

AN ANALYSIS OF POPULATION SETTLEMENT TREND IN NEW TOWNS: THE CASE STUDY OF PARDIS NEW TOWN, IRAN

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ABSTRACT

Global experiences of new towns show that they have different goals and objectives, such as decentralization of large cities, providing housing, rearrangement of regional growth centers, creation of new patterns for settlement, new investing as well as job creation. One of the most important planning policies in Iran has been the establishment of new towns that initiated in 1985. The policy addressed a wide range of objectives leading to the development of considerable number of new towns. As an example, based on the new towns policy of 1985, four new towns were established in Tehran metropolitan area to meet the growing population of the city, including, Pardis, Hashtgerd, Andisheh and Parand. This paper has focused on one of the key questions regarding the projected population growth and settlement. While the population of many existing cities located nearby areas increased dramatically, the new towns failed to settle their projected population. This research has used several variables to compare the conditions of Pardis new town and its peripheral urban centers. The methodology of this study is "comparative analysis" in which the population growth trend of Pardis New Town, comparing population settlements of its peripheral area. The results show that Pardis New Town has not been successful as much as other settlements located in its peripheral area. Most of existing and informal new settlements located in its peripheral area have faced dramatic population increase during the development of Pardis new town, such as Boomehen city. Several reasons can be raised for the failure of population settlements, including, extensive bureaucracy in the process of land allocation in new towns, lack of infrastructure and public facilities, lack of coordination between various governmental organizations and lack of a clear policy towards employment issue. The new towns policy was mainly designed in isolation from other policies, such as planning at the regional scale and growth centers strategies, neglecting integrated development plans.

Keywords: New towns, Peripheral urban centers, Settlement, Pardis New Town, Tehran.

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1. INTRODUCTION

Historically, the construction of contemporary new towns in Iran began about 70 years ago when the new company town of Abadan was developed in the south-west of the country based on oil industry requirements. However, the most important policy towards the establishment of new towns was initiated in 1985, leading to the development of considerable number of new towns. The main reason for the initiation of this policy related to the tremendous population growth rate. From 1976 to 1986, the annual growth rate in Iran reached 3.9 per cent, one of the highest rates in the world. New urban areas were likely to be characterized by spreading shanty towns formed largely without basic services (see Azizi, 1995 and 1998). Therefore, the establishment of new towns policy was one of the policies aimed to counter the population growth of larger urban centers. Between 1985 and 2002, 17 new towns were planned, and are currently under construction (NTDC, 1999 and MHUD, 2001). The number of designed and implemented new towns in Iran is very high, compared to many other countries, setting many issues for discussion.

Designing and constructing relatively large number of new towns in a short period of time has led to several complicated problems. The most important question is whether the creation of new towns on such scale is necessary in the country and whether the population extent and lapse of time is necessary" (NTDC, 1990, p 11, Etemad, 1999, p.4, Zanjani, 1990; Ardeshiri, 1999). A main question can be that whether the established new towns have reached their projected population, comparing their peripheral urban centers. The objectives of this study are: 1) providing a clear picture of the population settlement trend, using the case study of Pardis new town comparing unplanned peripheral settlements; 2) examining the reasons of the failure of this new town in terms of population settlement trend. Pardis new town is one the most important new towns in Iran located some 25 kilometers east of the capital, Tehran. The paper contains four main sections. The first section gives a brief literature of new towns experiences in some developed and developing countries. The second section gives an overview of new towns established in Tehran metropolitan area. The third section discusses and analyses the effectiveness of the policy implementation in the case study area. Finally, concluding remarks are presented in the last section.

1.1. An Overview on the New Towns in Tehran Metropolitan Area

Four new towns have been established in Tehran metropolitan area to meet the growing population of the city (for Tehran city profile see Madanipour, 1999). These new towns are Hashtgerd, located some 65 kilometers to the west, Parand, 30 kilometers to the south, Andisheh, 30 kilometers to the south-west and Pardis,

20 kilometers to the east (Figure 1). Their projected population varies from 150000 to 500000 (Table 1).

