Original Research Article

Analysis of the Concept of Colonial Urbanization in Iran
Case study: Abadan during Britain Oil Colonialism

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Abstract

Problem statement: The oil discovery and presence of Britain under the banner of Anglo-Persian Oil Company in the processes of oil exploration and extraction in the South of Iran, especially Khuzestan, creates a colonial experience in this region. This issue has created a pattern of colonial urbanization in Iran and brought changes in economic, political, and social aspects, which can be emerged in Abadan as the center for British Petroleum Colonialism activities.

Research objective: The present study is aimed at investigating the effects of colonial attitudes on the urban structures of Abadan as an example of colonial urbanization in Iran's geographical platform.

Research method: This study is qualitative, and attempts to answer the research questions using the interpretive-historical method. The data collection method in this study was bibliographic through which written references like books, articles, and visual sources like historical images, and urbanization maps were examined and analyzed. Also, the authors used their living experience in Abadan on the other hand.

Conclusion: Using urban zoning principles, greenbelt in the frame of city garden principles, ordered urban blocking, and using urban squares as urban joints have been the most important measures of colonial urbanization in Abadan taken to enhance the control and supervision level on different urban sections. Also, this study showed that Abadan colonial city can be interpreted as a panoptic city on one hand, and a dual city in terms of physical, social, economic, and infrastructural aspects on the other hand.

Keywords: *Colonial urbanization, oil, Abadan, Panoptic city, Dual city.*

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Introduction

According to Oxford Dictionary, the term "colonialism" has been derived from the Roman root "Colonia" meaning farm and agricultural land. It refers to Romans, who used to live and make communities in other territories but by preserving their nationality. The term "colonialism" generally means the process of creating a community in new lands, which comes with wide expanded measures such as commerce, residence, plunder, negotiation, war, genocide, mass destruction, slavery, and captivity (Loombia, 2015, 20). This term in political uses is particularly focused on behavioral methods of politically powerful countries, such as European Countries with colonized lands (Gould & Kolb, 1964). In Marxist-Leninist, colonialism is considered as a form of exploitation with emphasis on economic variables. On the other hand, it can be considered as a social-cultural change process in humanistic literature (Horvath, 1972, 46). Colonialism is an example of dominance in a region not by the central government, but also by the foreign forces to utilize God-given wealth and reserves, manpower, and geographical location. More comprehensively, it can be considered as a platform for the formation of cultural relations (King, 1974) with a variety of manifestations in different fields such as economic, political, and social relations causing new man and spatial patterns. Colonial urbanization can be an example of these patterns, which show some meanings and concepts, along with physical aspects such as spatial structure, form, urban forms, and construction patterns. These meanings show the thinking processes of the colonial system as the factor of power and domination (King, 2015).

Problem Statement

Iran is a country, which was never historically under colonialism completely although it should be noted that some regions of Iran have gone through a quasi-colonial period in some periods due to the presence of foreigners. Along with geographical explorations, and the development of shipping in the 16th century, the Persian Gulf as a commercial and strategic waterway gained the attention of European colonialist countries such as Portugal, Netherlands, France, and Britain (Tarafdari, 2008). Hence, they could be present in the southern regions of Iran. In this regard, Britain continued its presence in the South and Southwest of Iran until half of the 20th century (ibid.). During the contemporary age and in the early 20th, the colonial presence of Britain was interconnected to oil exploration in Khuzestan. Hence, Iran oil was under the dominance and control of the Britain Government in the frame of Anglo-Persian Oil Company[1] during 1908-1951 (Oil discovery until the nationalization of Iran's oil industry) (Ehsani, 2003). The period, also called oil colonialism, led to a series of construction and urbanization activities[2] on behalf of the Oil Company. As a result, some pattern of urbanization was emerged, which was significantly different from traditional architecture and urbanization of Iran in terms of construction technique, and designation principles (Rostampour, Mosaferzadeh & Nazif, 2014, 68). Later, it affected other urban regions of Iran as a pattern of renovation and modernity in urbanization (Dourting, 2003).

Colonial urbanization in the geographical platform of Iran is a concept, which has been less considered by Iranian authors although British Oil Urbanization in Khuzestan during the oil colonialism period can be a valuable example reflecting this urbanization pattern in Iran's geographical platform. Studying this issue can result in the recognition of characteristics of this type of urbanization. To this end, the present study attempts to study Abadan from this perspective. Abadan is a city designed and constructed based on the oil-colonial needs of Britain. By that time, Abadan played a vital role compared to other oil regions for the British Government (Karimi & Afshar, 2017). Hence, a wide range of urbanization measures relevant to Britain's oil colonialism was taken in Abadan as a city of Khuzestan. Abadan was identified because of the construction of the oil refinery as the greatest investment of Britain

out of this country (Crinson, 1997). The region was changed from a low-population city to one of the most underlying centers for manpower communities in the country. The needs created by that resulted in the creation of a city, in which all urban life and residence dimensions were designed and implemented in such a way that could meet resident needs in addition to guaranteeing oil colonialism goals of Britain including controlling the citizens in the best way.

Research objective

The main purpose of this study was an analysis of the manner of construction and development of Abadan during Britain oil colonialism as an example of urbanization and colonial urban planning in Iran's geographical platform. Hence, the present study attempts to analyze the urbanization pattern taken in Abadan during the period and to highlight the urbanization characteristics from a colonial perspective. Accordingly, this study attempts to answer the research questions:
• How the colonial characteristics have emerged in the urbanization and urban planning of Abadan?
• What are the features of the colonial city established in Abadan?

