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Original Research Article

The Explanation of the Peri-Urban Concept and the Factors Affecting Its Creation and Development*

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Abstract

Problem statement: Peri-Urbanization (sometimes referred to as the urban fringe) may be a dominant urban form and spatial planning challenges of the 21st century. In industrialized or post-industrial countries, Peri-Urban is the domain of economic, social and spatial change, while in newly industrialized and most developing countries, it is often a chaotic urban region that causes disharmony and incoherent development. In both cases, in addition to some intercity and suburban outskirts, Peri-Urban can be considered a transitional zone and play a greater role as a functional territory. Although a clear and simple definition cannot be found for these areas, there are common features wherever such areas are found. Many global challenges arise from the ways that cities grow and change, especially the emerging mega-cities in developing countries such as Iran, where massive social and environmental problems can be found in their peri-urban hinterlands.

Research objective: Because these areas have relatively low population density by urban standards, scattered settlements, high dependence on transport for commuting, fragmented communities and lack of spatial governance, Explaining the concept of Peri-urbanization and the factors affecting the creation and development of these areas the goals of this research.

Research method: In this research, with an analytical-descriptive approach, a general overview of the phenomenon of urbanization in the European and global concept was conducted. The content analysis method also examines the content of the internal studies conducted by concerning Peri-urbanization. Finally, by introducing a five-dimensional framework that has been adapted from a comprehensive and integrated global study on peri-urbanization to the general study of the theoretical foundations or literature of the subject was examined. To explain a general narrative of how the Peri-Urbanization settlement took place in the present era, considering all its dimensions.

Conclusion: The results of this study show how political, socio-economic and physical driving forces are influential in these areas and as a result of research, a framework for distinguishing the degrees of change in the Peri-Urbanization system from the perspective of different types of links, scales; Spatial development, transformation, resilience and governance will be outlined.

Keywords: *Peri-Urban, Suburbs, Peripheral Urbanization, Urban Expansion, Urban fringe, Rural-Urban-Region.*

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Introduction and precise expression

The Peri-Urbanization region can be one of the most common types of jobs and living conditions in the world in the 21st century. In some parts of the world, it is identified with its high and significant consumption and in other parts where poverty and social displacement are more common, it is a front line between the problems of the city and the suburbs. In addition to the physical development of the city or the shape of the suburbs, it is a place of transformation for a wide range of cultural, social and economic changes.

Therefore, it is necessary to look beyond the conventional divisions of town and village to the new realm called Peri-Urbanization and its main feature is that it is not about constant changes and developments, but about the acceleration and transition. Peri-Urban is the site of changes in the urban structure from a rural perspective and therefore can be an important area in urban terminology to test it in a wider urban area or urban-rural area, which should be in the context of broader developments of dense urban nuclei and rural hinterland be considered. Peri-Urban is like a benchmark for change, not only locally in the line connecting the city to the village, but also in the form of the whole city-region and better expression at the level of "Rural-urban-region".

Observing the peri-urbanization agenda is a challenge to the global urban system. In a 2015 World Bank study, urban population density in developing countries was three times higher than in industrialized countries ([Angel, Sheppard & Civco, 2015](#)), although the current trend is to reduce congestion by 1.7% per year. So if this trend continues until 2030, the built-up areas of these cities will triple to more than 600,000 square kilometers, while their population will double. A global remote monitoring study has shown that urban development is divided into four main types:

- low growth cities with modest rates of infilling;
- high-growth cities with rapid, fragmented development;
- expansive-growth cities with extensive dispersion at low population densities;
- "frantic-growth" cities with very high land conversion

rates and population densities (usually in developing countries) ([Schneider & Woodcock, 2008, 92](#)).

Each of these has different spatial patterns; depending on whether it is scattered or concentrated or spreads differently or harmoniously. Of course, a fifth type can be added to these, which has a negative growth and we usually call them shrinking cities.

Usually, these urban definitions include what we use here for the term inner peri-urban or urban fringe and they are directly adjacent to or in the shadow of dense urban areas. Usually, the process of urban expansion should not only not be considered as a negative change, but also one of the benefits and positive points. Especially when the majority of the world's population occupies an average of 3.5 square meters of space per person ([Ravetz et al., 2013, 13-44](#)).

However, this concept means that cities in both developed and developing countries must be required to develop realistic plans for large-scale physical and physical development and capacity building for governance, investment in basic infrastructure and management in these areas. Do sensitive or high-risk each of these measures is specifically used for suburban areas that are rapidly changing within urban development boundaries.

Research background

Studies in the Peri-Urbanization region of Iran are relatively new and in their early stages. Some of these studies will be referenced to reveal the prevailing view and the issues considered in terms of content and emphasis.

Perhaps the first official study and attention on the areas of peri-urbanization are related to the approval of the Tehran urban complex plan in 1995. The Ministry of Housing and Urban Development of the time, to enable and create integrated planning for Tehran and other metropolises; the framework approved "Tahrizi va modiriyat-e majmou'e-ye tehran va sayer-e shahr-ha-ye bozorg-e keshvar va shahr-ha-ye atraf-e an-ha" [The planning and management of the urban complex of Tehran and other major cities of the country and the surrounding cities]

(Ghamami, Khatam & Athari, 2007, 6). Although this plan does not directly and publicly pay attention to the concept of peri-urban and peri-urbanization areas, cases such as scattered population growth and activities, especially in Tehran metropolitan area, the impact of zoning laws and urban plans The projection of low-income groups into peripheral areas and the formation of informal settlements have been investigated.

In another study entitled “Analysing spatial inequalities in peri-urban environments: applying the strategic environmental planning and management in (sepm) Tehran” (Daneshpour, 2006), he emphasized the need to pay attention to the peri-urbanization environment from the perspective of urban planning as an integrated system.