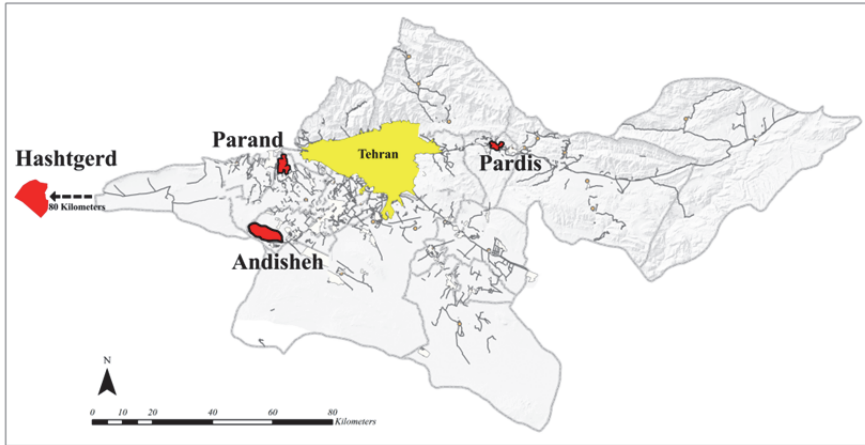


Figure 1. The location of four new towns in Tehran metropolitan area

Table 1. Initial data and information about the new towns in Tehran metropolitan area (Source: NTDC, 1990, p. 9-10.)

	New town	Initial Proposed Area (h)	Distance from the edge of Tehran (k)	Initial Projected Population
1	Hashtgerd	4,000	65	500,000
2	Andisheh	1,000	30	150,000
3	Parand	3,400	30	300,000
4	Pardis	3,000	20	300,000

2. A BRIF LITERATURE REVIEW ON NEW TOWNS

Many new towns experiences can be found in both developed and developing countries. Ebenezer Howard and his advocacy of garden cities in Britain in the early twentieth century are now recognized as the originator of the new towns movement. However, the most recent developments are mainly based on the need to accommodate urban growth. New towns are also established for various other reasons: to implement decentralization policies and relocation of existing population, to provide a capital; and to accommodate specific large projects (see Rodriguez-Bachiller, 1986). Examples of new towns can be found with different approaches and objectives. For example, in Britain, new towns policy played a crucial role in establishing new settlements. It was to channel the pressures for growth of London (Hall, 2002, p. 107-110). Other examples of new towns

experiences can be found in the Western Europe, the Scandinavian region and in the U.S. (see Nottmeyer cited in Lejeune, 1996, p.191; Krier and Kohl cited in Lejeune, 1996, p.185; Hall and Ward, 1998, p.91; Hall, 2002, p. 175, Madanipour, 1996, p. 209-210)

In developing countries, several examples can be found. In Venezuela, for example, large new towns with populations of over 300,000 have been constructed to serve as growth centers and accommodating growth alternatives to Caracas (Turner in Golany, 1978, p.250). In Turkey, it is discussed that new towns are not necessarily successful in preventing the development of informal settlements (Mahmud, and Duyar-Kienast, 2001, p.272 and Dundar, 2001, p.391). For new towns policies in Saudi Arabia see Anis-Ur-Rahman and Tarek Ali Fadak, 1991, pp.172-178. In Malaysia, new towns were often developed as small industrial centers. In African region, several new towns have been developed for the purpose of attracting large-scale industries mainly related to the process of agricultural produce, such as Huambo New Town in Angola (Turner in Golany, 1978, p.250-270). In the Middle East, Egypt's new towns policy is believed to have been a major contributor towards meeting several objectives, such as increase in the demand for high density housing, better sanitary conditions, efficient urban infrastructure, improved housing opportunities, managing overcrowding and spontaneous developments in large cities (Feiler in Shidlo, 1990, p. 128; Feiler in Shidlo, 1990, p. 134 and Acioly Jr cited in Jenks and Burgess, 2000, p.130).

