

CASE STUDY

## Evaluation of affecting mechanisms of urban development and its sphere of influence

F. Mohammadian<sup>1</sup>, P. Ziviar Pardehei<sup>2,\*</sup>, A. Estelaji<sup>2</sup>

<sup>1</sup> Department of Geography, Faculty of Marine Science and Technology, Islamic Azad University, Tehran North Branch, Tehran, Iran

<sup>2</sup> Department of Geography, Faculty of Geography and Urban Planning, Islamic Azad University, Yadegar- e-Imam Khomeini Branch, Shahre-Rey, Iran

### ARTICLE INFO

#### Article History:

Received 11 April 2021

Revised 28 June 2021

Accepted 10 August 2021

#### Keywords:

Boroujerd city  
population growth  
sphere of influence  
unequal growth  
urban development

### ABSTRACT

**BACKGROUND AND OBJECTIVES:** Today, many factors and forces influence urban development and its organization. The uncontrolled development of cities and their uneven growth is due to various political, physical, economic, social and cultural processes. The purpose of this study is to evaluate and analyze the mechanisms affecting the urban development of Boroujerd city and its sphere of influence

**METHODS:** The research method is structural-analytical-descriptive, which is the main purpose of applied research by collecting data, analytical, quantitative, and documentary methods that have been used to explain the conceptual framework of research in the form of indicators. Delphi method was also used with emphasis on fuzzy logic.

**FINDINGS:** The results of regression analysis showed that the correlation coefficient of the variable of land exchange on Boroujerd urban development was equal to 0.740 and also the level of activity of this city in the two economic sectors of industry and services is of basic type and showed a higher value than other urban areas of the province and also unemployment index shows that city has less unemployment (19.3%) than other cities in the province and the average rate of the province (23.9%).

On the other hand, the impact of factors and indicators of natural population growth in Boroujerd in the field of urban development was 1.97, which was a small part of urban population growth and development.

**CONCLUSION:** Economic and social indicators have an undeniable role in the formation and development of the city and its sphere of influence and should be considered by city officials and stakeholders. So based on the development of policies such as Planning to organize the privacy and preventing the settlement of immigrants, prevent the land mechanism and also new development patterns can solve the future

DOI: [10.22034/IJHCUM.2022.02.06](https://doi.org/10.22034/IJHCUM.2022.02.06) matters of the city.



NUMBER OF REFERENCES

30



NUMBER OF FIGURES

5



NUMBER OF TABLES

7

\*Corresponding Author:

Email: [Ziviar@yahoo.com](mailto:Ziviar@yahoo.com)

Phone: +989122122236

ORCID: [0000-0003-3934-0638](https://orcid.org/0000-0003-3934-0638)

Note: Discussion period for this manuscript open until July 1, 2022 on IJHCUM website at the "Show Article."

## INTRODUCTION

Urbanization and the rapid expansion of cities have caused many problems in most countries of the world, so that not only urban planning policies but also socio-economic and environmental issues in many urban areas have been affected by this phenomenon. In the meantime, although population growth is the primary cause of rapid urbanization, but its unreasonable dispersion has adverse effects on the natural and cultural environment of communities (Ghorbani et al., 2012; Neisiani et al., 2016). With the social changes of the system and the physical organization of cities, it undergoes fundamental changes (Rajabi and Moradi Mokkram, 2019). One of the levers of controlling and managing urban development is well-thought-out and appropriate planning to control the physical development of the city in its unplanned form. (Ghanbari et al., 2016). Such spatial development for the city, which is itself due to irregular migration and increasing urban population, has caused many anomalies and urban disorders in the country since the mid-1960s, driven by the land reform law, and as a result, the balance between humans and disrupted environmental resources in cities due to the limited scale of facilities and land. The result of such uncontrolled expansion is the growth of cities, the creation of tin settlements and urban suburbs with unhealthy health conditions, and unfavorable living conditions near most major cities in the country (Bahraini, 2010). Such major challenges today are the approach of organizing and empowering them in line with planned goals. The issue of growth and development planning and proper location for the inevitable expansion of cities has become a necessity due to today's complex developments in these centers of human aggregation. (Batty, 2013). Today, in discussing the formation of cities, their sphere of urban influence and the physical development of the city in the next stages, most planners and researchers along with human factors determine natural, climatic and geographical factors such as geology, ecology and environment (Bahraini, 2010). Environmental and climatic elements, along with other environmental factors, are the most important factors in the formation and development of cities and the continuation of urban life. (Atayi and Fanayi, 2015). in Atayi and Fanayi's research,(2015) it is believed that the natural features of the region provide many opportunities for the physical

development of the city and concluded that the most important natural factors affecting the development of cities are topography, land slope, climate, geology, hydrology and geomorphology. Beterlas et al. (2011) in a study of some Greek cities found that economic and social factors have had a significant impact on the rate of development and these factors have determined the growth direction of cities. Amoateng et al. (2013) believe that the physical development of cities and the development of the surrounding areas is influenced by human activities and land uses in cities and landscapes. Peiser , (2001) in research on the role of communication considers that transportation to be effective in urban development and this matter and believes that in areas where communication is easy, more urban centers are formed and developed. Pareta and Prasad, (2012) believe that local landforms have historically played a key role in the location of settlements and their future development is influenced by regional geomorphology. Thus, urban development is influenced by natural, environmental, economic, social, and political processes that have gone through various stages throughout history, and the sphere of influence of cities develops over time. Due to the demands of time, these factors may act at different levels of local, regional, national with more power and influence than other factors and special mechanisms. Urban areas, depending on their size and function, will have a wide gravitational pull and will inevitably form relationships with their surroundings (Inostroza et al., (2013). Cities develop by absorbing the overflow population of the surrounding areas (Kheyroddin, and Ghaderi, 2020) and are under pressure due to population density, and in some cases, they also transfer pressures to the suburbs and surrounding areas. More importantly, to survive, they establish product, service, administrative, social, and the like relations. The importance of the sphere of influence on cities is very decisive in some cases (Krätke, 2014), and sometimes the subject also determines the role of the city and gives it shape and consistency (van der Voordt and van Wegen, 2007; Momeni and Hattami, 2011). Therefore, considering the importance of the issue, this article examines the effective mechanisms in the formation and development of Boroujerd city.