In another study conducted by Khajeshahkouhi, Khorasani & Tourani (2013) entitled “Vakaviyeh pouyayi-ye fazaei-ye jameiyat dar navahiyeh pirashahri: yek Barresi-e edraki [Analysis of spatial dynamics of population in peri-urban areas: a perceptual survey]” they have conducted a perceptual study. In this study, the population growth of peri-urbanization is shown as the effects of four growth processes as follows: suburbanization, urbanization, population survival and centrist migration.

Also Ashenaei (2013) in her master's thesis entitled “Tahlil-e Payamad-e siyasat-ha-ye hedayat va kontro-e roshd bar ravand-e pirashahr-neshini dar hale-ye kalanshahri-ye Tehran [Analysis of the consequences of growth guidance and control policies on the process of urbanization in the metropolitan of Tehran]”, has examined this hypothesis. The increase in urban residential centers with the system of guidance and controlling spatial growth in the areas around the metropolis of Tehran will intensify the developments of urbanization in the metropolis. In addition to the aforementioned research, only two books in the suburbs and Peri-Urbanization have been written. A book entitled “The American Suburb the Basics” by Jon C. Teaford, translated to Persian in 2010, focuses on the history and formation of urban suburbs of American cities in seven chapters.

The second book, which is more serious and new than the others mentioned, deals with the category of peri-urbanization with an emphasis on the system of planning and urban management system, a book entitled “Sustainable Development of Peri-Urbanization”. This book was written by Shams Pouya, Tavakolinia and Mozaffar Sarrafi (2018).

In three chapters, this book examines the spatial organization of the Tehran metropolitan area, the weakness of regional planning and the failure of the existing management system for the Tehran metropolitan area.

Other studies conducted under the title of peri-urbanization in recent years by researchers and domestic experts are presented in Table 1. Ten of peri-urbanization study topics are categorized in Table 2 and shown as Fig. 2.

As can be seen, most of the attention is paid to the category of Peri-urban and Peri-urbanization; to rural areas or other items such as: economy, tourism, land use, environment, population, entrepreneurship. Except one case, the rest is less about urban planning, management of these areas and special attention to peri-urban itself.

On the other hand, from the point of view of foreign studies, the continent that has dealt with this issue more than any other land in the continent of Europe. Europe is a highly urbanized continent, with today more than 75% of the population living in urban areas and this figure is projected to reach 80% by 2020 (EEA, 2016). The dense urban network includes almost 1,000 cities with a population of over 50,000 (although only in a very small number of big cities). In the European Union, only 7% of the population lives in cities with a population of over 5 million. While in the United States, 25% of the population lives in these types of cities (CEC, 2008). In recent decades, the most significant result of ongoing and evolving urbanization in Europe has been the development of functional urban areas (Nordregio, 2015). This process even involves joining relatively peripheral areas to the urban system, connecting neighboring cities to form multi-layered networks and forming large-scale mother-city areas.

Table 1. The of studies peri-urbanization in Iran. Source: authors.

	Research title	Year	Authors	References	Article focus	Related specialized field
1	Urbak sprawl and land use changes in Neyshabur peripheral area	2019	Morteza Tavakoli Nazanin Naeimabadi	Urban Peripheral Development 1(2), 151-165	Land use change Rural areas around the city	Urban planning
2	Strategic analysis of improving the level of safety in peri-urban areas with emphasis on passive defense (Peri-urban area of Rudbar Qasran, metropolis of Tehran)	2018	Majid Saeidi Rad Moslem Namdarzadeh	Police Geography 6(21), 115-134	Safety and passive defense (peri-urbanization as the name of an area)	Disciplinary geography
3	Eghtesad-e zobale'i dar rousta-ha-ye pirashahri-ye jonob-e Tehran [Garbage economy in Peri-urban villages south of Tehran]	2017	Hassan Afrakhteh Mohammad Hajipour	Space Economy and Rural Development 6(4), 47-72	Economic development rural areas around the city	Economic geography
4	Analysis of entrepreneurship contexts in urban peripheral spaces development, case: Kermanshah County	2019	Hourieh Moradi	Urban Peripheral Development 1(2), 137-150	Entrepreneurship development Rural areas around the city	Urban planning
5	Reflection of the expansion of the second houses in the urban areas of Mazandaran province	2019	Hossein Alipour Masoumeh Barari Nobakht Sobhani	Urban Peripheral Development 1(2), 47-58	land use change rural areas around the city	Urban planning
6	Tahlil-e paydari-ye eghedesadi-ejtema'i-ye navahi-ye rousta-ha-ye pirashahri, shahrestan-e Gomishan [Analysis of socio-economic sustainability of rural areas of peri-urban, case: Gomishan city]	2019	Maryam Kiyaei Yousof Darvish	Space Economy and Rural Development 8(3), 227-250	Socio-economic development rural areas around the city	Rural geography
7	The process of formation of informal settlements in periphery of Meshchein city	2020	Musa Kamanroudi Kojouri Taher Parizadi Mehdi Karami	Urban Peripheral Development 1(2), 1-14	Informal settlements rural areas around the city	Urban planning
8	Analyzing factors affecting land use change at rural areas of Mashhad's urban fringe	2016	Hamdollah Sojasi Qeydari Aida Sadrossadat	Rural Research 6(4), 831-856	Land use change rural areas around the city	Rural planning
9	Samandehi-ye gardeshgary dar tafarrogjah-ha-ye pirashahri hamahang ba zarfiyat-e tahammol-e mohiti [Organizing tourism in Peri-urban promenades in line with environmental tolerance capacity]	2011	Hassan Afrakhteh Bahram Ali Khodaei	Applied Researches in Geographical Sciences 11(20), 69-88.	Tourism industry (peri-urbanization as the name of an area)	Economic geography
10	Identification of effective factors creating space in periphery of cities, case study: Urmia City	2018	Hassan Esmailzadeh Shamsi Salehpour Zari Ghaseemian Abuzar Mazaheri	Geographical Urban Planning Research 6(1), 23-54	Land use change (peri-urbanization as the name of an area)	Urban planning
11	Taghyirat-e karbari-ye arazi-ye rousta-ha-ye pirashahri dar farayand-e khazesh-e shahr, rosta-ha-ye Naysar va Hassanabad Sanandaj [Land use changes in peri-urban villages in the process of landslides in Naysar and Hassanabad villages of Sanandaj]	2009	Mohammad Hassan Zia Tavana Hamed Ghadermarzi	Human Geography Research (68), 119-135	land-use change rural areas around the city	Urban planning
12	The analysis of community based strategies of Tehran's suburb tourism development, the case study of Kan-Sologhan district	2018	Fazileh Khani Mansour Ghanian	Urban Tourism 5(4), 121-135.	tourism industry (peri-urbanization as the name of an area)	Economic geography
13	Analysis of rural entrepreneurship capacities in urban peripheral development, case: Eslamshahr county	2019	Mojtaba Ghadiri Masoom Bahman Tahmasbi Abbas Shokryani Masoumeh Karkhaneh	Urban Peripheral Development 1(2), 35-46.	Entrepreneurship development rural areas around the city	Economic geography