Literature review

Colonial urbanization should be considered as an issue gaining the attention of scholars, which has been analyzed from various aspects on various platforms. In this regard, one can refer to the investigations conducted on the urbanization characteristics and colonial urban planning and its social, political, and economic effects in Southeast Asia, India, and African Countries during Britain colonialism (Home, 2013; Beverley, 2011; Bigon, 2012; Metcalf,1984), France colonialism (Nelson, 2007; Graebner, 2007; Vann, 2007; Jennings, 2007; Cooper, 2000; Celik, 1997), and Italy and Germany colonialism period in Africa (Njoh & Bigon, 2015; Fuller, 1988). However, no study has emphasized colonial urbanization in Iran. On the other hand,

Iranian scholars have also neglected the correlation between colonialism and field urbanization. Although Kouchakian, Ayvazian, and Norouzborazjani (2018) have studied the impacts of colonialism on Iran's residential architecture, the research framework in this study was restricted to an architectural scale. Britain's oil urbanization in Khuzestan and Abadan creates another field of relevant studies conducted by Iranian and foreign scholars. Ehsani (2003) has studied Abadan and Masjed Soleiman as the initial examples of industrial and modern oil cities during Britain's oil colonialism and analyzed them from a social engineering perspective. Crinson (1997), the British author, investigated the conditions and factors affecting the designation and construction of Abadan during oil colonialism. Hein and Sedighi (2016) analyzed the effect of oil on the emergence of modern urbanization patterns in Iran and emphasized Khuzestan and Abadan as oil regions. Rostampour, Mosaferzadeh, and Nazif (2014) discussed social identity evolution as a result of modern architecture and urbanization in Khuzestan. Karimi and Afshar (2017) studied the construction styles in Abadan by British people during oil colonialism. They tried to analyze the correlation between colonialism and architecture in Abadan. By reviewing the literature of this study, emphasizing dimensions of colonialism in the urban structure of Britain oil cities in Iran is less emphasized. Hence, the present study is aimed at studying this aspect in Abadan as a case study to meet the gaps in this field. Also, this study has investigated the relevant literature.

Research method

This study is qualitative and tries to answer the questions through a historical-analytical method and based on research purpose. According to research type, the data collection method was mostly bibliographic through which references including books, articles, and visual sources such as historical images and urbanization maps were examined and analyzed. In addition, since the authors of this study had been living in Abdan for many years when the

data was being collected, they were familiar with the research site and could use their knowledge in the analytical process.

Results

• Establishment of Abadan

Before oil discovery in Khuzestan (1908), Abadan was known as a calm island surrounded by groves and rivers[3] (Hasan Nia & Salimi, 2011). The population of this region was mostly formed of Arab tribes with livestock or palm breeding. The population was living on the island and in several villages. There was no congested region in urban form (Ehsani, 2003, 372) (Fig. 1).

With the entrance of oil pipes, and construction of refinery equipment, buildings, and reservoirs, and by building residences near the refinery, Abadan was changed into a place for manpower deployment (Hasan Nia & Salimi, 2011). Hence, the bedrock of the region was established, which is today known as Abadan (Zagagi, 2016). With the development of oil activities, and development of refineries, and the invasion of the Iranian population as job applicants in the 1920s, Abadan was sharply increased in terms of population and highly developed space (Fig. 2). As a result, the need for the organization of urban spaces made the Oil Company take urbanization measures to form Abadan from structural and physical perspectives based on the needs of the company (Zagagi, 2020).

To build Abadan, the Oil Company tried to use modern urban planning and urbanization ideas and principles (Moeni & Badiee, 2020). Using these ideas as the instruments forming the land, the company tried to form residence and establish a favorable community (Sarkhosh, 2018). The ideal image considered by the Oil Company for the newly established city of Abadan was designing and creating an industrial town based on modeling colonial urbanization experiences in the colonized countries based on social engineering (Lahsaeizadeh, 2005). In the first half of the 20th, social engineering was emphasized as an academic-engineering effort to prevent social problems in the future social life through analysis of physical realities, and providing plans, along with physical planning and urbanization (Hajyousefi, 2015), and was mostly used by colonial forces to control societies in the colonized countries (Ehsani, 2003). According to this perspective, the Oil Company employed a British architect called James Mason Wilson[4] in 1930 to provide the comprehensive project of Abadan. The project, as one of the early urban design projects in Iran, included residential neighborhoods for the employees, servants, and laborers of the refinery, and facilities and urban

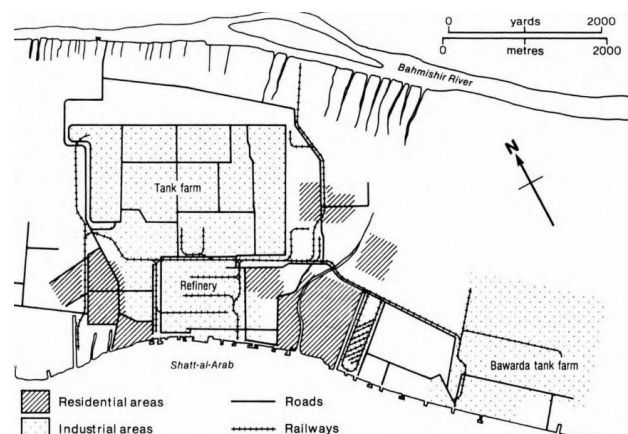Fig. 1. View of Abadan Island before the presence of Oil Company in 1909. Source: Ferrier, 1982.

