spatial shape can be investigated in three periods: foundation, the settlement of Americans, and post-revolution.

a. The period of foundation: Capitalist thinking that emphasizes using the simplest solutions for urban development is one of the main principles of urban planning in this period. Obvious urban elements of this period imply lack of identity and taste in urban development. Unlike traditional Iranian cities, Shahinshahr does not have local characteristics, such as markets, mosques and schools to differentiate different social groups.

b. The settlement of Americans: In 1350s, the American companies such as Flora, Gross and Northrop were established around Shahinshahr. Settling Americans in the town created a special ecologic area there and

affected everything. The construction of official-residential complexes for the employees of Bell and Grumman Corporation caused special ecologic areas to appear in the town. (http:// Shaahinshahr-ntoir.gov.ir)

c. Post-revolution era: in this period there is no private ownership anymore. The land belongs to a charity organization supporting the poor. Governmental organizations have attempted to help the development of the town by selling land at a low price, settling war victims and administrating numerous other projects.

Majlesi

It is located on southwest of Isfahan and has been mainly formed to house huge Mobarake steel complex workers as well as workers of other nearby industries, stop construction and development directed toward the south Zayandehrud, and prevent loss of agricultural land and environmental degradation. Over 90 percent of the plans and programs specified for the town have been done so far using the budget allocated to it in order to meet the needs of the town.

Baharestan

Baharestan is a new planned city situated 15km south of Isfahan and along Isfahan-Shiraz Road. It is situated on the slopes of Lashotor Mountain and Miyankooh mountains and has a nice view of Zayanderood plain. Its height is 1570 meters above sea level and slope of the land is between 2 and 7%. The annual rainfall is approximately 117 to 120 mm. benefiting from beautiful nature, gentle slope of land and proximity to the city of Isfahan, Baharestan ahead of other towns and the land is more physically developed. This regional, long-term project in an area of 3000 hectares has been designed for the settlement of 320000 individuals. However, the town has potentials to settle as many as 500000 individuals.(http://Baharestan- ntoir.gov.ir)

Results and Discussion

The final version of the data obtained by the strategic measurement of new towns is as follows:

The main points of strength, weaknesses, opportunities and threats that new towns should deal with.

The main points of strength, weaknesses, opportunities and threats concerning new towns are categorized in tables 4,5 ,6,7 in the eight dimensions mentioned earlier:

Table 4- The main points of strength extracted by strategic assessment of new towns (source: the authors)

Dimension	code	The main points of strength	Total weight	Rank
Geography and Environment	S_1	- The existence of agricultural land and gardens as ecologic elements around the town	232	1
	S_2	- Reducing air-pollution compared to metropolises and benefiting from a more pleasant weather	211	2
	S_3	- The possibility of designing green spaces and afforestation in order to filter the city air	184	3
Urban Management	S_4	- the high share of city council from general and specific taxes, especially for construction permit	167	1
	S_5	- Reducing the dependence on governmental income		
	S_6	- Attracting Professionals in urban affairs to participate in town management	145	2
Population and Social factors	S_7	- Young population and as a result high dynamism		
	S_8	- The balance in gender structure of population	174	1
Economy and civil activity	S_9	- The existence of experts, especially in fields of industry and agriculture	332	1
	S_{10}	- A large active population	321	2
	S_{11}	- The existence of the right conditions for constructional activities.	311	3
	S_{12}	- Offering bank loans for construction and purchase of houses	265	4
	S_{13}	- lower price of land and house, compared to big towns	243	5