continuation of Table 1.

	Research title	Year	Authors	References	Article focus	Related specialized field
14	Repopulation analysis and socioeconomic transformation of urban peripheral villages in Urmia	2018	Mahboub Babaei Morteza Basiri Tochaei Ayyub Badragheghad	Urban Peripheral Development 1(1), 139-150	Economic development rural areas around the city	Economic geography
15	Comparative analysis of inequalities in urban space and urban peripheral spaces, case: Miandoab	2018	Reza Manafiazar Mohammad Valaei	Urban Peripheral Development 1(1), 111-128	Informal settlements (peri-urbanization as the name of an area)	Urban planning
16	Analysis of the levels of development of the space economy and its spatial effects in the surrounding areas of Sanandaj	2018	Hamed Ghadermarzi Atefeh Ahmadi	Research and Urban Planning 8(31), 105-122	Economic development rural areas around the city	Economic geography
17	Determination of entrepreneurship development strategies in peri-urban villages: a case study of villages around Lar City of Iran	2017	Ahmad Ali Khorrambakht	Village and Development 20(3), 65-83	Entrepreneurship development rural areas around the city	Economic geography
18	Investigating micro-system management establishment of peri-urban areas, case study: Tehran Metropolis - District 22	2017	Gholamreza Kazemian Shirvan Mahmoud Ziyaei Maghsoud Amiri Hossein Moradi	Urban Economics and Management 5(18), 41-56	Urban planning management of peri-urbanization areas	Urban planning
19	Spatial linkage and lifestyle of worn in peripheral settlements, case: Selseleh	2019	Ahmad Roumiani Afshin Bahmani Masoumeh Nazari Sheikhi Somayeh Hagh-Nazari	Urban Peripheral Development 1(2), 85-94	Social development rural areas around the city	Rural planning
20	Assessing organic and non-organic model of rural-urban relations at surrounding villages, case study: surrounding villages of Babol City	2014	Mehdi Pourtaheri Abdorreza Roknoddin Eftekhari Leila Mehdipour Roshan Elaheh anzaei	Research and Rural Planning 3(8), 25-36.	Economic development rural areas around the city	Rural geography
21	Payamad-ha-ye eghatesadi-ye taghyirat-e karbari-ye arazi-ye rousta-ha-ye pirashahri: rousta-ha-ye dehestan-e Jey dar shahrestan-e Esfahan [Economic consequences of land use changes in peri-urban villages, case: villages of Jei in Isfahan City]	2017	Samaa Amini Bijan Rahmani Batoor Majidi Khameneh	Space Economy and Rural Developmen 6(2), 17-40	land use change rural areas around the city	Rural geography
22	Trend analysis of evolution in the socio-cultural structures of the peri-urban villages. case study: Saqqez City -Kurdistan Province	2017	Chia Salehi Babamiri Nasrollah Molaei Hashjin Akbar Motamedeh Mehr Timur Amar	Research and Rural Planning 5(16), 61-76	Social development rural areas around the city	Rural geography
23	A comparative study on the quality of life during the migration of rural communities toward suburban villages, case study: Tabadkan Dehestan in Mashhad County	2017	Maryam Ghasemi Neshat Omidvar Elham Ashouri Zahra Nasimi	Geography and Regional Development Reseach 15(1), 123-149.	Social development rural areas around the city	Rural geography
24	Measuring the tourist's satisfaction on the quality of services provided by environ's vacationlands, case study: Sanandaj, Abidar Park	2018	Hamed Ghadermarzi	Urban Tourism 5(1), 69-82	Tourism industry (peri-urbanization as the name of an area)	Economic geography
25	Indigenous knowledge in the encircle of urban peripheral villages evolutions, case: Kerend and Ferrer Villages in the Northeast of Garmsar	2019	Alireza Shah-Hosseini	Urban Peripheral Development 1(1), 17-32	Land-use change rural areas around the city	Urban planning

continuation of Table 1.