Fig. 2. Abadan in the 1930s, before Wilson Comprehensive Project. Source: Seccombe & Lawless, 1987.

spaces including hospitals, schools, restaurants, gyms, and sports grounds (Hein & Sedighi, 2016). The project was designed based on modeling designation components and colonial urban planning. Colonial urbanization is a historical form of space production to provide dominance of colonial forces, which was acting as some part of utilization machine of colonialism by an environmental organization. Also, it used to pave the way for transferring the raw materials and resources from the colonized areas toward colonial countries (Hugill, 2017). In other words, colonial urbanization is a measure taken to create political and administrative frameworks guaranteeing economic interests of colonialism, which can change the physical environment just such as other fields in the colonial centers such as culture, community, and economics to cope with colonial utilization (Bigon, 2009). Colonial cities were generally designed in the second half of the 19th and early 20th using modern urbanization ideas and planning such as Ebenezer Howard City garden Concept. In the design of these cities, the designers used to try to build the colonial residential areas just like European neighborhoods from wide streets with rows of trees and large houses surrounded by gardens and separated from the urban areas by green spaces based on the imagination of hierarchical separation in urban spaces (Njoh, 2004).In addition, colonial cities were usually made based on regular and right-cornered plans in terms of structure. Such regular geometric structure was an effort to develop modernization against traditional measures of native societies in addition to facilitating the organization of residences so that the colonial countries could impose ethical and physical orders of colonialism on the target population and landscape. Also, the urban structures were a manifestation of the power of colonialism, which used to be changed in that form of land by implementing regular designs (Bigon, 2009). Colonial urban planning can be defined in common characteristics: 1- promotion and development of colonial goals 2- spatial, and physical modernization, and social systems of human settlements 3- influence of colonial social and cultural values 4- making sure of residential separation of colonial and colonized societies 5- examining the newest techniques and theories of urban planning (Njoh, 2004). The characteristics were manifested in the colonial urbanization and planning in the frame of measures including decentralization of urban structure; creating straight line physical form; designing a network of wide streets; using public squares; sectioning street blocks of the urban network into large and right-cornered plans; using greenbelt, and physical separation of colonial cities and countries (Home, 2013) (Fig. 3).
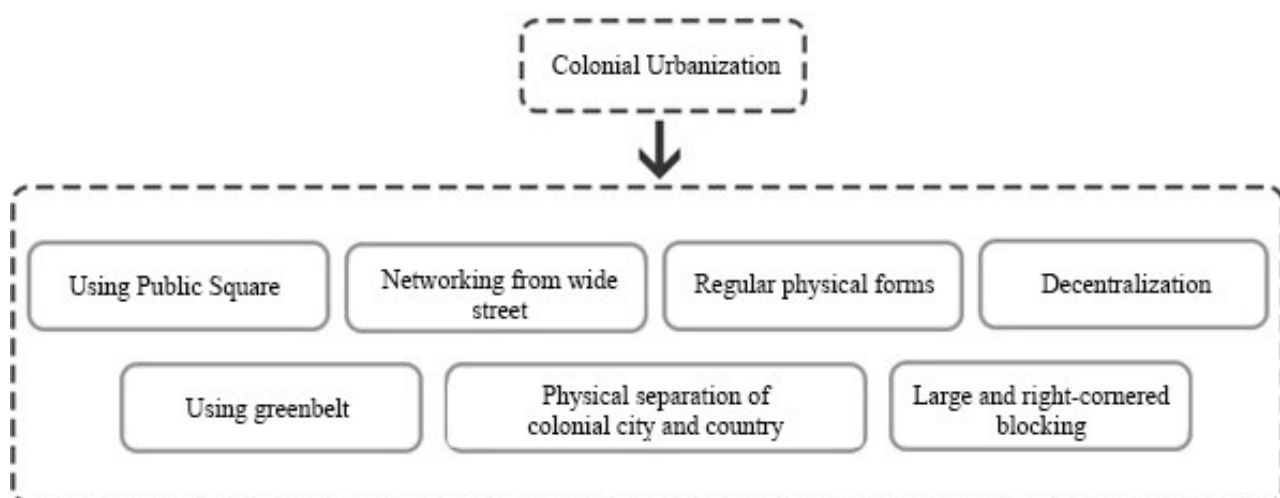

Fig. 3. Diagram of colonial urbanization measures based on characteristics of colonial urban planning projects. Source: authors.

• **Measures caused by colonial urbanization in Abadan**

- Using urban zoning

In the Wilson project for Abadan, the spatial structure of the city was founded by separated zones around the refinery as the center of the city. The zones were separated by wastelands and were located at a distance from each other. Wilson was following the main goal by using a zoning strategy: separation of urban communities based on a hierarchical system formed of rank and race. Just like colonial cities, Wilson emphasized urban structural decentralization. Hence, he recommended three separated main zones in his project: Bereym Zone in the west of the refinery as the residence of managers and senior employees of Britain and Europe (managers' zone); Bowardeh in the east of Abadan for the middle-rank employees of the company (employees' zone), and other zones such as Bahar, Farahabad, Bahmanshir, and Pirooz Zones in the north for low-ranked laborers (laborers' zone) (Crinson, 1997, 351). Wilson recommended independent collective spaces and facilities such as

supermarkets, gyms, sports fields, and other spaces (Anonymous, 1947) (Fig. 4), and tried to design neighborhoods independently. By doing this, he tried to decrease the dependence on neighborhoods as much as possible. An underlying issue was the difference between the quality and conditions of life in these zones. Bereym Zone for the residence of British senior managers of Oil Company and Bowardeh Zone as the residence of middle-ranked employees with European race was designed by houses using Bungalow style with high welfare standards. However, laborer zones were developed with the least facilities and row houses (two-room houses) mostly in the north of the refinery.