Quality of settlement	S_{14} S_{15} S_{16}	- The high cost of new constructions - The lower density of family in residential units - The existence of separate plan for central part of the town (city center)	222 232 243	3 2 1
Urban facilities and equipment	S_{17}	- High rate of facilities per capita, considering low population density	145	1
Transport and Communication Network	S_{18} S_{19} S_{20} S_{21}	- The ease of transport in streets and high speed of it - Hierarchical structure of communication in access network. - The consistency of spaces and sidewalks in neighborhood. - Separating traffic by creating slow route around neighborhoods.	423 421 375 357	1 2 3 4
Region and Sphere of influence	S_{22} S_{23} S_{24} S_{25}	- The existence of internal development potentials. - The existence of natural barriers to prevent horizontal urban sprawl. - The possibility of creating recreational centers with urban and suburban functionality - Contiguity with metropolises and the possibility to benefit from the facilities and services there	356 345 322 298	1 2 3 4

Table 5- The main points of weaknesses extracted by strategic assessment (source: the authors)

Dimension	code	The main points of weaknesses	Total weight	Rank
Geography and Environment	W_1 W_2 W_3	- Inattention to environmental potentials in locating - City sprawl to quality agricultural lands and environments with natural value - Inattention to a kind of architecture which matches climatic and environmental conditions.	322 316 312	1 2 3
Urban Management	W_4 W_5 W_6	- Fragmentation of the structure of urban management - The lack of the participation of public and private sectors in planning urban development - Not evaluating the experience of the development of new towns and also the lack of foresight.	276 267 243	1 2 3
Population and Social factors	W_7 W_8 W_9 W_{10}	- Not achieving the determined population targets - The lack of population-attraction centers - The lack of identity and social unity in creating the concept of citizenship - The lack of balance in age structure and social- economic structure of population.	322 308 287 264	1 2 3 4
Economy and Urban activity	W_{11} W_{13} W_{14} W_{15}	- Limited employment market in new towns - Insufficiency and dependence in satisfying financial needs of city - Not benefitting from governmental funds ever after announcing Autonomy - Unfair distribution of governmental funds only in 5 out of 18 new towns. - Scattered nature of development and creation of a feeling of insecurity.	211 201 176 154 124	1 2 3 4 5
Quality of Settlement	W_{16} W_{17} W_{18}	- Lack of logical relation between structure and functionality of town. - Land ownership and building ownership (government as land merchant) - Inattention to the aspects of visual quality of the environment and the perception of citizens from city.	254 244 232	1 2 3
Facilities and Urban equipment	W_{19}	- Lack of coordination between infrastructure networks and the rate of residential development	196	1

	W_{20}	- Poor condition of infrastructures (urban facilities, roads,…) due the their low quality	184	2
Transport and Communication Network	W_{21}	- Commute to metropolises and heavy traffic in rush houses.	243	2
	W_{22}	- The difficulty of accessing spaces without having personal cars due to separation of spaces for user	231	3
	W_{23}	- Limited public transport network and not designing roads to tackle transport problems	251	1
Region and Sphere of influence	W_{24}	- Not making optimal use of internal land and horizontal sprawl.	284	1
	W_{25}	- Incoherence of spaces in urban hierarchical system.	269	2

Table 6- The main opportunities caused by development of new towns extracted by strategic assessment of them (source: the authors)

Code	Main Opportunities (O)
O_1	- The opportunity to use vast experiences of urban development.
O_2	- The possibility of coordination of the projects of private and public sectors.
O_3	- The opportunity to control and schedule development and plan
O_4	- New opportunities for investment in new towns.
O_5	- The possibility to use innovative scientific ideas, considering the size of development.
O_6	- Introducing the idea of "with the environment" such as a nature-loving town
O_7	- The possibility to manifest towns that are human-oriented
O_8	- The possibility of providing highly efficient infrastructures in large size, compared to the existing urban areas
O_9	- The possibility to make use of new technology and material for construction in large scale.