	Research title	Year	Authors	References	Article focus	Related specialized field
26	Tahlil-e naghsh-e kalanshahr-ha dar sakhtar-e eghesadi -ye rousta-ha-ye pirashahri, rousta-ye Golhesar dar shahrestan-e Rey [Analysis of the role of metropolises in the economic structure of peri-urban villages]	2018	Habibollah Fassihi	Space Economy and Rural Development 7(2), 107-126	Economic development rural areas around the city	Rural geography
27	Evaluation of local community attitudes towards neighborhoods with peri-urban promenade complexes, case study: Baghroud Neyshabur tourism complex	2019	Ali-Akbar Anabestani Zahra Mozaffari Ali Peyvand	Urban Peripheral Development 1(2), 121-136.	Tourism industry (peri-urbanization as the name of an area)	Economic geography
28	Human factors affecting urban sprawl in Sanandaj (1976-2015) with emphasis on informal settlements and peri-urban villages	2016	Naseh Abdi Saeed Zanganeh Shahraki Nafiseh Marsousi Shahbakhti Rostami	Rural Research 7(3), 564-580	Informal settlements rural areas around the city	Rural geography
29	Analysis of the effects of rural-urban links on physical-spatial transformations in the urban peripheral areas , case: Mahmoudabad and Atashgah settlements around Karaj city	2018	Mazhar Ahmadi Shirin Azizi Nikoo Faeghi	Urban Peripheral Development 1(2), 95-105.	Land use change rural areas around the city	Urban planning
30	Investigating the process of digestion of peri-urban villages in Tehran's development using GIS	2018	Ahmad Ali Khorrambakhsh	research and Urban planning 9(34), 217-228	Land use change rural areas around the city	Urban planning
31	Developing a conceptual framework for exclusive spaces in coastal pre-urban areas: coastal areas of Southern part of Caspian Sea: from Sari to Mahmoud Abad	2017	Maedeh hedayatifard Reza Kheyroddin	Town and Country Planning 9(2), 303-332	Political geography (peri-urbanization as the name of an area)	Urban planning
32	Dealing with environmental degradation caused by urban sprawl using smart code as a new approach, case study: Qazvin City and its peri urban area	2019	Farrokh Moshiri Asieh Nikbin	Geography and Regional Development Research 16(2), 27-49	The environment (peri-urbanization as the name of an area)	Urban planning

Table 2. Ten categories of peri-urbanization study topics in Iran. Source: authors.

contents	abundance	contents	abundance	contents	abundance	contents	abundance	contents	abundance
land use change	9	Economic Development	6	Tourism	4	Social Development	3	Informal residence	3
Entrepreneurship Development	3	Urban planning	1	environment	1	political geography	1	Safety and passive defense	1

Areas close to cities have historically been subject to high development pressures and are strongly associated with increasing per capita consumption of urban land. From 1950 to about 1990, urban areas

increased by 87%, while during the same period, the population increased by only 33% ([EEA, 2016](#)). This trend continued until 2000 when the population of 25 EU member states grew by 2%, urban areas

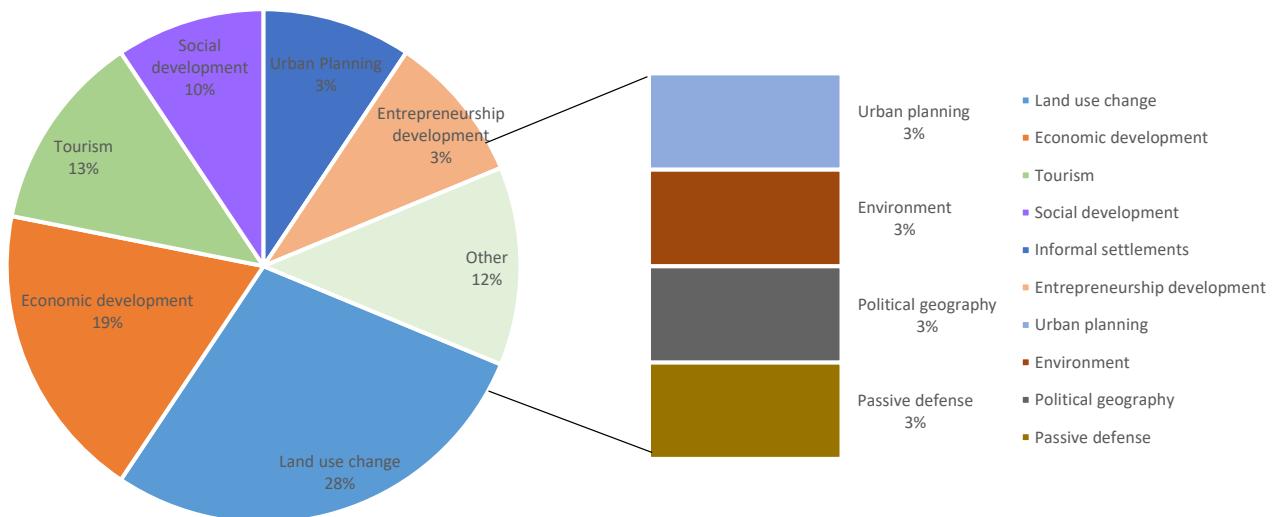


Fig. 1. Topics emphasized in the category of peri-urbanization. Source: authors.

increased by 5%, mainly due to an increase in the number of households and a decrease in the size or size of the household ([Jansson et al., 2009](#)). The low level of population growth in Europe in recent decades has shown that the development of urban areas in Europe is slower than in other parts of the world. However, the pace of change in urban growth and population growth is comparable to other parts of the world, such as the United States and China and creates a continuing approach to decentralization and urban expansion. Urban dispersion and expansion in the form of low density, discontinuous and scattered urban development, is now a common phenomenon throughout Europe ([EEA, 2016](#)).

Theoretical foundations

• The nature of peri-urbanization

Peri-urban and Peri-urbanization are generally loose definitions. They are often described as newly urbanized areas on the outskirts of cities, especially in developing countries, which are then called the “peri-urban interface” ([McGregor, Simon & Thompson, 2006](#)).

From a European perspective, Peri-urban areas are often considered to be mixed urban-influenced areas but with rural morphology ([Caruso, 2015](#)).