While new towns can respond to the needs of increasing levels of urbanization and urban growth, many problems exist with the strategy (Logue cited in Kehoe, 1976, p.41; Schaffer and Thomas in Golany, 1978, pp. 22-23). Based on the characteristics of new urbanism and smart growth ideas which initiated in the 1990s, Hall (2002, p.206) notes that *"the new urbanists argue for a more sustainable urban form, different from garden cities or new town: a design that is human-scale and walk able, with varied land uses and good public spaces. They stress ordinances to reintroduce traditional kinds of neighborhoods – examples of which can be found in California"*.

Generally, various goals and criteria are used for judging new towns policies, such as high quality model of town planning; economic feasibility & development flexibility; physical functions; compatibility with local history, culture and environment. As discussed in the introductory section above, Iran has experienced considerable new towns developments during the last three decades. This policy presents a challenge to Iranian urban and regional planning and this paper can be a contribution to this subject.

3. METHODOLOGY

There are several specific questions arising out of the Iranian new towns policy objectives and its implementation. As noted before, this paper has focused on one of the key questions regarding the projected population achievement as well as a comparison with their peripheral urban centers. Several factors may affect the success or failure of population settlements in new towns, including geographical location, distance from the main city, employment opportunities, public transportation, as well as land and housing prices in their main cities.

This research has used several variables to compare the conditions of Pardis New Town and other urban centers located in its peripheral area (Figure 2), using the following variables:

1. Comparison of the population of Pardis New Town and its peripheral urban centers,
2. Comparison of the migration rates to Pardis New Town and its peripheral urban centers, 2006-2016,
3. Comparison of the migration rates to Pardis New Town and its peripheral urban centers, 2006-2016,
4. Comparison of the emigration from Pardis New Town to other places,
5. Number of constructed dwellings in Pardis New Town and its peripheral urban centers, 2006-2016,
6. Provision of infrastructure and public facilities.

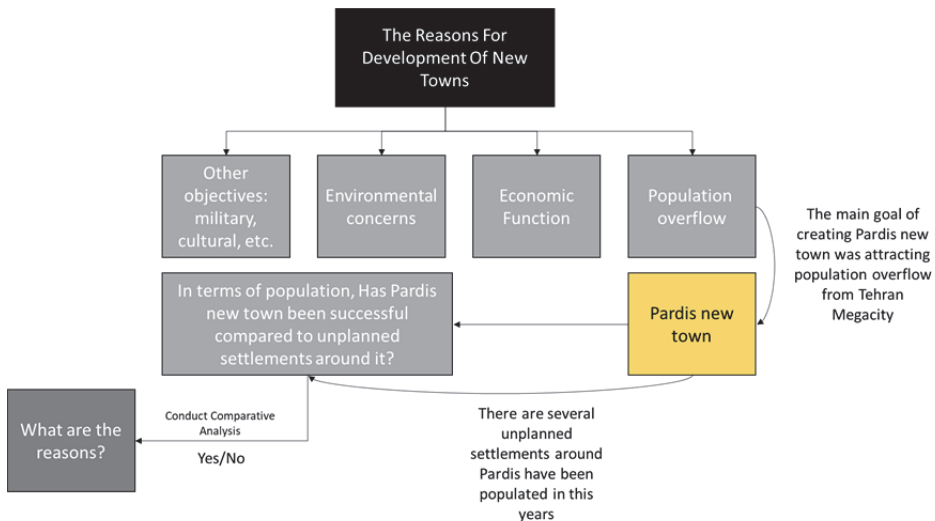


Figure 2. The conceptual framework and process of the study

4. ANALYSIS AND DISCUSSION

As mentioned before, the construction of Pardis New Town began in the late 1980s. The beginning phase of the implementation was under a land development project with some 250 hectares of land, yet its master plan had not been prepared (Table 2). Population settlement in Pardis New Town began in early 1990s. As Figure 4 shows, the population of the town reached from 490 persons in 1986 to 73363 persons in 2016. Based on the new town first master plan approved in 1993, the projected population was 200000 for the year 2016, while the latest national population census of the country in 2016 indicates that its population reached to 73363 residents in 2016, about one third of the projected population (Figure 4).