. Based on this, the structural model of the research is demonstrated in Fig. 1:

Urban development as a spatial concept can be

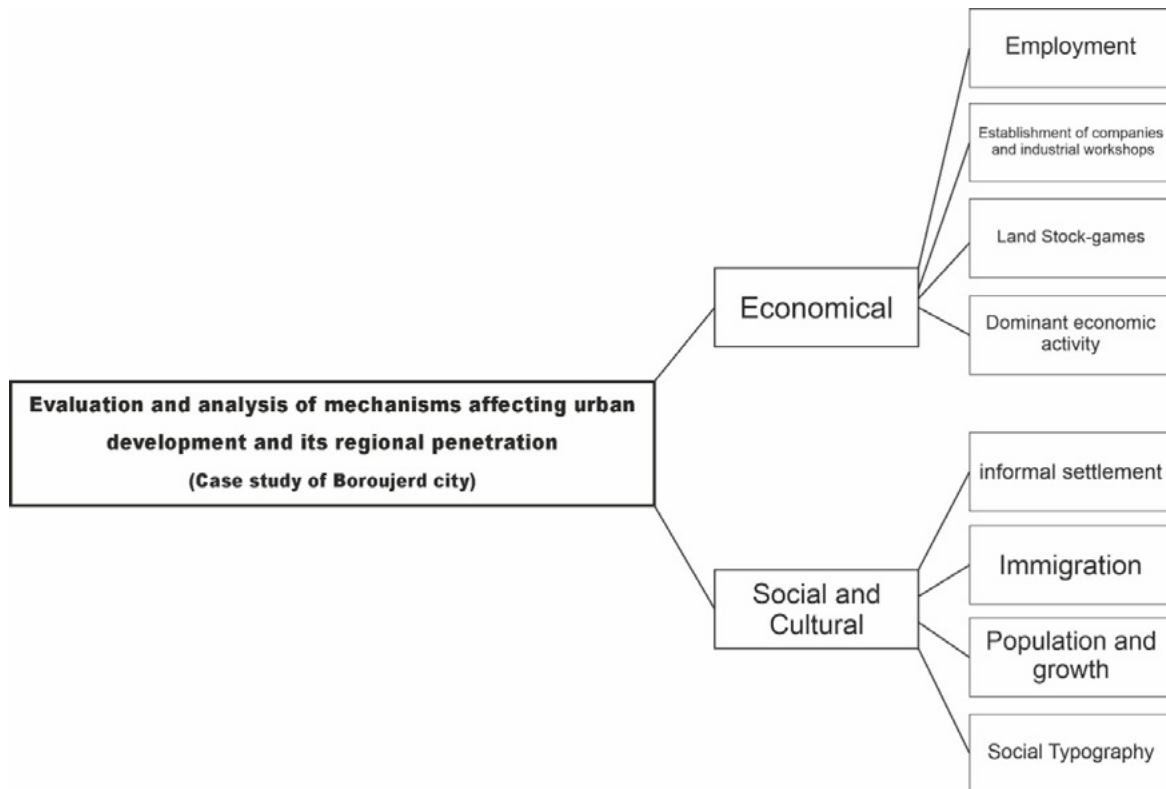


Fig. 1: Research conceptual framework

defined as changes in land use and density levels to meet the needs of city dwellers in housing, transportation, leisure, and food, etc. Urban development has a potential social, economic and physical mobilization to improve the quality of the urban environment to establish a balance in the quantity and quality of urban life (Lynch, 1960). Understanding the urban development process plays a crucial role in urban development planning and sustainable urban management (Cheng and Masser, 2004). The history of urban planning and the process of urbanization also show that the expansion of the city in physical dimensions and other cases related to urban development due to scientific necessities have led to the emergence of methods and initiatives mainly based on trial and error, which result in a kind of ambiguity. There has been a theoretical and practical contradiction in decision-making for cities (Bemanian and Mahmoodinezhad, 2000). In urban development and progressive development projects in recent decades, cities and settlements

are often disregarded for the importance of land use in different directions and on valuable lands such as rich plains, foothills, seashores, suburbs, Rivers, have expanded (Bemanian and Mahmudinejad, 2000). Natural factors are among the influential factors in geographical studies. These factors are not of equal importance and value because they are dispersed unevenly on the surface of the earth and find different characteristics with other factors and elements everywhere. The environmental factor is the physical environment of nature, the main and constructive element of urban space, and is the first bed in which the artificial environment is formed (Jafari Mehrabadi et al., 2017). Therefore, the natural structure of the urban environment is one of the external factors that play a key role in the development and expansion of cities. On the other hand, the main basis of urban planning and urban design studies is the basic economic study of the city, based on which employment, population, income, and finally the need for space are determined (Shie,

2001). In this way, the fate of each city is determined by the amount and manner of its production activities and income generation (Jaeger *et al*, 2010). One of the economic factors that create and play a role in the city is the type of economic activity that governs the city (Scott, 2006). This activity is due to the favorable facilities of the surrounding rural areas and in this regard, the factor of communication and transportation has an important role, because it accelerates the transfer of primary resources and goods needed by urban centers and other agricultural products. In this urban society of hypermobility and interconnection, a static conception of space needs to be questioned or at least put into perspective insofar as individuals organize their daily lives around a multiplicity of places (Peiser, 2001). In urban studies, in addition to examining the characteristics of natural topography and buildings, it is necessary to pay attention to the social topography of groups located in cities (Cetin, 2016). The purpose is to examine the social status of different neighborhoods of the city, each of which, according to the facilities and perspectives, create certain spatial structures in the environment. Social topography can explain the social strata in cities according to their cultural, living, residential, and behavioral characteristics and in urban decisions, determine the scope of activities and how to deal with them. In the social geography of cities, social topography is the basic platform for measuring the segregation of different area living in cities (Rahnaei, 1988; Hemaloshinee and Nomahaza, 2017). Government policies can be effective in the development of cities in various ways, including the development of administrative and political structure. The economic condition dependence of third World cities might be considered as productive relations and it involves the creation of slums, suburbs, the deterioration of the central city, establishment of land bank and control of urban development form and optimal use of urban lands. Today, the role of states in geographical spatial planning, which was previously forgotten in geographical studies, is a determining factor and is emphasized in all geographical areas, especially urban geography. Among these decisions is the determination of borderlines and their effect on the growth and development of the city, as well as the transfer of administrative and guidance maps of cities, which affects the dynamism of cities (UNCTAD Agenda, 2015). it can be said that the uncontrolled