The Council of Europe ([CEMAT, 2007](#)) describes peri-urban as a region transitioning from a highly rural to a completely urban environment that is under great pressure for urban development ([Bertrand, 2007, 1-35](#)). On the other hand, peri-urban areas can be a new type of permanent urban landscape, regardless of its instability. Besides, development is not necessarily limited to physical development and merely urban features. Rather, they are often identified by the emergence of urban activities in rural areas such as hobby farms and second homes ([Briquel & Collicard, 2015, 19-40](#); [Caruso, 2015](#)). Even if residents do not live in a highly urban spatial pattern, they can be considered urban because of their lifestyle and social focus on urbanization, for example, the emphasis on the uniqueness and specificity of their area. These urban developments that occur somewhere outside the urban core can be summarized as “peri-urbanization”.

In this regard, Short, Hanlon & Vicino ([2007](#)) outlined the historical evolution of the suburbs of America in four stages: suburban utopia, suburban homogeneity, suburban diversity and suburban dualism are presented in [Table 3](#).

Peri-urban is a place that is neither a city nor a village. The historical dichotomy between urban

Table 3. The stages of suburban development in the United States. Source: Short, Hanlon & Vicino, 2007, 644.

Level	Specifications	Period
1	Suburban utopia The Ideal image of the suburbs as a safe and secure place	Late 19th century and early 20th century
2	Suburban homogeneity Homogeneous suburbs, houses of the same shape and clinging to each other	1945 – 1960
3	Suburban diversity Racial, class and ethnic differences in the suburbs	1960 - 1980
4	Suburban duality Decline and destruction of old suburbs and development of new suburbs	1980 onwards

and rural space in Europe began to fade with the formation of national governments, industrialization and the free economy in the nineteenth century ([Bengs & Schmidt-Thome, 2006](#)). However, with the introduction of mass transportation systems, such as suburban railways and finally with increasing access to cars, suburban areas have become a potential place for living, entertainment and sometimes work for former urbanites. This development leads to the expansion of cities, not only in the physical form of low-density housing, but also in the form of functional relations of an area of influence around cities, which is called the urban area ([Friedmann & Miller, 1965, 312-320](#)). In this urban area, all kinds of developed places are classified a mixture of urban and rural characteristics.

There are many factors that lead to this multifaceted feature. Several different concepts have been used to try to account for it. One popular concept is ex-urbanisation, originally coined as “ex-urban” that described the development of a ring of wealthy rural communities around city, characterized by urban professionals living there but commuting to the urban core for work. Today, many of these areas can be called suburban areas. Some experts believe that ex-urban is not different from suburbanization. Today, suburban cities are shaped and reflected in a variety of ways in places like southern Spain, where, in particular, properties have been built for retirees from Northern Europe ([Zasada et al., 2010, 125-141](#)). The rural-urban fringe is a changing zone between

the central and post-urban cities, characterized by the rapid change in land use. In fact, it is an area where rural to urban agricultural lands are converted in a random way. In this conversion of agricultural lands, they are fragmented and exposed to a lot of pressure to change it to urban and even recreational uses. It is worth noting that this feature can vary from environment to environment. The rural-urban halo has many positive and negative aspects, some of which are presented in the rural-urban halo of London in [Table 4](#).

Another widely used concept describing a form of urban-rural dynamics is “counter-urbanization”. This implies an opposite trend to urbanization, i.e. an increase in migration from the city to the countryside and was observed In the 1960s and 1970s in the United States and Western Europe. Besides the relocation of services and industry into rural areas, the development of part-time farming, second homes and retirement migration plays an important role in this process.

Of course, peri-urbanization includes other forms of change and is not necessarily dependent on migration. It also includes the movement of traffic or the re-creation of other behavioral changes by the old and new residents of the village due to the integration of more rural areas in the system of an urban area. Also, the existence of a relationship between human interactions and ecosystems about the type of use of the peri-urbanization region is decisive, which is discussed below. The impact and significance of

Table 4. Characteristics of rural-urban fringe areas of London. Source: www.geocasesl.co.uk

Land use		Positive aspects	Negative aspects
1	Agriculture	Small scale farms with good management	Invasion of farms, leave of abandoned lands in the hope of permission
2	Economic Development	Careful design of some planned locations such as science and technology parks and business	Traffic generated due to some uses such as out-of-town shopping malls and the creation of unplanned businesses such as scrap iron and waste collection businesses
3	City Services	Existence of warehouses and cemeteries by creating even some attractions	Consequences of Mineral Pollution, Sewage, Burial Sites and Waste Elimination
4	Transportation	Possibility of access to peri-urban and rural areas by creating suitable routes for cycling, walking, and clean transportation.	Expanding the highway network and destroying the environment in the surrounding areas and creating new uses, especially at the intersection of adjacent areas.
5	Tourism	Provide conservation of natural resources or the creation of peripheral resorts such as forest parks and sports fields	The destructive consequences of some activities and uses such as car racing for ecosystems and environmental pollution and local waste
6	Environment	Creating many suitable places with full environmental protection for suitable environmental activities in scenic areas	Land destruction following the dumping and illegal collection of waste in these areas

these processes, as well as how to turn them towards sustainable development is the major issue in the PLUREL project.

From this brief review, it is clear that one of the main challenges of the PLUREL project is how to develop a research approach to understand the interactions among such multiple forces and complex patterns.

• Geographical definitions of peri-urbanization as a basis for this research

The PLUREL project used the term "rural-urban-region" (RUR) as the main unit of analysis, with a range of area types, shown Fig. 2 as nesting circles and based on a wide literature review.