Table 2. Pardis New Town data after the approval of its master plans (Source: NTDC, 1999).

Approval date	Projected area in 1985	projected area in master plan	projected population in 1985	Projected population in master plan
1995	3000 hectares	2000 hectares	300,000	200,000

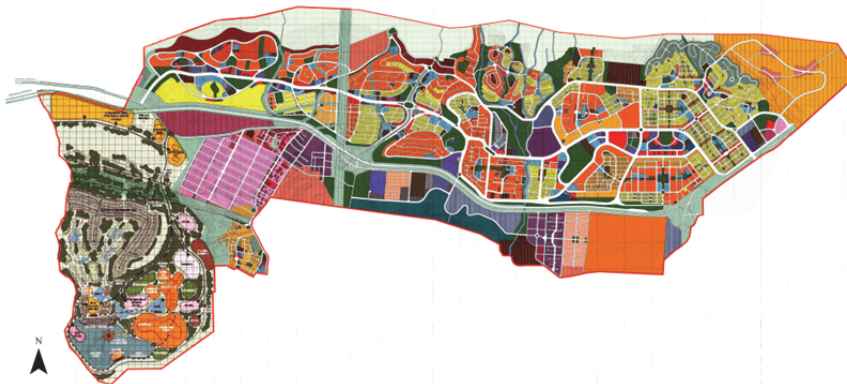


Figure 3. The latest Pardis New Town Master Plan, approved in 2005 (Source: Peikadeh Consultants, 2005)

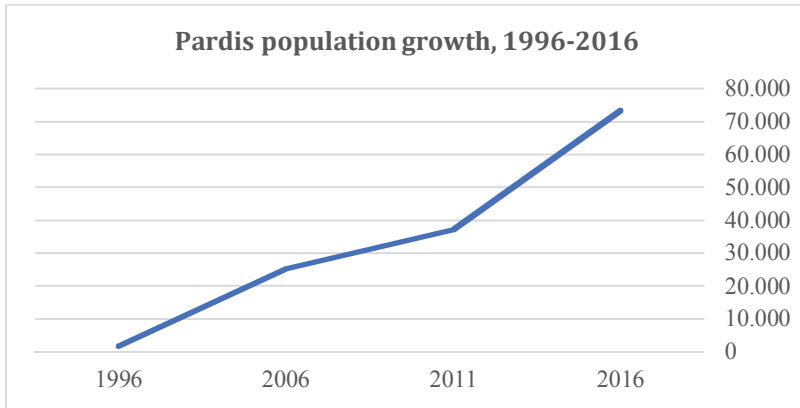


Figure 4. Trend of population growth in Pardis New Town, 1996-2016

4.1. Process of population settlement in Pardis New Town and its peripheral urban centers

Three major urban centers located in Pardis New Town peripheral area, including the cities of Bumehen, Rudehen and Damavand. The city of Bumehen is closest city to this new town, attached and side by side (Figure 5). This city has been one of the most rapidly growing cities in Tehran province in recent decades. The population of this city was only 7142 people in 1986, but it increased to 79034 in 2016. The second city is Rudehen, some five kilometers distance of Pardis. The population of this city was 6674 people in 1986, reached 28533 in 2016. The third city is Damavand, a historical city located some 20 kilometers in the east side of the new town. The population of this city was 15309 people in 1986, reached 48380 in 2016. The population of these two cities with a relatively historical background has been steadily growing over the last few decades. However, as Figures 6 and 7 show, major fluctuation population growth rates are seen for the new town comparing the other three urban centers.