expansion of cities on the one hand and the lack of control mechanisms on the other hand, as well as the need to create different uses and construction of urban facilities. Also, equipment and foresight coordinate with social, economic, cultural and industrialism, forced the thinking man to plan and comprehensively design the city to create welfare and comfort. The uneven growth and the increasing expansion of cities are some of the problems of today's cities that have led to the phenomenon of suburbanization. The most important problems caused by suburbanization are a waste of land size, lack of adequate urban facilities and services, and lack of suburban continuity (Aliyu and Amadu, 2017). In recent decades, due to the social, economic, and political opportunities of Iranian cities, significant changes have taken place. The main developments cause such as urban population growth, uncontrolled physical development and new spheres of influence lead to affect in the transformation of new urban plans and some other reasons such as rapid expansion of serve and commercial occupation qualified this trend of growth. This city is the 33rd most populous city in Iran (Population and Housing censuses, 2016). The city is located in the north of a fertile plain called Silakhor and is surrounded by high green peaks of the Zagros Mountains. Numerous permanent springheads flowing from the foothills of these mountains plays a main role in the region's economy and the development. The city has had a special communication position since ancient times and today the location of this city on the Tehran-South highway is one of the factors of its economic prosperity. Therefore, the strategic role and position of the city with socio-economic and political developments and changes in this region can be considered and evaluated as one of the factors of growth and development of the city in different periods of the past and present (sheikh *et al.*, 2014) (Fig. 2).

The legal area of city is 3719.09 hectares, which is divided into three municipal districts and 17 areas, which include 36 neighborhoods. The initial core of the city (the beginning of urbanization) was formed in 1921 and continued until 1941. The study of the population growth rate of the city in the comparison of other province cities shows that the population of the city has increased from 49186 people in 1956 to 326452 people in 2016. And in 1966 with a

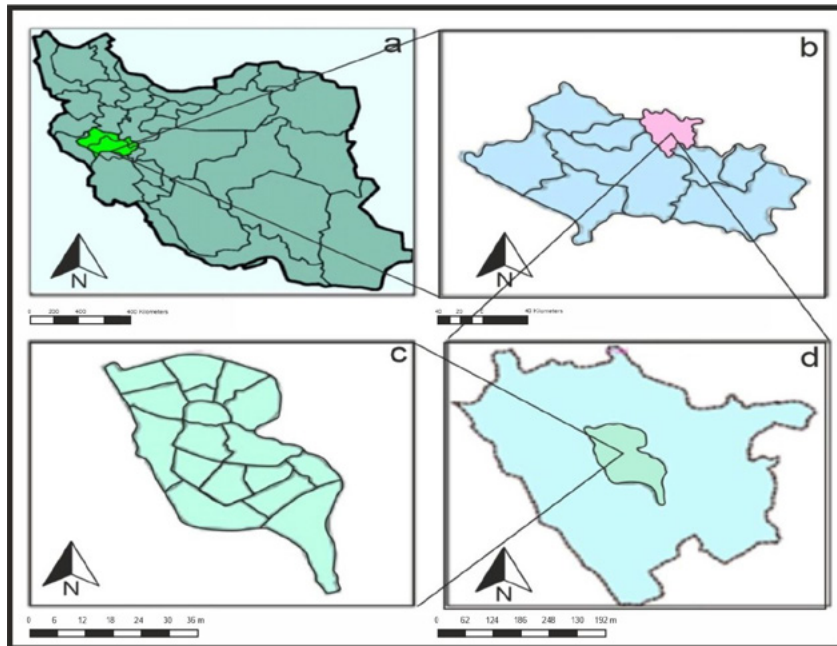


Fig.2: The position of Boroujerd city in political-functional divisions upstream

a) The position of Lorestan province in Iran. b) The position of Boroujerd city in Lorestan province. c) The position of the primary care in Boroujerd. d) The position of neighborhood primary care in Boroujerd)

growth rate of 3.8 percent to 71486 and in the next decade to 101345 people. It can be understood the most demographic changes in 1975 up to 1985, which has reached 183,160 people due to the 6.1% growth of the population of it. From 1986 onwards, the population of city has continued to increase. Therefore, Boroujerd city is in the middle of the region, according to the population ([Population and Housing censuses, 2016](#)) ([Fig. 3](#)).

This city is one of the most significant cities of the province of Lorestan, whose location can be seen in [Fig. 4](#) in terms of growth and development of urban services and economic and social development and other cities in the province. The economy of this region is based on regional and supra-regional trade, retail, agriculture and animal husbandry, administration and government services, as well as the production of industrial and mineral products. Due to its special geographical location and location on busy roads and proximity to the areas of the traffic of Lor tribes, The city has been one of the important commercial centers of the region in the past centuries and the big market of this city has many shops and caravanserais. Up to the statistical yearbook of Lorestan province, this city

has a great potential to become an industrial, service, and finally, agricultural hubs in the region ([Table 1](#)). The main comparison of the spatial coefficient of the city with other cities of Lorestan province can explain the potential of high capacity to be in rapid way to qualification as a growth center of province. It should be explained that the Location Quotient (LQ) of three dimensions has been used in tables.

What the [Table 1](#) shows is that city can play an effective role in the development of its region's economy by having a relative ability in the field of industrial and service activities (compared to other cities in Lorestan province). According to the [Table 2](#), the activity of this city in the two economic sectors of industry and services is of a basic type and shows more than other urban areas of the province. It can be said that the main activity while responding to the demands of the residents, can increase the income of their area by exporting goods and services outside it ([Table 2](#)).