It has been shown that the meaning of each of these topics can vary in different countries and languages. The basic spatial types which define the RUR (rural-urban-region) include:

- Urban core: including the Central Business District and the site of many other civic and cultural functions and some public spaces associated with these;
- Inner urban area: generally higher density built development (build-up areas) including residential, commercial and industrial types of uses and some public open and green space;
- Suburban area: generally lower density contiguous

built-up areas, which are attached to inner urban areas and where houses are typically not more than 200 m apart, with local shops and services, parks and gardens;

- Urban fringe: a zone along the edges of the built-up areas, which comprises a scattered pattern of lower density settlement areas, urban concentrations around transport hubs, together with large green open spaces, such as urban woodlands, forest parks, farmlands and nature reserves;

- Urban periphery: a zone surrounded the main built-up areas, with a lower population density, but belonging to the functional urban area, as below: this can include smaller settlements, industrial areas and other urban land-uses within a matrix of functional agriculture area;

- Rural hinterland: Rural areas surrounding the peri-urban area, but within the "rural-urban-region" and accessible within a practical commuting time and so their rural character is affected by residents with urban incomes and lifestyle.

Therefore, the peri-urban area, including both the urban fringe and urban periphery segments of the above description: defined for the PLUREL project as a discontinued built development, containing

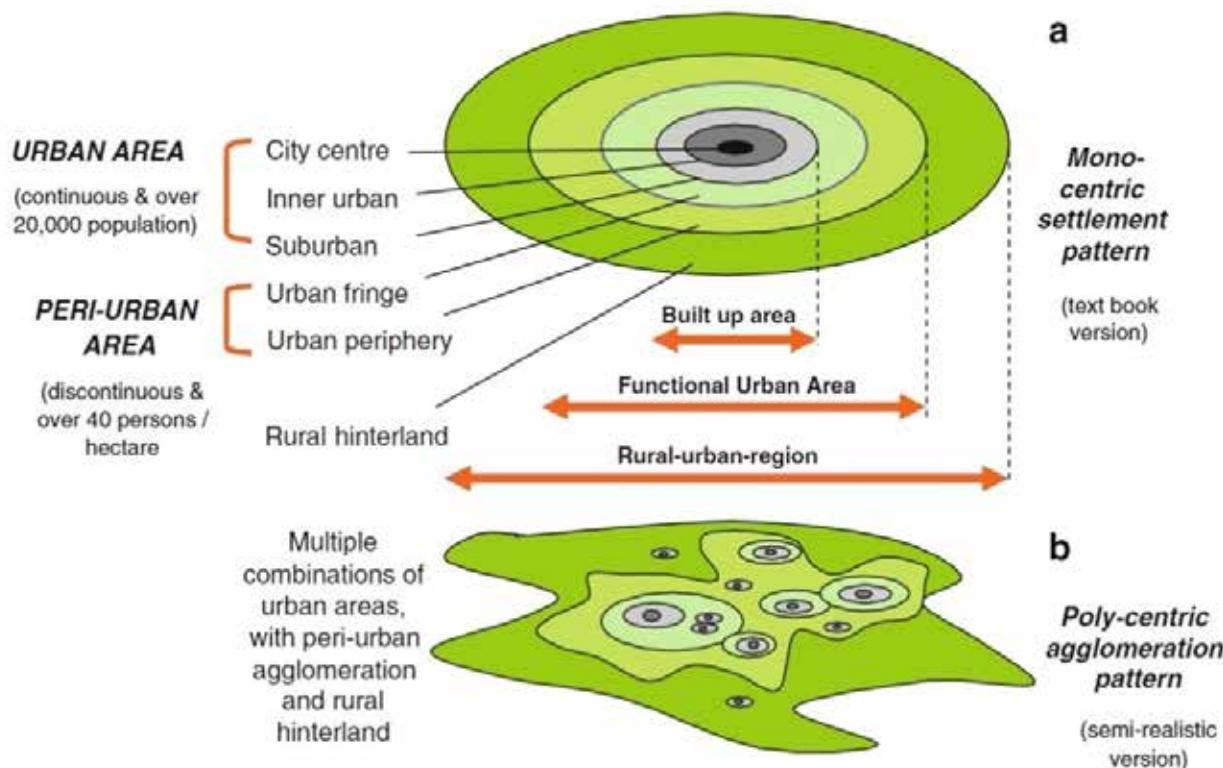


Fig. 2. Concepts of peri-urban and rural-urban-region in PLUREL model. Source: Ravetz et al., 2013.

settlements of each less than 20,000 people, with an average density of at least 40 persons per km².

Each of these areas types is part of a larger “urban system”. There are different concepts in use to describe urban systems with different boundary definitions - Some of them flexible, some specific. The PLUREL project focuses on two main levels:

- functional urban area (FUA): an urban core and surrounding area that is economically integrated with the center. For example, the local labor market. Belonging to a commuter catchment area, FUAs represent common local labor and housing markets ([Nordregio, 2015](#)). This overlap with the statistical unit of the larger urban zone, as used in the European urban audit.
- Rural-Urban-Region (RUR): Spatial clusters of three interrelated regional sub-systems – the urban core, the peri-urban surroundings and the rural hinterland. Areas of recreational use, food supply and nature conservation located in predominantly rural areas are also part of the rural–urban-region.

Rural–Urban-Regions was the overall territorial unit of analysis for the PLUREL project. They include both the “functional urban area” (zone of daily commuting) and the surrounding rural hinterland. For modeling and analysis, PLUREL defined rural–urban-regions in statistical terms but in policy (and indeed in practical) terms, the boundaries are necessarily more flexible, to respond to changing problems and opportunities.

[Fig. 2](#) shows two interpretations of this design. The upper image shows a simple text-book version of a single-core settlement pattern, surrounded by interlocking circles. The lower image gives us a slightly more realistic interpretation. This shows a poly-centric agglomeration of settlement with different sizes and patterns, surrounded by a rural hinterland with a complex boundary. In the poly-centric version, the peri-urban areas are not only surrounding the urban, but they also become a geographical type and territory of their own and the reality on the ground is often complex and fast

changing. FUAs overlap and merge to form urban agglomeration, existing settlements change their shape and function and in larger FUAs there are many areas combined with a combination of infrastructure, housing, industry, open space and land in transition – a challenge for any kind of definition.