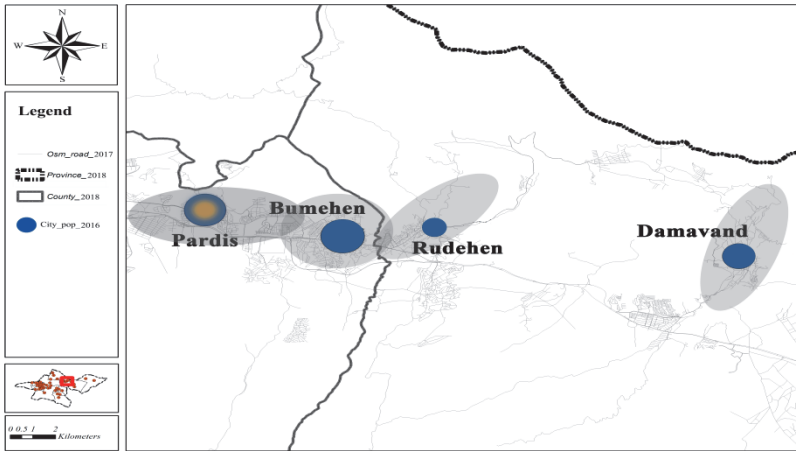


Figure 5. The location of Pardis New Town and its peripheral urban centers

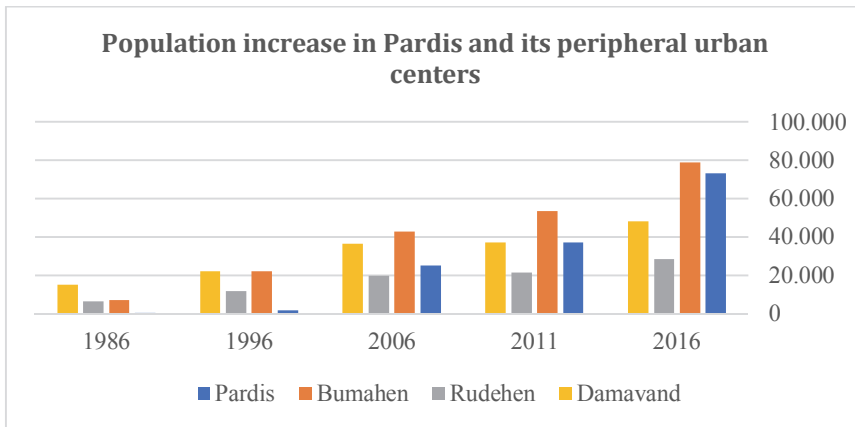


Figure 6. Comparison of the population increase in Pardis New Town and its peripheral urban centers

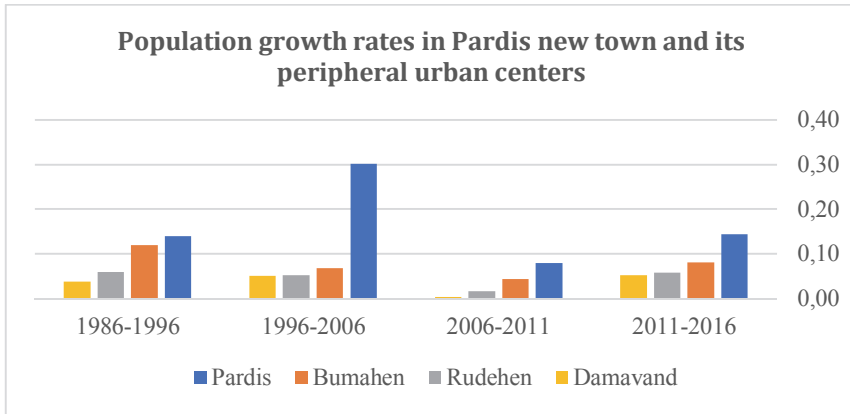


Figure 7. Comparison of the population growth rates in Pardis New Town and its peripheral urban centers, 1986-2016

From migration point of view, the figures of the new town and its peripheral urban centers were compared. Figures 8 and 9 indicate that Pardis new town and the city of Bumehen have again different situations in migration, comparing the other two cities. Pardis and Bumehen have had abnormal situations and remarkable migration rates. While the cities of Rudehen and Damavand have had normal rates. This issue is also seen from emigration point of view (Figures 10 and 11).