Table 7- The main threats for new towns extracted by strategic assessment of them (source: the authors)

Code	Main Threats (T)
T_1	- Considering New towns as laboratories to urban design and planning
T_2	- Contrast between idealistic goals and reality
T_3	- Inability in achieving double goal of satisfying residential needs and employment self-sufficiency.
T_4	- Contrast between allocation of residential units based on employment and allocation of residential units based on needs
T_5	- Contrast in making a balance between gaining good profits for the investment of private sector and satisfying outcome for society in the investment of public sector in new towns.
T_6	-Contrast between establishing a specific organization for urban development of new towns with responsibility toward central government (civil companies) and transfer of money to local authorities while local authorities have a share in the profits.
T_7	- Contrast between the policy of low population density in new towns and the goal of increasing physical accessibility
T_8	- Contrast between cost-effectiveness of development of new towns and allocating budget to them or giving the priority to the restoration of old areas of the city.
T_9	- Contrast between the two goals of preventing the creation of towns that act just like dormitories (places for sleeping only)and having city borders acting like an iron barrier.
T_{10}	-Contrast between the responsibility of the government for land market regulation and the goal of creating new towns in order to balance housing market by setting land with the intention of the government raising money
T_{11}	-Contrast between the goal of new towns for spatial reform and multiple deprivations of new towns: insufficient infrastructures, improper housing and high rate of unemployment.
T_{12}	- The culture under the influence of architects and engineers, focusing on the management development
T_{13}	- The inequality between financial profitability of new towns and high costs such as environmental costs.

Strategies for the contrast between internal and external factors in new towns

Table 8 shows the matrix of the contrast between internal factors (the points of strength and weakness) and external factors (opportunities and threats)

Table 8 -The matrix of the contrast between internal factors and external factors (source: the authors & Construction Company of Naqshejahanpars NewTown)

The contrast between internal and external factors		**Internal factors**	
		Points of strength (S)	**Points of weakness (W)**
External factors	**Opportunities (O)**	**S-O** - Monitoring the maintenance of natural landscapes around the town. - Maintaining and modifying the efficiency of residential areas and completing the capabilities of urban settlement - Maintaining natural ecosystem of city - Planning to use renewable, clean sources of energy - Improving hierarchical system of communication network - Providing the requirements of creating employment opportunities in various economic sections.	**W-O** - Strengthening the existing potential combination of activity and settlement - Providing the requirements for usage in corporation. - Controlling and maintaining the existing spatial structure and balancing it - Conforming to environmental principles in urban development and the establishment of non-interfering workshop activities in city - Improving traffic conditions and the ease of access.
	Threats(T)	**S-T** - Adapting residential development with existing infrastructures. -Strengthening social institution, and local participation. - Making urban spaces attractive - Providing the required space for each citizen - Conforming to the hierarchy of functionality of urban services - Preventing horizontal sprawl of city. - Preventing the integration of expanding city and neighboring villages - Preventing polluting the environment -Recognizing and depending on sustainable sources of income and decreasing the role of unstable sources of income	**W-T** - Increasing participation level of citizens in city affairs - Maintaining and developing local architecture of region. - Strengthening logical consistency of the appearance of city. - Increasing the presence of the public and their roles in running urban development projects - Accordance of inter-organization and intra – organization institutes related to city affairs. - Maintaining economic stability.

Conclusion

Based on the results obtained by Delphi questionnaire in strategic assessment tables, the total weight and rank of each point of strength and weakness of the selected new towns have been determined in the eight dimensions of the study. Using the results obtained through this assessment, it is attempted to take new attitudes towards finding the best solutions in the future. In the following, criteria and indices of design extracted by strategic assessment of new towns in order to strengthen the points of strength and remove the points of weakness will be presented. These criteria are then compared to the criteria extracted from theoretical framework of the research study and then they are mixed based on the three dimensions of sustainable development (social, economic, and environmental dimensions) to help assess the existing new towns and design the future ones.