In each of these examples, similar questions arise, in particular, that the conventional measure of radial commuting patterns is only one of a range of factors in urban-rural relationships and fields of influence. This is why the “rural-urban-region” is important and topical, but also challenging for analysis.

Perhaps most importantly, urban sprawl is often seen as a pattern of lower-density, inefficient or wasted, vehicle-dependent and the like. This raises many questions: Which scale or spatial unit is to be counted? Can an airport or industrial complex be introduced as a form of urban sprawl or scattered urban sprawl, or is it considered economic development? Or both? There is, of course, a more technical definition in which the following eight criteria are considered: density, continuity, concentration, clustering, centrality, nucleus, mixed uses and proximity (Galster et al., 2001, 681-717).

Simply put, we can use two definitions for spatial dispersal: increasingly unplanned urban development, with features such as the low density of mixed uses in suburban areas (EEA, 2016) and also low density, scattered and urban development, without systematic public land use planning Large-scale or regional (Brueggemann, 2008, 18; Reckien & Karecha, 2007). Such definitions can be examined in more detail as key factors in urban waste management, as discussed above.

• The megalopolis and metropolis of peri-urban

The concept of “rural-urban-region” is a broader picture of growth and change in human habitats. This process begins with the independent expansion of cities within their rural hinterland, in fact, the absorption of rural into the urban context. In some cases, if these independent cities are significantly closer together, a regional aggregation process will occur. If the aggregation process increases,

it could lead to the creation of an “extended metropolitan region” or “megalopolis region” with a population of over 10 million, which includes a variety of peri-urban areas, rural areas, or the whole rural-urban-regions.

“Mumford” describes a megalopolis (also known as a “megacity”, “megapolis” or “mega-city-region”) as a collection of neighboring metropolitan areas. “Gottmann” uses the term to describe the continuous urbanization of the northeastern coast of the United States. Such thinking was used to express “Ekistics”, the science of human settlements, a series of scales including a metropolis with a population of 4 million, a small metropolis with a population of 25 million and a metropolis with a population of 150 million (cited in Lacquian, 2015).

The role of peri-urban and rural hinterland in these cases may be different from the usual European situation. In the pattern of the Asian megalopolis, the focus is on the rapid transition from peasant agriculture to the pattern of global economic development. In contrast, in the North American model, the focus is on the city-edge as a new type of CBD (Central Business District) and the rural as an area of investment and opportunity. The peri-urban and rural hinterland are not uncommon here, but they are highly dependent on urban areas and intertwined with it (Jones & Douglass, 2008).

Research method

The method used in this study is descriptive-analytical. It is also applied-developmental in terms of purpose. This article focuses on peri-urban and its management structure on a spatial scale. On the other hand, its purpose is not to test a theory and therefore to a hypothesis, but to develop a theory with an emphasis on context. In this approach, based on the research conducted and considering the effective global experiences; type and mechanisms of review and intervention in peri-urban areas and the management structure and related issues should be recognized and evaluated. In this method, by analyzing and evaluating the obtained results, an attempt will be made to examine

theoretical perspectives about peri-urban areas and then to introduce the proposed approach in its management and spatial structure.

Executive steps of research

In recent decades, the studies of peri-urban and peri-urbanization have gained more momentum. PLUREL is one of the projects that has conducted a comprehensive study of peri-urban and its related concepts. PLUREL is a project carried out with the participation of 35 institutions from 14 European countries and China from 2007 to 2013 in collaboration with the University of Copenhagen. The project is part of an integrated project funded by the European Union under the title "Sustainable Development, Global Change and the Ecosystem" and is part of a centralized executive program. In the report "Peri-urban in Europe: Towards Integrated Policies for Sustainable Urban-Rural Future" related to the project, a five-dimensional scenario has been used to describe the mechanism of peri-urbanization, which is discussed in this study. It is noteworthy that these scenarios are designed and considered for the years 2025-2050 ([Nilsson et al. 2013](#)).

To examine the dynamics of peri-urban changes and the process of peri-urban settlement, we must pay more attention not only to the physical scale but also to the complexity of the system. This is not only an academic issue, but also a practical one for urban planning decision makers and policymakers who need to better understand it. A "5-dimensional" framework developed for PLUREL research and an overview of the theoretical foundations or literature of the subject was selected as the research method. By adopting this method, it will be possible to find practical methods to identify a complex situation and identify the main processes that affect this issue in different degrees.

These five aspects also show an overview of how peri-urbanization settlement occurs. The first aspect is to identify as where urban expansion occurs as a direct result of population growth and the demand for space and economic demand. The

next aspect, as cities expand, is the formation of regional gatherings and gradual changes in economies of scale and a new kind of development of the peri-urban territory. Thirdly, underlying these developments are the effects of various deeper political and cultural forces which shape the peri-urban territory. The fourth factor is where the whole urban system can go through rapid transitions, with radical change and restructuring. The final aspect concerns policy responses to these changes and transitions which often feedback into the mix and become "dynamics" themselves. In practice, the situation is rarely clear or simple and each aspect will overlap and inter-connect with the others. Below we examine the main features of each of these five aspects as research findings.