- Creating separating greenbelt

One of the big problems for the Oil Company from the early times of establishment and development of refinery in Abadan was the presence of Iranian job applicants known as non-company population. The non-company population was a term, which was meaningful against the company population, and used to refer to the group formed of small businessmen, homeless people, and job seekers. The population
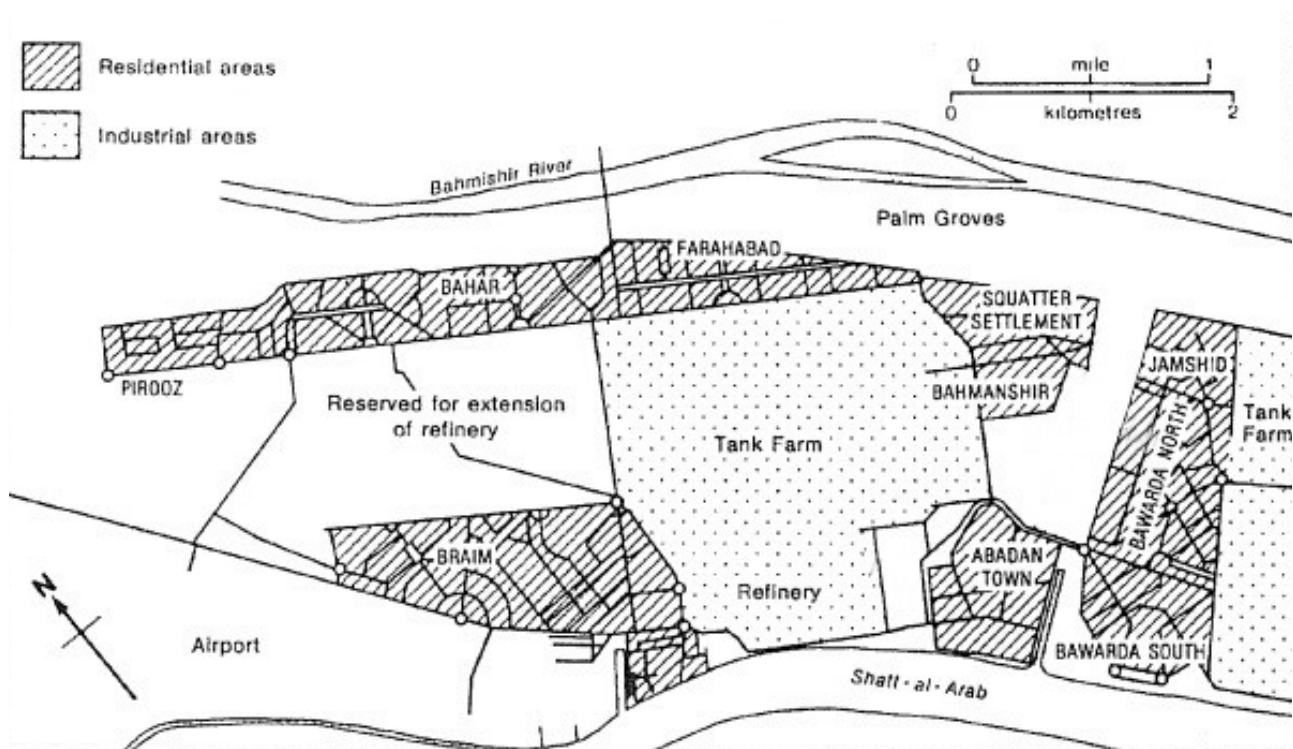

Fig. 4. A schematic of Abadan comprehensive project for company zones provided by Wilson in the 1930s. Source: Seccombe & Lawless, 1987.

was deployed in the adjacency of company towns in self-organized form and used to work on some non-specialized services (Porteous, 1970, 135). In Abadan as a company town, the population was living in the adjacency of southeast of a refinery in a zone formed of huts, Wicker, mud, and brick houses made by them. The Oil Company was trying to separate this part, known as "city" by the residents, from other zones before implementing Abadan's comprehensive project. To this end, the company excavated channels between the "city" and its institutes, so that the access of residents of the "city" was restricted (Lahsaeizadeh, 2005). According to such attitude, Wilson tried to separate newly constructed company zones from other non-company zones using an architectural solution. Hence, he used the greenbelt in front of all company zones based on colonial urbanization principles to control the access of native people. The green belt considered as green edges was a part of urbanization principles relevant to the city garden idea. Wilson tried to use this idea to design company zones, so that he could create a border around the zones, and could also use greenspaces to moderate the hard climatic conditions. He could provide a comfortable and favorable atmosphere for mostly European personnel (Damluji, 2013a, 56).

- Regular design of the urban structure

The urban design of Abadan formed by modernist thinking streams in the architecture and urbanization emerged in the firth half of the 20th as urban regular abstractive patterns. Straight line physical forms, regular zoning of urban blocks to large and right-cornered sections, and network and radial zones were the main characteristics of the Wilson project for Abadan. They were mainly used in combination with classic organization ideas such as symmetry, the proportion of infinite perspectives, hierarchy, and so on (Fig. 5). The urban design model created based on personal preferences of the planner and designer is one of the main characteristics of colonial urbanization used for the symbolic manifestation of the regulatory power of colonialism in colonized countries (Crinson, 1997). Regular urban planning in Abadan was a reflection of the attitude of Oil Company based on authoritative construction of urban space under its dominance and based on the one-way desire of the great economic and investment institution to form urban space and lands, which was created in the frame of Wilson urban plan (Ehsani, 2003). In other words, the Oil Company as the creator of the city used to look at the urban spaces as some part of the domination subset, which could be a manifestation of the glory and power of

Fig. 5. An aerial image of Buardeh zone entrance showing the geometric model of urban planning. Source: Anonymous, 1947.

the company in addition to meeting the needs of workforces of colonial activities. Also, the company used the urban space in international advertisements to gain international credit. Later, the company tried to show attractive effects of the modern city in Abadan to emphasize the role of the Oil Company in the creation of a city in a documentary movie in the late 1940s under the title of "Persian Story" ordered by the Oil Company (Damluji, 2013b).

- Using squares as urban joints

As mentioned before, company zones in the Abadan project were located at a distance from each other, and pedestrian access was impossible. Hence, the neighborhoods were connected by some roads. Wilson highlighted the entrance of neighborhoods in his plan by an urban square, which played a key role in the spatial structure of Abadan. First, the squares used to act as a bottleneck in the communication network between different areas of the city. In other words, the access networks in the neighborhoods were ended to these squares and were connected to other areas through the squares and communicative routes (Institute of Social Studies and Research, 1974). Hence, the squares were considered as the connecting nodes between the neighborhoods and connections between them, which could provide

hierarchical access to the neighborhoods. On the other hand, based on their function, these squares could be used as an instrument for controlling urban interactions and facilitating the traffic in a distance of neighborhoods, because these squares were joints between different urban zones based on the urban organization. Hence, guard posts (in the entrance of Bereym and Bowardeh Zones), and police stations (entrance of laborer zone) were located near the squares to control the traffic in a distance of neighborhoods (ibid.). Also, the squares used to make the urban structure more legible as highlighted urban points and used to help the organization of urban spaces as much as possible (Figs. 6 &7).