The data in [Table 2](#) shows that there is a clear difference between Boroujerd city and the national level in of sustainable economic development indicators. One of the reasons for the unfavorable

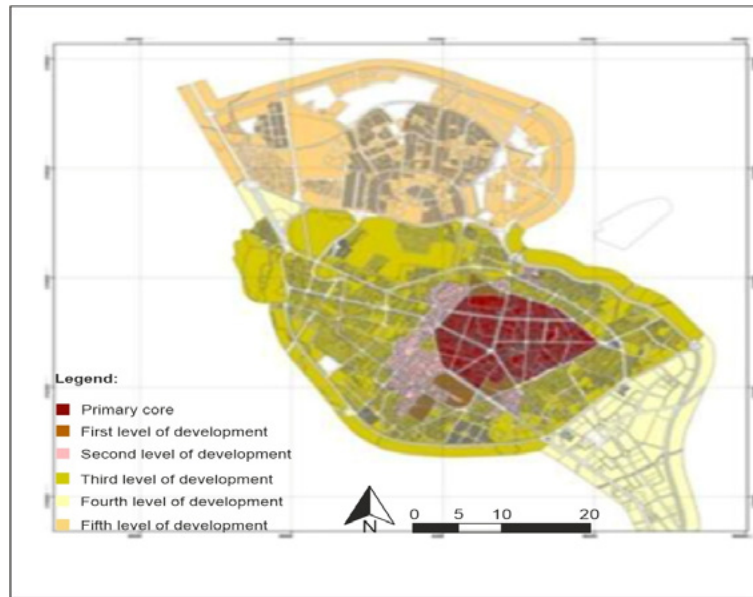


Fig.3: Development of the city in different historical stages of the city

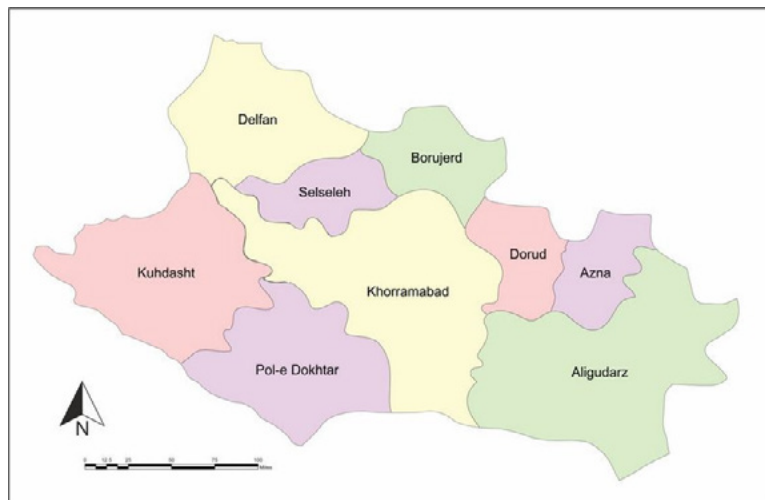


Fig. 4: Location of Lorestan province and Boroujerd city (Borujerd detailed plan, 2017)

economic situation in city is the lack of attention to the issue of job creation and immigration in this city, especially the young and economically active population.

As a result the rising percentage of inactive people, the loss of investors in the industry, especially up to recent years economic crisis and lack of necessary support, failure to attract investors and job creation, unwillingness to invest in the industry

due to high risk will affect this situation. On the other hand low urban population desire to work in agriculture, which are reasons such as unfamiliarity and Sufficient information in this area, drought, lack of capital, hard work, etc., have caused the vast majority of the population to be employed in the service sector. Other factors such as lack of some infrastructure, lack of government attention to solving economic problems in this region, and weakness and

Table 1: Comparison of the spatial coefficient of Boroujerd city with other cities of Lorestan province, (Statistical yearbook of Lorestan province, 2011)

City	L.Q <sup>1</sup> (Agriculture)	L.Q(Industry)	L.Q(Serveries)
Boroujerd	0,6	1,35	1,3
Khoramabad	0,81	0,77	1,23
Kuhdasht	1,3	0,8	0,95
Dorud	0,7	1,5	0,9
Selseleh	1,5	0,36	1,03
Aligudarz	1,34	1,04	0,78
Pol-e Dokhtar	1,85	0,44	0,85
Azna	1,4	0,91	0,83
Delfan	1,47	1,21	0,62

Table2: Comparison of selected economic indicators of Boroujerd city and urban districts of Iran

Index	Boroujerd city	State urban districts	D <sub>i</sub>
Economically active population rate	36,91	38,77	-
Economically inactive population rate	63,09	60,4	-
The difference in the percentage of activity of men and women	58,52	38,95	-
The employment rate of the population 10 to 14 years old	0,62	0,8	+
Active population rates in the agricultural sector	3,53	22,27	-
Active population rates in the industrial sector	17,13	26,51	-
Percentage of households owning the building and land	68,07	62,2	+
Percentage of tenant households	24,11	9,2	-
Unemployment rate	17,26	11,82	-
The number of couples in which the indicators of Boroujerd city are positive =			2

(population and housing census, 2016)

inadequacy at management levels are other factors affecting the economic instability (Parizadi *et al.*, 2016). This study aims to evaluate and analyses the mechanisms affecting urban development in city after the conceptual framework propositions. The current study has been carried out in Islamic Azad University of Tehran North Branch in 2021.

### MATERIALS AND METHODS

The research method is descriptive- analytical and is practical in the purpose. at first, the initial model is compiled based on theoretical background and in next stage, this model was tested and developed through the Delphi method Then, all factors were assessed by collecting field data and using a questionnaire and the extracted data were analyzed through descriptive statistics and qualitative analysis. The Delphi method has been developed to reliably generate and gather ideas and opinions and generate relevant information for decision making. This method is used in all kinds of futurisms. In this method, the researcher prepares questionnaires related to the subject under study and sends them by e-mail to all the desired elites. 14 factors as a default in the first stage extracted from theoretical background and empirical foundations for mechanisms

affecting urban development from the perspective of panel experts such as university researchers and experts that had a research background up to this subject which include macroeconomic, social, and cultural factors. In this regard, to investigate the first stage, all the factors affecting urban development are mentioned, including; Employment, investment, Social situation, Land mercantilism, dominant economic activity, marginalization, migration, population, Black-Business, ethnicism, integrated management, transportation, intercity economic relations, and construction are listed.