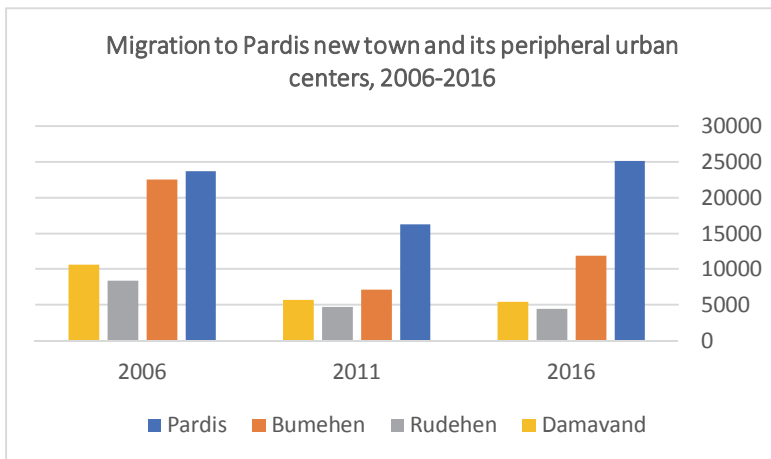


Figure 8. Comparison of the number of migrants to Pardis New Town and its peripheral urban centers, 2006-2016

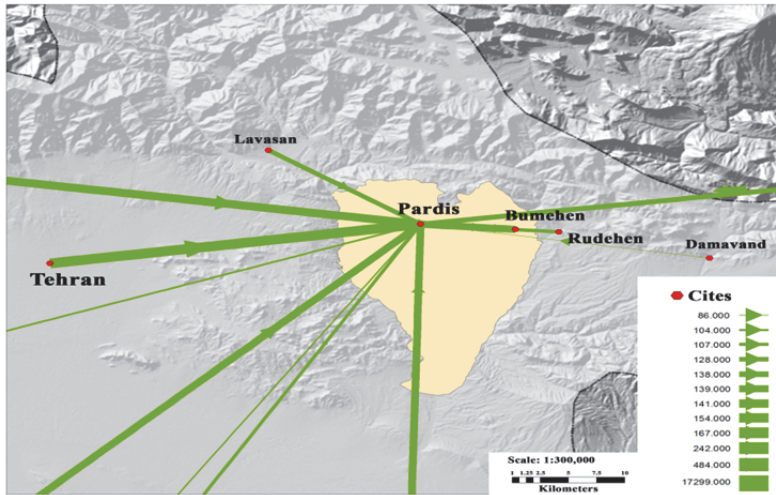


Figure 9. Migration from other places to Pardis New Town, 2011-2016

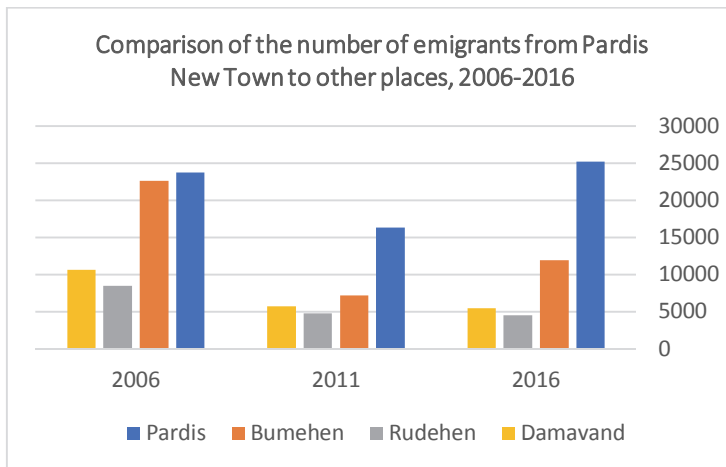


Figure 10. Comparison of the number of emigrants from Pardis New Town to other places, 2006-2016