Discussion: How the Abadan City was?
• Panoptic City

Deep analysis of the urban structure created in Abadan revealed the bitter reality that the spatial planning implemented in Abadan followed different goals and beyond the needs of urban life. The goal is so important that the designers and planners of the city have even neglected environmental issues and economic profits to achieve that. For example, in the comprehensive urban planning for Abadan, the regions in the east of the refinery, such as Bowardeh

Fig. 6. Aerial image of Buardeh Zone and one of the urban squares. Source: Anonymous, 1947.
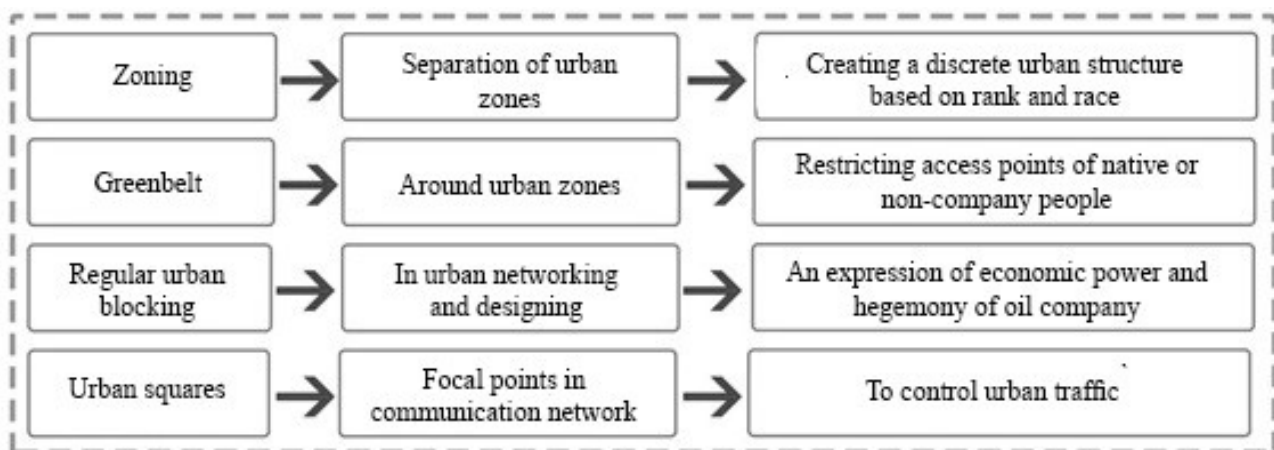
Fig. 7. Urbanization measures are taken in Abadan based on colonial urbanization pattern. Source: authors.

and Bahmanshir, were most of the time exposed to smoke, and toxic steams caused by refinery activities at the time of wind blowing from the west of Abadan. This could made abundant problems for the residents. On the other hand, distribution of these zones was done regardless of relevant issues of executive costs of equipment and urban infrastructures, because the distance of these zones from each other was not cost-effective. However, centralized organization and continuous urban development could be good options to make low costs for the Oil Company (ibid.). The project was regarded as an ideal project from the perspective of the Oil Company because it could facilitate the separation of British-European managers and personnel from Iranian and non-European laborers, and the non-company population based on a racial hierarchy. The social separation idea caused by a sense of racial superiority used to consider British and European people in higher social level with the right to live in separated zones (Nadim & Habibinejad, 2017). The idea believed that their living space should be defined with higher standards in terms of design and dimensions of houses, and the type of recreational spaces. Also, they believed that this group had the right to live in separated zones. Hence, the idea tried to decrease the access of other population groups. Therefore, it seems that the organization pattern of Abadan is created by colonial ideas based on spatial and social separation, and controlling communications, and

preventing interactions, and not as a response to urbanization requirements (Dourting, 2003, 202). Maybe the best interpretation for this city can be Panoptic City. The panoptic city is a concept that originated in Michel Foucault's ideas, the French Philosopher, in terms of the concept of power and the ways of applying that on the society to control and monitor social behaviors. The concept was created concerning his theory on panopticon architecture. Panopticon as an architectural pattern to organize the spatial structure of prisons was used by Foucault as a model to analyze the institutionalized relations on behalf of power in the social structure of modern societies (Dovey, 2002). Foucault believed that the ruling power of a society always tries to produce regular social structures, and enhance control over the society. The panoptic city was also created by the development of the panopticon concept concerning public spaces, urban centers, and even urban structure through creating urbanizations patterns using tools such as designing, planning, and policy-making to create urban structures and controlled space to control the society and protect social order to guarantee power (Tiesdell & Oc, 1998). The panoptic city is derived from the measures beyond urbanization issues caused by controlling attitudes, and social separation for purpose of decentralization and management of interactions of citizens (Fig. 8). The colonial urbanization measures in Abadan (such as urban zoning, discretion in urban structure

through making distance among different urban zones, building green belt around zones to restrict the access among zones, and definition of urban squares as controlling points of urban spaces) were used to separate and control the interactions of residents of Abadan, who were heterogeneous in terms of race and social level. The colonial urbanization measures tried to regulate urban relations and activities based on Oil Company activities. The main goal of these measures was preferring the class of managers and high-level employees of the Oil Company, and providing their needs and required facilities as the ruling power in the geographical platform of another country to provide requirements of urban life for them.