### RESULT AND DISCUSSION

#### Findings on Delphi method implementation

##### The first round

During this period, the panel members identified 10 of the 14 factors extracted from successful researches as having a great impact on formulating a framework of mechanisms affecting urban development at the center of influence. Detailed results related to the implementation of the first stage of distribution of the questionnaire are shown in Table 3. Factors of business, integrated management, intercity economic relations, ethics have been removed from the Delphi trend due to their average importance of less than 2.5. In the

following, to perform the analysis and interpretations required to achieve the desired results, it is necessary to describe the research method step by step, which subsequently in each part of the desired output can be in mechanisms affecting urban development. The content analysis process begins when the analyst considers patterns of meaning and topics that are of potential interest. This analysis involves a continuous flow between the data set and the encoded summaries and the analysis of the data that is generated. The collection of survey data in the present study, starting of questionnaires in the first stage of the research and the extracted data is analyzed through descriptive statistics and qualitative analysis (Table. 3).

The panel members identified, 8 factors out of the 10 factors presented in the second round, having a high and very high impact (with an average greater than 3) on the framework for determining the mechanisms affecting urban development, taking into account its sphere of influence. Two factors of transportation and construction were also eliminated. Detailed results related to the implementation of the second stage of the questionnaire distribution are shown in Table 4. The Kendall coefficient for the members' answers about the order of the nine factors that had a great and very high impact in this round was 0.765 (Table. 4).

In the third round, the development of indicators determining the mechanisms affecting urban development, taking into account its area of influence, along with the average opinion of members in the second round and the previous opinion of the same member was provided to all panel experts. Detailed results related to the implementation of the third stage of the questionnaire distribution are shown in Table 5. The Kendall coordination coefficient for members' answers about the order of nine factors was 0.790 (Table. 5).

*Reasons to stop polling*

The results of the three rounds of the Delphi method in the research had shown that for the following reasons, there is a consensus among the panel members and it is possible to end the repetition of rounds:

- In the second round, more than 50% of the members chose 10 influential factors in compiling the indicators determining the mechanisms affecting urban development, considering main matter, which had an average greater than 2.5, among their factors.
- The standard deviation of the members' answers about the importance of the factors in the third round has significantly decreased compared to the previous rounds.

Table 3: Stage 1 of the Delphi method in developing indicators determining the mechanisms affecting urban development, taking into account its sphere of influence

No	Factors	Response Ads.	average	Standard deviation	Min.	Max.
1	Employment	29	4,86	0,35	2	5
2	Investment	28	4,98	0,37	3	4
3	Social situation	33	5,21	0,37	2	5
4	Land mercantilism	25	4,72	0,45	1	5
5	Dominance economic activity	31	5,10	0,37	2	5
6	Marginalization	33	4,80	0,40	1	4
7	Migration	32	4,86	0,35	1	4
8	Population	30	4,30	0,37	1	4
9	Black-Business	33	2,21	0,45	2	5
10	Ethnicism	33	2,31	0,52	1	5
11	Integrated Management	33	2,1	0,76	1	5
12	Transportation	33	3,51	0,52	1	4
13	Intercity economic connection	33	2,41	0,57	1	5
14	Instruction	33	2,55	0,60	2	5



Table 4: Phase 2 of the fuzzy method in developing indicators determining the mechanisms affecting urban development

No	Factors	Response Ads.	average	Standard deviation	Min.	Max.
1	Employment	15	3,54	0,91	3	5
2	Investment	15	3,08	1,03	3	5
3	Social situation	15	3,41	0,91	4	5
4	Land mercantilism	15	3,22	0,95	3	5
5	Dominance economic activity	15	3,22	1,11	3	5
6	Marginalization	15	3,34	1,03	3	5
7	Migration	15	3,40	0,96	3	5
8	Population	15	3,52	0,97	4	5
9	Transportation	15	2,78	0,95	2	5
10	Instruction	15	2,69	1,11	2	5

Table 5: Step 3 of the fuzzy method in developing indicators determining the mechanisms affecting urban development, taking into account its sphere of influence

No	Factors	Response Ads.	average	Standard deviation	Min.	Max.
1	Employment	15	4,24	0,67	1	5
2	Investment	15	4,08	0,91	1	5
3	Social situation	15	4,51	0,82	1	5
4	Land mercantilism	15	4,22	0,45	1	5
5	Dominance economic activity	15	4,22	0,38	1	5
6	Marginalization	15	4,34	0,92	1	5
7	Migration	15	4,40	0,78	1	5
8	Population	15	4,52	0,99	1	5

➤ Kendall's coordination coefficient for members' answers about the order of factors in the third round is 0.790. Given that the number of panel members was more than ten, this amount of Kendall coefficient is quite significant.

➤ Kendall's coordination coefficient for arranging the nine factors influencing the determinants of mechanisms affecting urban development, considering its sphere of influence in the third round compared to the second round, increased by only 0.025. Panel members did not show significant growth between two consecutive rounds.

➤ The points given to the factors by experts and elites indicate that the criteria of social status, employment, population have the highest score and therefore have the greatest impact on the realization of the mechanisms affecting urban development in the framework development process.

Therefore, the indicators that determine the mechanisms affecting urban development can be presented such as final factors includes Employment, Investment, Land Stock-game, Dominance economic activity, Marginalization, Migration, Population and Social situation and also So in order Employment ratio,

Establishment of companies and industrial workshops, Land Stock-game statue, Dominance economic activity ratio, Marginalization ratio, Migration ratio, Population ratio and Social typology are research main indexes.