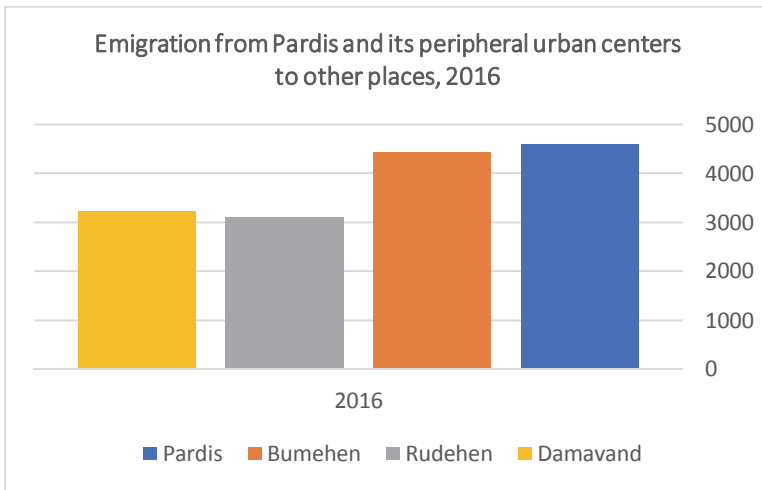


Figure 11. Emigration from Pardis and its peripheral urban centers to other places, 2016

Several factors may affect the success or failure of the projected population settlement in this new town. The first factor relates to land subject. According to the policy, land for all new towns was provided through public land acquisition; using free national lands that have been in the government possession (see Azizi, 1998). However, allocation of cheap land to housing corporations and other developers confronted extensive bureaucracy. Second, the lack of employment opportunities has been another key factor in the failure of population settlement in new towns in. Regarding employment issue, it is notable that Iranian new towns can be divided into two groups. Some new towns initially were established to respond to the accommodation needs of the previously established industrial areas. Therefore, these types of new towns had not a serious problem from employment point of view. For other new towns, a specific zone was prepared as an industrial zone to provide new jobs for the new residents. For Pardis new towns too, a specific zone provided which then named as Pardis Science and Technology Park. Provision of housing and infrastructure issues are discussed below

4.2. Provision of housing in Pardis New Town and its peripheral urban centers

One of the key aspects in the analysis of new towns can be the process of housing construction and residential settlement. Housing construction in Pardis New Town began in early 1990s. The first phase of the new town was developed and the settlement started in the mid-1990s. Figure 13 shows some images of housing construction process and Table 3 shows the number of completed and

under construction dwellings together with the number of residents in 2001. These show the steady growing of housing construction and residency in the new town in the early years. However, these figures changed later. Figure 12 shows almost similar processes for the new town and the city of Bumehen, but different figures for the two other cities. The number of constructed dwellings for the new town as well as the city of Bumehen dramatically increased. Nevertheless, the major challenge here is the difference between population settlement and the amount of housing supplied. The amount of constructed dwelling does not match the number of population and residents. For example, the number of residents in 2016 was 73363 people, while the number of provided housing was 23709. With an average family size indicator (4 persons), it indicates that there was over 5000 inhabited dwellings. Furthermore and importantly, more dwellings are under construction in the new town (Figure 12). It is expected that when undergoing housing dwellings are completed and habited, new towns' population would considerably increase.