• **Dual City**

Because of abundant job opportunities created by Oil Industry activities after the establishment of the refinery, Abadan changed into an attractive destination for many Iranian people for job migration. As a result, Abadan changed into one of the crowded cities of Iran in a short time (Ehsani, 2003). Since the time of the establishment of the refinery and the early residential centers near the oil company spaces, another form of urban space emerged in Abadan, which was known as "city" as mentioned before this. As the immigrants had no access to the formal residential space same as the space created by the oil company for the company manpower, they had to live in the "city". To this end, the slums were made of available and low-quality materials (Fig. 9). The Oil Company was also trying to control and manage the population, and it could achieve this goal in different periods using a variety of strategies.

With the growth of the job seekers' population and lack of residential space, the non-company population moved to the area out of the "city" to make shelters and occupied some part of the lands considered as wastelands in urban planning to separate company zones. As a result, these people created new urban areas. Hence, after the construction of company regions, new slums such

as Ahmadabad, Halabiabad, Karun, and Abulhasan were immediately created by the immigrants and newcomers near the company neighborhoods (ibid., 392) (Fig. 10). As a result, they become independent from the Oil Company because of population and spatial development and because the Oil Company was unable to control such an increasing population.

With the development of informal neighborhoods near the company zones, Abadan was divided into two different parts. The two areas were gradually divided into two opposite cities in the adjacency of each other. One of them was formal or company town for the Oil Company with favorable houses, high-
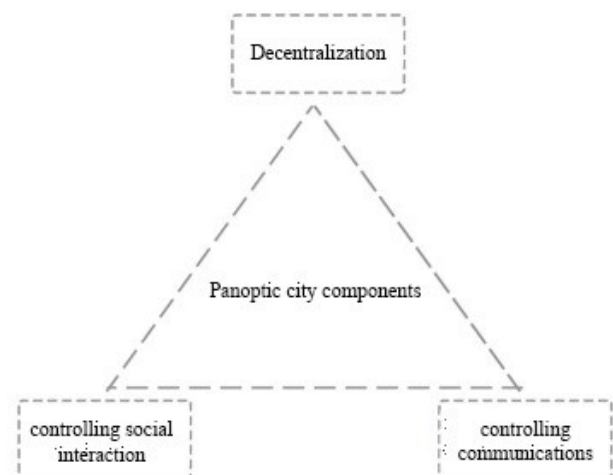

Fig. 8. Characteristics of the panoptic city created in Abadan as a result of colonial urbanization. Source: authors.

Fig. 9. Non-company residents of Abadan living in informal settlements. Source, Bamberg, 1994.
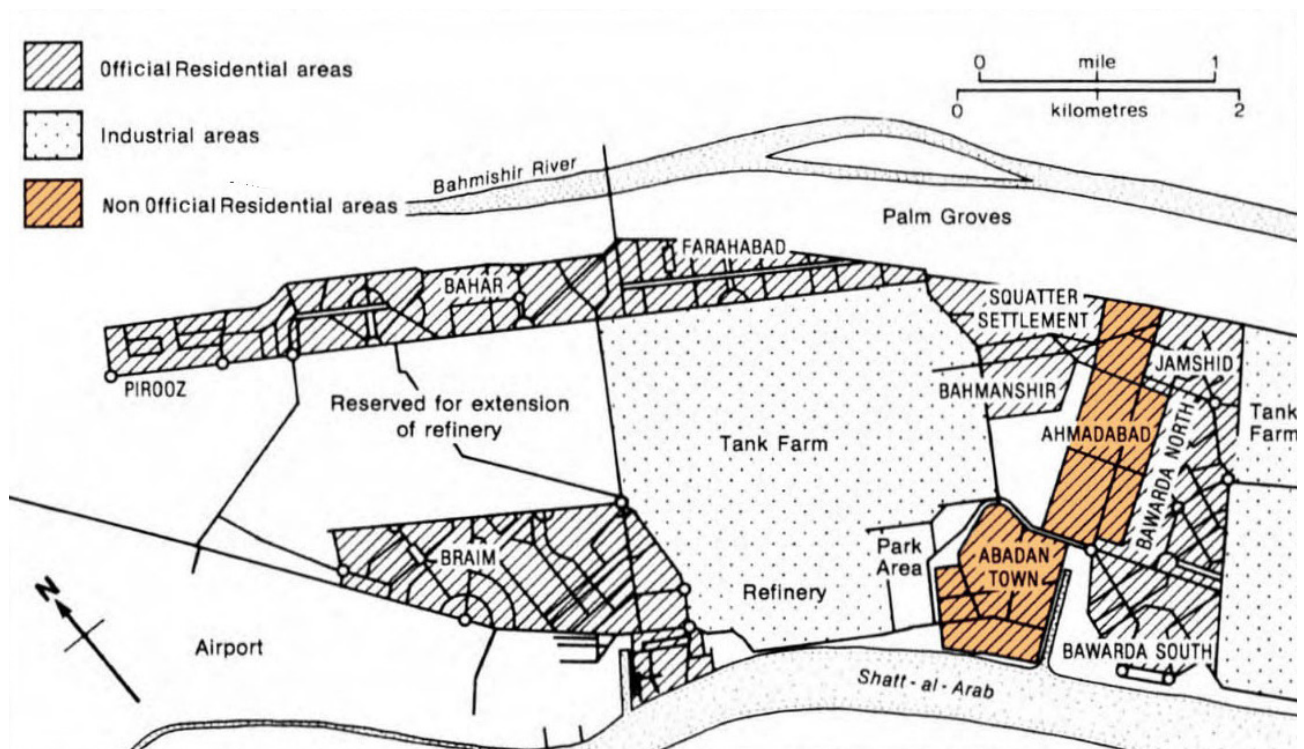
Fig. 10. Company and non-company residential places of Abadan in 1960. Source: Sercombe & Lawless, 1987.

level hygiene, and welfare conditions, and modern living infrastructures. The other one was informal or non-company town, in which the residents were suffering from poverty and bad hygiene conditions, and the Oil Company was not responsible for that" (Zagagi, 2020, 3) (Fig. 11).