Extracted criteria and indices of designing new towns obtained by strategic assessment:

Table 9- Extracted criteria and indices of designing new towns obtained by strategic assessment **(**source: the authors)

Dimension	Criteria	Index
Environment	Maintaining ecological balance of region	-making sustainable urban environment -locating city based on environmental capabilities -balanced loading of environment and activities
Urban management	Upgrading the structure of urban management and strengthening participation of public	-united management of city -management based on participation of public -efficient administrative management -self-sufficiency and independence in satisfying financial, recreational needs of city.
Population and social factors	Establishing population-attraction centers and providing social justice and security	-Recognizing social , economic situation of target population groups -creating identity and social unity for the concept of "citizen". -providing welfare.
Economy and city activity	Strengthening the bases of economic system	Creating a vast range of various jobs and activities
Physical conditions and quality of life	Upgrading quality features of city environment and quality of settlement	-Giving identity to the appearance of city -Maintaining natural landscapes of city. -Completeness of city in any time in spite of gradual completion process of it.
Facilities and urban equipment	Development and fair distribution of facilities and equipment in city	-Development of appropriate infrastructures matching density and spatial distribution of population -designing balanced network of facility distribution -locating facilities in right places with defensive considerations
Region and sphere of influence	Creating a united spatial unit in hierarchical system of city	-Balanced access of citizens to facilities and services all around the region -optimized use of internal lend -improving cross-region functions
Transport and communication network	Developing sustainable transportation	-Regulating communication network -adapting transport system with future special organization of city.

The comparison between the criteria extracted from the findings of the research and the criteria extracted from theoretical framework of the research study

Table 10 shows the key criteria and indices of design of new successful towns in the world extracted from the theoretical framework of the study. The indices extracted from theoretical framework are completely consistent with the indices by analyzing the findings of the study. However, the key criteria need to be made consistent.

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Table 10- The criteria and indices extracted from theoretical framework of the study (source: the authors)

Key criteria	The indices extracted from theoretical framework of the study
Livability, competitiveness, environmental sustainability, Society and identity	The existence of political determination (regional-national) The existence of the project of physical reform of the country (regional-national) Finding the most appropriate location based on economic conditions of each region, The speed of construction Selling land and residential units after the construction and providing services. United urban management Continuous and inclusive assessment. Self-sufficiency and independence. Creating city identity. Offering loans and financial services Recognizing target groups Making population-attraction centers Financial participation of private sector Participation of public The continuity of the process of development Continuous and inclusive assessment

Through a comparative-comparison design, the criteria of new and successful towns in the world can be adapted with the dimensions of sustainable development. Therefore, the criteria obtained by the findings of the study are modified based on the dimension of sustainable development.

Criteria modification in order to choose final criteria and indices

Modified criteria and indices based on the 3 dimensions of sustainable development are summarized in the table 11:

Table 11- Final criteria and indices of design for future Iranian new towns (source: the authors)

Criterion	Sub-criterion	Index
Environmental sustainability	Quality enhancement of environment	-Locating towns based on environmental potential and assessment of consequences of development. -Benefiting from view -access to green spaces and recreational centers.
	Self-modification of development	-population density to land -Providing the requirement of development in every stage.
Livability and identity	The ease of transport and accessibility	- Respect the hierarchy of access -Access to facilities and services.
	Capacity building for the establishment of activities	-The possibility of simultaneous development of all basic activities of city in design. -creating new employment opportunities and creating diversity in activities in the city. -balanced distribution of services in the city
	Possibility of social presence	-Social incorporation -Local independence
Competitiveness	Economic efficiency	-the average distance between the center of activities and residential areas -justifiability of public transportation -Justifiability of creating infrastructures -Cost-effectiveness of the whole project in general

	Spatial efficiency	- Visualization of city as a whole -mixed land uses - Adaptability and flexibility in planning and urban design

Recommendations

The study and investigation of the process of making new towns from location them to designing and administration show that lack of professional points of view and realistic ideas lead to numerous problems the solutions of which lie in the application of a new approaches in designing new towns. This approach should be based on planning and should focus on the main criteria of sustainable development, including environmental sustainability, livability and competitiveness. As a result, environmental, economic and social sustainability can be achieved. Therefore, it is necessary for authorities to refer to research findings prior to making any decisions for building further new towns or developing investment in the existing new towns. They should also provide the conditions for the experts to hold seminars and workshops to offer new services.

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