*Evaluation*

As Table 2 shows, there is a significant relationship between economic, social, and cultural variables and indicators of city and its urban development. For analyze the economic indicators and their impact on the urban development of city and its sphere of influence, 4 indicators of employment, workshops and industrial companies, land exchange, and economic activities governing the city were examined. As Table 3 shows, there is a significant relationship between employment and the urban development index. That is, the more employment and diversity there is in the city especially the young and educated, and the greater its impact on the formation of urban development and the development of its sphere of influence. The results of regression analysis in Table 6 show that the correlation coefficient of the employment variable in urban development and the area of influence is equal to 0.606. That is, for one unit of increase in employment indicators in the city, The results indicate as much as 0.538 positive changes in urban development. Therefore, the employment index has a positive effect on urban development. The Pearson correlation coefficient is between 1-0. That is, whatever the obtained coefficient leads to the number one, it indicates the relationship and effect of the two variables on each other. The study of field survey showed that the establishment of workshops and industrial companies in city has brought urban income to the city and thus has helped to create urban welfare. It has improved the infrastructure of urban transportation and transportation of goods. On the other hand, it has caused the population to remain and attract immigrants from the surrounding cities. According to Table 2 there is a significant relationship between the index of the establishment of workshops and industrial companies

in city and the development of the city and the sphere of influence. This means that the more workshops and industrial companies are established in the city, the more city will be developed. The results of regression analysis showed that the coefficient of variation of workshops and industrial companies in the urban development of city and its sphere of influence is equal to 0.695. Therefore, the establishment of workshops and industrial companies in the city will affect urban development and its sphere of influence (Table. 6).

One of the factors intensifying the process of physical development of the city is the land game exchange (Mohammadi mianrodan, 2013).The results of the survey showed that there is a significant relationship between land mechanism and the urban development. That is, the higher the land mechanism rate in the city, the greater the physical development of the city. The results of regression analysis showed that the correlation coefficient of the variable land mechanism in urban development is equal to 0.740If the variable effect of economic activities governing the indicators of urban development and its sphere of influence is controlled, its magnitude is 5.046. Therefore, economic activities governing the city (service-agriculture) as one of the economic variables have a positive impact on the urban development. Also, the Pearson correlation coefficient indicates a direct relationship between the variables of economic activities in the city and urban development indicators with a coefficient of 0.701. Today, rural-urban migration has led to unthinkable urban development. The city has attracted many immigrants in recent decades due to its political, administrative, service centralization, and injection of government budgets on the one hand and 1979's Revolution change on the other hand. This trend will continue for decades to come. Marginalization, lack of services and equipment, false jobs, and unbridled physical-spatial development have affect the city. Statistics show that about a third of the city's population lives in the suburbs. These marginalized people have migrated to city in search

Table 6: Development of the main indicators of mechanisms affecting urban development, taking into account its sphere of influence

Factors Branches	Final Factors	Research main indexes
Economical	Employment	Employment ratio
	Investment	Establishment of companies and industrial workshops
	Land Stock-game	Land Stock-game statue
	Dominance economic activity	Dominance economic activity ratio
Social and Cultural	Marginalization	Marginalization ratio
	Migration	Migration ratio
	Population	Population ratio
	Social situation	Social typology

of jobs by migrating from other cities and villages of the province. According to [Table 4](#), the higher the immigration capacity of city, the greater its impact on urban development and its sphere of influence. The results of the regression analysis showed that the correlation coefficient of the variable of immigration or urban migration on urban development and it is equal to 0.741, so the ratio of the variance of the urban development variance is explained by the urban migration variable is 0.523. If the effect of immigration variables in the development of city is investigated and controlled, its impact on urban development the ratio is about 1.003. The results of the regression analysis showed that the correlation coefficient of natural population growth variable and urban development and ratio is equal to 0.781, so the ratio of the variance of the urban development variable that is explained by the natural population growth index is 0.584. If the factors and indicators of natural population growth in it are controlled and examined, its impact on the rate of city development is 1.97 ([Tab. 7](#))

The study of the role of social topography of city shows that there is a significant relationship (0.000) between the two variables and the impact of the social topography of city on urban development is 2.237. Therefore, the city officials should pay special attention to this factor. In the analysis of social and cultural factors and their indicators in urban development, it can be boldly said that social and cultural factors are the most important factors creating the rapid development of cities. So that the development of the city is closely related to the growth rate of urban population and in this regard, the natural increase of urban population, the rate of net migration to the city, the transfer of population construction of non-urban communities in the city, and urban population construction are the main factors. With the growth of population and consequently with the rapid growth of urbanization and urbanism, social relations in cities are transformed and the traditional relations of the past are changed by the dynamic conditions of urbanization. These changes affect the fabric of urban networks and improve and expand social relations between the inhabitants of cities and creating the necessary facilities for the lower classes of society and the growth and flourishing of talents and their creativity and their use of social facilities. Up to the findings, the study of the role of the social topography of Boroujerd city in urban development and its sphere of influence showed that there is a significant relationship (0.000) between the two variables. On the other hand, the variance ratio of urban development

variance is due to the natural population growth index of the city. The study of economic and social activities showed that it seems that in this city, far from other cities of the same level and the development process is not sustainable. This has resulted in an imbalance in urban development. The land mechanism is one of the problems of the urban districts, especially the marginal areas. This factor influenced its urban development and its zone of influence. According to a survey, land prices in the city have increased significantly in recent years. The results of the regression analysis show that the correlation coefficient of the land exchange variable on urban development is 0.740. The results showed that there is a significant relationship between the index of the establishment of workshops and industrial companies. These establishments have contributed to the creation of jobs and the sustainability of the population of the new town. The impact of these towns on the employment and unemployment index shows that this city has less unemployment (19.3%) than other cities in the province and the average rate of the province (23.9%). The establishment of companies and industrial workshops has helped to develop the infrastructure of city has accelerated the development of the city and has brought financial and economic capital as well as urban income to the city and thus helps to create urban welfare in the city. On the other hand, the establishment of companies and industrial workshops has attracted immigrants from other cities to it. finally, it can be said that economic and social indicators have an undeniable role in the formation and development of city and its sphere of influence and should be considered by city officials and stakeholders.