The contrasting characteristics in the urban area changed Abadan into a dual city. The dual city is a concept referring to deep social contrast in the structure of a city. In such a place, residents are in two different classes in terms of economic, racial, ethnic, and political aspects, and they live in different neighborhoods. Also, they create different social, spatial, and physical systems; although there is no middle population in the urban structure to connect the two classes. Hence, instead of a unit city, two cities were formed, which were different from each other. One city was the town of disappointment and poverty, and another one was the city of hope and glory, which are only a few blocks or streets apart (Van Kempen, 1994). A dual city is created

in Abadan because of the presence of two different population groups (company and non-company) because of the economic-colonial presence of the Oil Company. As a result, two contrasting urban patterns were created due to physical, spatial, social, economic, and infrastructural conditions.

- Physical contrast

The company town was created in Abadan based on modern urbanization principles and as a result of colonial ideas such as zoning, street construction, regular blocking, building squares, creating green space, and using new architectural techniques, and materials. This could create a modern urban fabric with regular structure; although the non-company town was developed with no plan and using local architecture and materials such as clay, brick, straw, and date leaves with irregular and organic fabric by the residents. The contrast is evident in the aerial image of Abadan after implementing the comprehensive project in the 1940s and is a physical manifestation of the duality of Abadan (Fig. 12).

Fig. 11. A schematic of a street in Ahmadabad in non-company town 1943. Source: Bamberg, 1994.

Fig. 12. An Aerial image of physical contrast of company towns (Buardeh low in the picture) and non-company town in 1930. Source: www.abadantimes.com.

- Spatial-social contrast

The duality created in Abadan caused social contrast in addition to physical contrast. In a company town, social spaces were defined in luxury places such as streets, stores, gyms, cinemas, coffee shops, and nightclubs, which were specified to Oil Company personnel and their families, and non-company

people were not permitted to go there. The urban life process was organized and regular in these spaces; although the non-company town included alleys, Bazar, coffee houses, and small shops as social spaces. All people from any social class and race could go in these areas, and these spaces had no special regulations, and they were not under the supervision of the Oil Company. Hence, the place was always full of people, and irregularity and chaos were common in these places in addition to the dynamicity of urban life (Ehsani, 2003). The contrast caused by the company and non-company social spaces and the relations created in them created two imbalanced social patterns for Abadan. Some parts of the city under the control of the Oil Company created a company society with a luxury living place, social space, welfare facilities, and lifestyle. On the contrary, the other part of the city created a non-company society made by a traditional community and low level of life (Rostampour et al., 2014).

- Economic contrast

The economic cycle in the company town was defined based on activities dependent on Oil Industry. The economic processes in this part of the city were derived from a series of units relevant to oil product manufacturing, which used to be exported. The economic cycle was gradually developed by the supports of the Oil Company and caused the development of the city in the company zone based on a one-dimensional economic system. In this zone, the refinery, petrochemistry, selling offices, reservoirs, terminals, and selling wharves were changed into the major points of the economic process.

However, the development of company town, along with the advancement of relevant departments of oil industries, need to service and support activities was created in a wide range. Such a need was addressed generally by the mediation of non-company towns, which can result in the emergence of an economy based on service activities in the non-company town. On the other hand, an increase in population and development in the non-

company town, manufacturing activities based on agriculture, livestock, and hunting made an important part of economic activities. Also, by the mediation of the location of Abadan in the north of the Persian Gulf and the neighborhood of Iraq and Kuwait, commerce-based economic activities were developed in the non-company town. All of these factors result in multidimensional structure in non-company towns contrary to the company town. The structure was developed along with the development of the non-company town and was exited from the limit of control of the Oil Company, and placed against the industrial economy in the company zone. The relevant spaces of the multidimensional economy in the non-company include service centers such as markets, repair workshops, groves, fishing, and commercial wharves, which were different from the spaces caused by the one-dimensional economy and oil industry (Lahsaeizadeh, 2005).

- **Infrastructural contrast**

The duality in the urban structure also appeared in the relevant infrastructures of living in two parts of company and non-company zones. In terms of health and medical infrastructures, the Oil Company tried to meet its needs in this department through the establishment of health centers from the early time of beginning its activities. To this end, the Oil Company office established clinics and hospitals in a company town. The promise of the Oil Company to provide a health organization was fixed; although the company did not commit to the health status of a non-company town. The company avoided creating health infrastructures in this zone, which caused a considerable dispute in terms of health status between the two zones. Based on such a dual attitude towards urban spaces, the non-company zone lacked any kind of urban sewage and piped freshwater in houses. The company zone had efficient and advanced sewage and a freshwater system by that time although the system was completely separated from the non-company zone. However, the only infrastructure provided by the Oil Company in this field was embedding freshwater pipes only at the

head of every alley in a non-company town, which was called compressive pipes or Bambo in the native dialect. The pipes could transfer freshwater to these points. The company provided no other infrastructure for living. On the other hand, the green spaces used to play a key role in company town; although the non-company zone was deprived of green spaces because of the negligence of the quality of urban spaces by the Oil Company. Such contrast in greenspaces caused the emergence of some part of the city in the quasi-garden platform, and the other part emerged in a platform with no greenspace (ibid.).

Conclusion

The present study was an effort to analyze the concept of colonial urbanization in the geographical platform of Iran through the construction activities of the Oil Company in Abadan in the southwest of Iran. Oil discovery in Khuzestan and colonial activities of the Oil Company in this region resulted in the emergence of new patterns in the field of architecture, urbanization, and spatial planning. The most highlighted plans were implemented in Abadan. Because of the establishment of oil refineries and the invasion of job seekers, the company needed a model to make urban plans to organize the population. To this end, the Oil Company tried to create a desired urban structure using the colonial urbanization experiences and based on its components. The urbanization measures such as using urban zoning, green belt, regular blocking, and using urban squares were the fundamental characteristics of oil company urbanization in Abadan.