Figure 12. Some images of Pardis New Town (Images by author)

Table 3. Number of dwellings (completed and under construction) and number of residents in 2001 (Source: Calculated from NTDC, 2001)

	New town	Number of completed dwellings	Number of residents (persons)	Number of under construction dwellings
3	Pardis	3,740	17,520	16,745

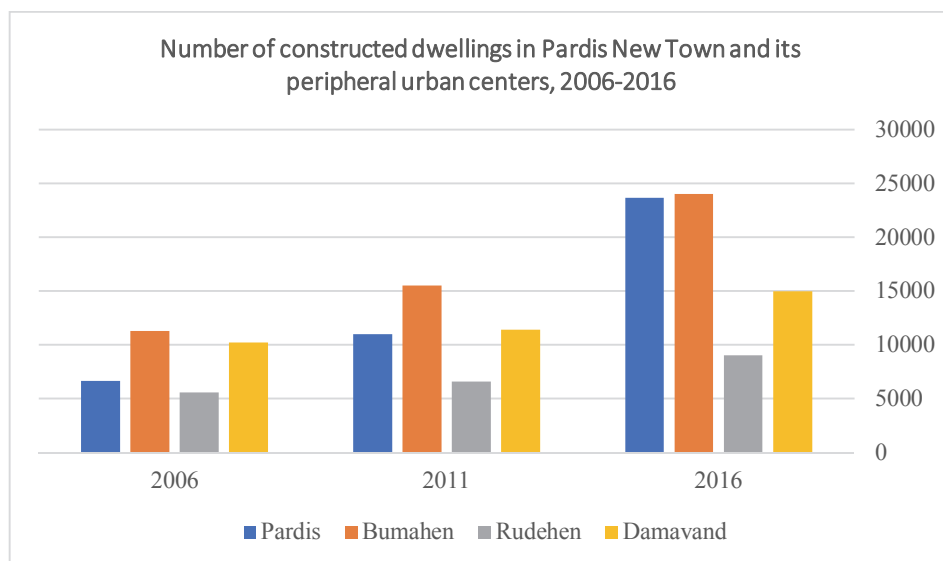


Figure 13. Number of constructed dwellings in Pardis New Town and its peripheral urban centers, 2006-2016

4.3. Provision of Basic Infrastructure and Public Facilities

As it was mentioned before, construction of all new towns was started by a land development project as a first neighborhood. In these neighborhoods, basic infrastructure (such as water, roads networks, electricity and sewage systems) as well as public facilities (such as educational, health, green, cultural and commercial spaces) were supposed to be provided. According to the experiences and available information, basic infrastructures projects have been provided for land development projects, but provision of public facilities confronted serious problems. It is notable that based on the government policies and regulations, a user pays system applied to the provision of these services (see Azizi, 1995 and 2000). Lack of coordination between various governmental organizations for the provision of public facilities was among the main reasons for this problem. Until 2001, lack of a coherent and integrated law for creation of new towns may be

seen as one of the most important problems. According to this law, all ministries, governmental institutions and corporations must cooperate in the development of new towns. Furthermore, lack of efficient public transportation, such as metro lines, can be other factor affected in less population settlement.

5. CONCLUSION

Global experiences of new towns establishment show that they may have different goals and objectives, such as decentralization of large cities, providing housing, especially for low income people and creation of new patterns for settlement. Iranian new towns policy intended to respond to the remarkable population increase of the large cities as well as to meet the requirements of the newly established industrial projects. This research aimed to analyze this policy from mainly spatial planning point of view. It concentrated on the comparison between residential settlement process in new towns and their peripheral urban centers, using the case study of Pardis New Town located in Tehran metropolitan area. Existing data and information show that the trend of population settlement in Pardis New Town has been less than the projected figures. Several factors affected the failure of the new town in population settlement in this town in spite of massive housing supply, such as employment opportunities, lack of public facilities and public transportation.

The new towns policy in Iran was mainly designed in isolation from other policies, such as planning at the region scale and growth centers strategies. In other words, the position and stand of the established new towns has not been defined in the context of urban and regional planning of the country. The policy has neglected integrated development, particularly considering the site selection criteria. Lack of urban life in new towns is seen as the most important weakness in planning and designing of these towns. Availability of suitable jobs and providing infrastructure and public facilities have key role in the success of new towns. The establishment of new towns must be defined in the context of spatial planning at both national and local levels.

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