## CONCLUSIONS

According to the research conducted on the subject, the main factors affecting urban development and its sphere of influence were examined, which according to the type of the initial model is compiled based on theoretical background and in next stage, this model was tested and developed through the Delphi method Then, all factors were assessed by collecting field data and using a questionnaire and the extracted data were analyzed through descriptive statistics and qualitative analysis. The results of analysis showed that the correlation coefficient of the variable indicators in urban development was so various. On the other hand, the impact of factors and indicators of natural population growth in Boroujerd in the field of urban development was high, which was a small part of urban population growth and development. Economic

Table 7: the relationship between social and cultural indicators and urban development of Boroujerd and its sphere of influence

Variables	Regression	R-Square	F test	Significance level	Constant	B	Beta	Pearson coefficient
The relationship between immigrations and urban development in city and its sphere of influence	0.741	0.532	384191	0,000	1,003	0,738	0,741	0,741
The relationship between natural growth and urban development in city and its sphere of influence	0.781	0,584	379191	0,000	1,97	0,521	0,781	0,781
The relationship between economic activities in the city and urban development of city and its sphere of influence	0,530	0,281	147980	0,000	2,237	0,472	0,530	0,530

and social indicators have an undeniable role in the formation and development of the city and its sphere of influence and should be considered by city officials and stakeholders. So based on the development of policies such as Planning to organize the privacy and preventing the settlement of immigrants, land mechanism and also new development patterns can solve the future matters of the city.

In connection with the application of these research results in planning, especially urban planning, it can be said that the distribution of dimensions and dynamic expansion of urban areas are key issues in managing urban growth and reducing its negative effects on the environment and ecosystems. Is. Even if urban growth is considered a necessity for a sustainable economy, uncontrolled or irregular urban growth without considering its effective conditions can cause various problems such as destruction of open spaces, change of landscapes, environmental pollution. Traffic congestion, pressure on infrastructure, and other social and economic matters. To address these issues, continuous monitoring of urban development evolution in terms of the type and extent of change over time is essential to assist planners and decision-makers in future urban planning. Simultaneously with the emergence of many problems due to population density and widespread urbanization in cities, planners and urban planners to provide approaches to deal with population accumulation in cities due to problems and challenges due to density and lack of facilities and land and the formation of slums In this regard, the issue of factors and mechanisms affecting urban development and its

sphere of influence has been of particular importance. The type of relationship between cities is one of the most important factors in recognizing the problems of cities, and also their ratios is the reason for the expansion and development of the city and its suburbs.

Therefore, recognizing and analyzing these factors will help in better planning for proper and sustainable development of the city and comprehensive control and planning by considering the city and the amount and type of relations between the city and its sphere of influence. In this study, seven important mechanisms of Boroujerd's urban development and area of influence were identified. In the first place, the development of this city, like most cities in its surrounding area and even other cities in the country, has been primarily the product of natural mechanisms. The city's development has been north-south for a few years now. The second mechanism that affected it's urban development and area of influence was the economic mechanism. One of the factors that intensified the physical development process in city was the exchange of land. Natural population growth and migration constitute the fourth mechanism affecting urban development in city and its sphere of influence. The lack of efficient plans for the resettlement of migrants has led to the creation of suburban areas around cities, the expansion of the city to the periphery, and the destruction of agricultural lands and gardens.

The fifth mechanism affecting the development of the city and its ratio has been the development of rapid urbanization. One of the important characteristics of the urbanization process in city is its rapid and unforeseen

physical expansion. These changes are in the form of rapid population growth and physical growth of the city in an unbalanced and uncoordinated manner, especially in the southern lands of the city, and in the last stage of development, it has also included the northern lands of the city. The sixth mechanism affecting the urban development and its area of influence was the localization and communication of the city. This communication situation has been efficient in the physical development of the city, in the economy and tourism of the city. This has influenced the city's industrial development by building upon intersectoral and complementary industries to guide the city's industrial development. The seventh mechanism affecting the urban development has been the topographic condition and the slope of the land. The geomorphological hazards of the city have brought about the development of the city in the last two periods, north and south. The western part of the city has experienced the least development over the past few years.

#### Suggestions

According to the studied case, the following suggestions as policies by mentioning the priorities of action are provided for the better development of city and its sphere of influence such as:

- 1- Planning to organize the privacy and sphere of influence
- 2- Preventing the settlement of immigrants in the urban sphere of influence
- 3- Supervising construction control in the city
- 4- Preventing the change of land use around the city and its sphere of influence
- 5- Organizing urban development based on the proposed patterns of urban development
- 6- Planning to prevent the land mechanism

#### AUTHOR CONTRIBUTIONS

F. Mohammadian performed the literature review, experimental design, analyzed and interpreted the data, prepared the manuscript text, and manuscript edition. P. Ziviyar Pardei and A. Estelaji supervised the experiments, literature review, data compiling and manuscript preparation

#### CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double

publication and, or submission, and redundancy have been completely witnessed by the authors.

#### OPEN ACCESS

©2020 The author(s). This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit: <http://creativecommons.org/licenses/by/4.0/>

#### Publisher's note

Tehran Urban Planning and Research Center remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

#### ACKNOWLEDGMENTS

The authors were partially supported by the Department of the geography and urban planning of Islamic Azad University of the North-branch. The authors are thankful to the experts who greatly assisted throughout this research work.

#### ABBREVIATIONS

LQ	location quotient
----	-------------------

#### REFERENCES

- Aliyu, A.; Amadu, L., (2017). Urbanization, cities, and health: The challenges to Nigeria – a review, pmc publication, Oct-Dec; 16(4): 149–158 (10 pages).
- Amoateng, P.; combine, P.B.; added, K.O., (2013). Managing physical development in Peoria-urban areas of Kumasi, Ghana: A case of Abuakwa. J. Urban Environ. Engineer., 7(1): 96-109 (14 pages).
- Bahraini, S., (2013). Urban design process, University of Tehran publications, sixth edition, Tehran. (In Persian)Bemanian, M.; Mahmudinejad, H., (2010). Safety and urban design, tehran publication, Tehran. (In Persian)
- Batty, M., (2013). The new science of cities. MIT press.
- Cheng, J.; Masser, I., (2004). Understanding spatial and temporal processes of urban growth: cellular automata modelling.