The measures were taken using the colonial attitudes in urbanization mainly with controlling goals, and social-spatial organization. These measures changed the city of Abadan into a panoptic city, in which all dimensions of urban life were managed by the Oil Company, and the interests and position of high-ranked managers and personnel of the economic firm were preserved. However, Abadan can't be considered just as a panoptic city, but it should be

also interpreted from another perspective. As it was mentioned, the Oil Company faced a non-company population from the beginning of the refinery establishment. The population was living only in a small region near the refinery at the first in informal settlements. Some part of the urbanization measures in Abadan urban planning was taken to isolate the population, and restricting their access to company zones. Because of the increasing migration of Iranian people to Abadan, the non-company population was increased, and their need to the house was felt more than before.

As a result, the early neighborhoods for them (non-company population) could not meet their needs for housing. Hence, these people settled in the separated lands of company and non-company zones. Thus, the company and non-company zones were connected, and Abadan changed into a dual city with different physical aspect, social space, economic, and infrastructural characteristics. A company town was organized in regular form in some parts of the

city, and a non-company zone was self-organized irregularly on the other side. The non-company zone lacked any kind of control and fundamental infrastructure. Such a duality led to the creation of two company and non-company identities against each other (Fig. 13).

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Conflict of interests

• There was no conflict of interest for the authors in this study.

Endnote

1. The company was established firstly under the Latin name of "Anglo-Persian Oil Company" (APOC). Later, the name was changed into Anglo-Iranian Oil Company (AIOC) in 1933 through a new contract concluded between Iran and Britain.
2. The activities led to the establishment of towns such as Masjed Suleiman, Haftgol, Naft Sefid Lali, Aghajari, and Omidieh. These towns were created in form of quasi-garden complexes and with simple
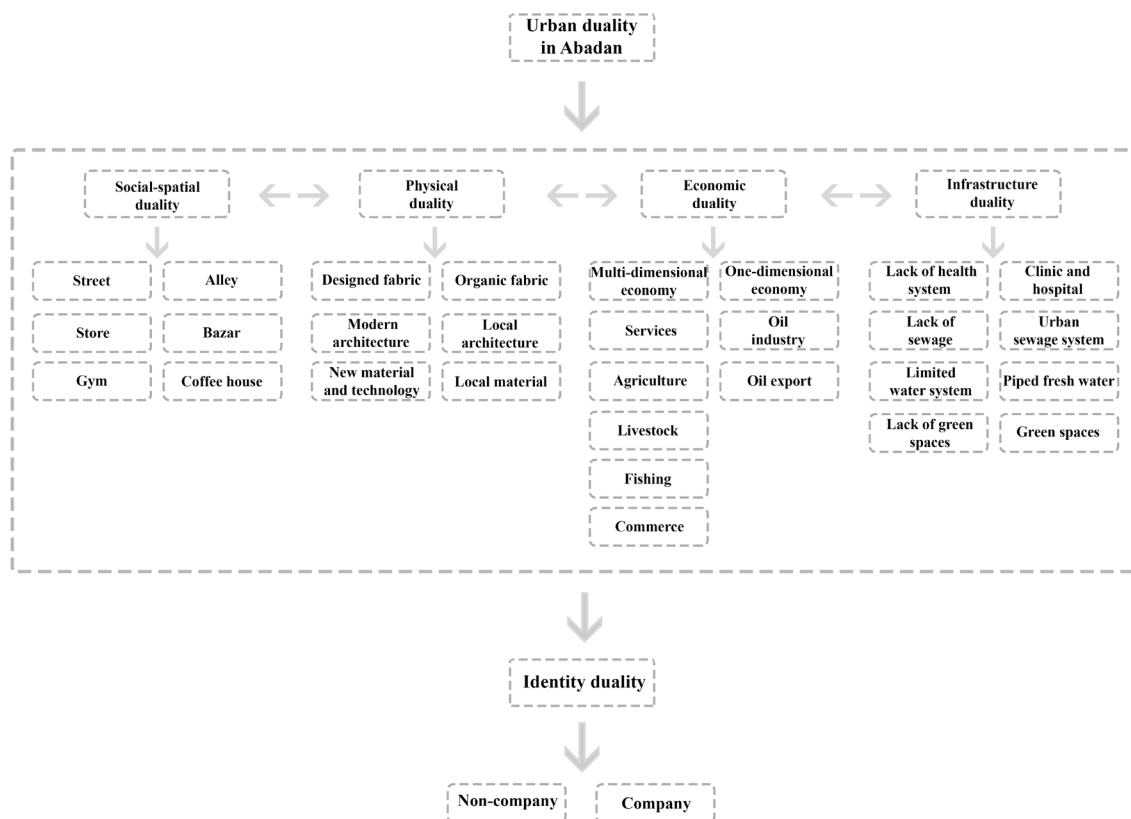

Fig. 13. The diagram of urban duality in Abadan in terms of physical, spatial, social, economic, and infrastructural components. Source: authors.

buildings in Bungalow style. Bangalow has Indian roots. The Bengali language has influenced the English language. The bungalow is a special Anglo-Indian construction style with colonial origins. This style was created during the colonial presence of Britain in Indian and entered Britain as a cultural pattern in non-urban regions. Since the late 19th, it was considered as a pattern for the residence of British forces in the colonized regions providing raw materials for the industrial economy of Britain.

3. Bahmanshir River in the north and Arvandrud River in the south

4. James mason Wilson: during 1913-1916, Wilson was working as an assistant on the planning project of New Delhi, the colonial capital of Britain. The project was leading by Sir Edwin Lutyens, the British urban planner. Lutyens was known as a colonial urban planner because of implementing multiple urbanization projects in Britain colonialism. The cooperation could leave a deep effect on Wilson's approaches to Abadan urban planning.

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