- Environ. Plann. B: Plann. Design, 31(2): 167-194 (28 pages).
- Cetin, M., (2016). Sustainability of urban coastal area management: A case study on Cide. *J. Sustain. Forest.*, 35(7): 527-541 (15 pages).
- Ghanbari, A.; Karami, F.; Heidarinia, S.A.hmad., (2016). An Investigation of Growth Process and Uneven Development of Medium size Cities (Case Study: City of Marand - East Azerbaijan), *Q. J. Environ. Based Territorial Plann.* 9(33) 71-93 (23 pages). (In Persian)
- Ghorbani, R.; Ebrahimpour, A.; Noshad, S., (2012). Motivational modeling in developing of Urban fringe recreational places an approach for improving the quality of Life Case Study: recreational place of Oun-Ebn-Ali, Tabriz, Iran., *procedia Environ. Sci.*, 13: 297-306 (10 pages).
- Hejazi, S.J., (2018). Estimating urban employment rate in land-use development scenarios using Regression model (Case study: KianPars and KianAbad neighborhoods of Ahwaz). *Phys. Social Plann.*, 5(2): 65-79 (15 pages). (In Persian).
- Hemaloshinee, V.; Nomahaza, M., (2017). Organizational citizenship behavior in hospitality industry: Bridging challenges, benefits and contribution. *Int. J. Hum. Capital Urban Manage.*, 2(3): 243-250 (8 pages).
- Inostroza, L.; Baur, R.; Csaplovics, E., (2013). Urban sprawl and fragmentation in Latin America: A dynamic quantification and characterization of spatial patterns. *J. Environ. Manage.*, 115: 87-97 (12 pages).
- Jaeger, J.A.; Bertiller, R.; Schwick, C.; Kienast, F., (2010). Suitability criteria for measures of urban sprawl. *Ecol. Indic.*, 10(2):397-406 (10 pages).
- Jafari Mehrabadi, M.; Shokrgozar, A.; Allahyari Asli Arde, S., )2017(. Assessment of Residential Environment Quality of Urban Neighborhoods (Case Study: Neighborhoods of Khorramshahr and Ziabari, Rasht). *Geog. Urban Plann. Res.*, 5(1): 105-125 (21 pages). (In Persian)
- Lynch, K., (1960). *The image of the city*. 11: MIT
- Kheyroddin, R., Ghaderi, M., (2020). New towns as deconcentration or another concentration in the metropolis: evidence from Parand New Town in the Tehran Metropolitan Area. *Int. j. Urban Sci.*, 24(1): 69-87 (19 pages).
- Krätke, S., (2014). Cities in contemporary capitalism. *Int. J. Urban Region. Res.*, 38(5): 1660-1677 (18 pages).
- Ministry of Cooperatives, Labor and Social Welfare., (2014). Lorestan province at a glance; center for strategic statistics and information. (In Persian)
- Mohammadi, J.; Mohammadi, A., (2017). Study of physical development of Zanjan city with emphasis on indoor development indicators. *Geog. Plann. Space Q. J. Gorgan Uni.*, 8: 11-24 (14 pages)(In persian).
- Momeni, M.; Hatami, M., (2011). An analysis of the influence field of Abarkuh city and its Urban development; The First National Conference on new Technologies in Engineering Sciences.
- Mousa Kazemi, S.M.; Hosseini, S.A.; Bagheri Hare Dasht, M., (2012). Analysis of factors affecting Rasht population growth and its consequences on the ecology of the city. *Q. Popul.*, 19(80): 83-100 (18 pages). (In Persian)
- Neisiani, B.A.; Seyedan, S.M; Radfar, E., (2016). Urban green spaces assessment approach to health, safety and environment. *Int. J. Hum. Capital Urban Manage.*, 1(2): 123-132 (10 pages).
- Pareta, K.; Prasad, S., (2012). Geomorphic effects of urban expansion: a case study of a small town in central India. 14th annual international conference and exhibition on geospatial information technology and applications. 1-9 (10 pages).
- Parizadi, T.; Moradi, M.; Saki, F., (2019). Viability analysis in the neighborhoods of the central part of Boroujerd. *Urban Stud. J.*, 31:3-16 (14 pages)v(In Persian)
- Population and Housing Organization., (2016). *Statcal center of State, Budget Organization, Tehran, Iran.*
- Rajabi, A.; Moradi Mokkram, S., (2019). Elements affecting the development of spatial and physical structure of Asadabad City. *Q. J. Urban Civil. Stud.*, 11(5): 63-78 (16 pages). (In Persian)
- Peiser, R., (2001). Decomposing urban sprawl. *Town Plann. Rev.*275-298 (24 pages).
- Rousta, Z; Monavari, S.M; Darvishi, M; Falahati, F; Morovati, M, (2013), Evaluation of physical development process of Shiraz and the impact of physiographic conditions on land use change, *J. Geog. Environ. Plann.*, 24(49): (In Persian)
- Scott, A.J., (2006). Creative cities: Conceptual issues and policy questions. *J. Urban Affairs*, 28(1): 1-17 (18 pages).
- Sheikh, H.; ZakerHaghighi, K.; Mansouri, S., (2014). Sporadic investigations on Boroujerd city and its Internal development strategies. *J. Urban Res. Plann.*, 4(15): 37-56 (20 pages). (In Persian)
- UNCTAD Agenda., (2015). *United Nations Conference Trade and Development report, 14, Nairobi, Kenya.*
- van der Voordt, D.J.M.; van Wegen, H.B., (2007). *Architecture in use*. Routledge.

#### COPYRIGHTS

©2022 The author(s). This is an open access article distributed under the terms of the Creative Commons Attribution (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, as long as the original authors and source are cited. No permission is required from the authors or the publishers.



#### HOW TO CITE THIS ARTICLE

Mohammadian, F.; Ziviyar Parde P.;Eselaji, A., (2021). *Evaluation of affecting mechanisms of urban development and its sphere of influence*. *Int. J. Hum. Capital Urban Manage.*, 7(2): 217-230.

DOI: 10.22034/IJHCUM.2022.02.06

url: [http://www.ijhcum.net/article\\_245407.html](http://www.ijhcum.net/article_245407.html)