Research findings

• Direct factors of urban expansion to peri-urban

In simple terms, Peri-urban changes are a direct result of the expansion of the city and the peri-urban area extends to rural areas. This is primarily the result of economic growth and population growth, which leads to demand for housing and commercial areas. The location of housing is determined in part by transport accessibility to employment and services and in part by the attractiveness of the environment as well as land values. There are usually physical and policy constraints to the development and each interacts with the rest and any questions that arise, e.g. how do the physical and political constraints affect? What motivates the growth of demand for land and buildings and the possibility of development? ([Fig. 3](#)). The following sections identify a number of these stimuli:

Cognitive and social dynamics are driven by population change factors resulting from fertility rates, mortality and migration. Since mortality and fertility have changed relatively slowly, several very diverse demographic indicators have emerged over the decades. Intra-regional and international migration flows are more influential and dependent

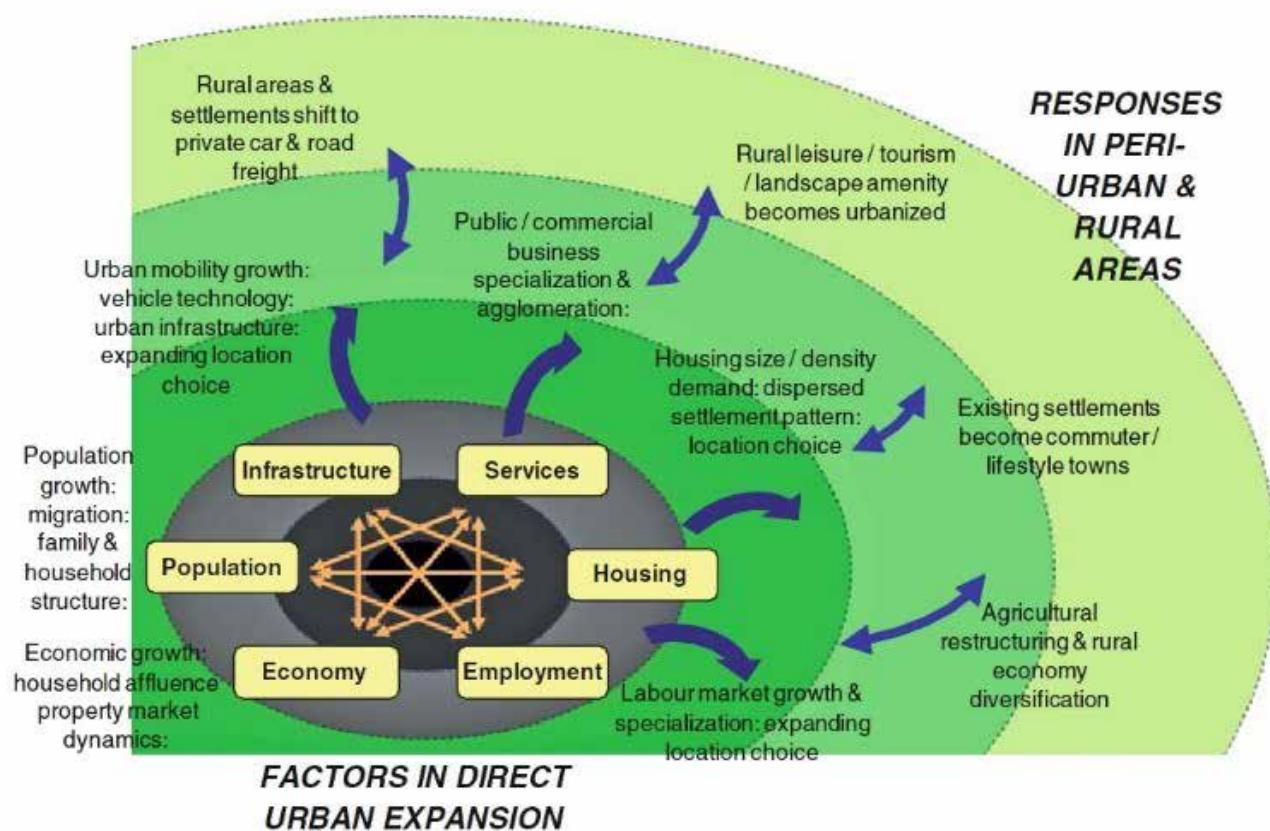


Fig 3. Dynamics of the peri-urban: Urban expansion. Source: Ravetz et al., 2013.

on political factors and global economic fluctuations than other factors (Zasada et al., 2010, 125-141).

Also, the steady decline in the average household size (for example, population aging) has affected housing demand. Rural-urban migration (external or internal) depends on spatial policies, relative attractions of cities or rural areas for work, quality of life, as well as transportation and communications (Loibl & Bell, 2011, 50-55).

Economic growth and employment raise the rate of urbanization. The rate of deposit and capital investment feeds into the expansion of the building stock and land-use conversion, as both a supply-side push factor of production and a demand-side pull by consumers. Also, economic structures and employment patterns affect the trends of peri-urbanization. For example, if telecommuting becomes more common for the service sector, business technology will not only affect employment but also supply chain, logistics,

distribution of goods, services and consumption (Korcelli, Kozubek & Piiorr, 2011).

Showing direct factors in urban development, as typically used in urban and regional modeling together with responses and counter-effects in rural and peri-urban areas are shown in Fig. 3.

Environmental constraints and dynamics include constant geographical features such as rivers, beaches, wetlands, or mountains that form the pattern of urban development. Beyond that is a wide range of dynamic factors that are more complex to analyze. Local climate factors, such as the impact of urban heat islands, may make living conditions in urban areas more difficult in the summer and may affect, for example, sea level or flooding. Therefore, several urban environments may be more unpleasant and unsuitable for living, which encourages people to migrate abroad. Meanwhile, Increases are sealed surfaces in larger urban territories that will affect local hydrological

systems, necessitating better water resources and flood management which in turn are likely to put pressure on peri-urban development such as to maintain open flood storage areas along the edges of rivers. Also, there may be pressure on peri-urban land use for the production of biomass and other forms of renewable energy ([Zasada & Berges, 2011, 72-75](#)).

The infrastructure and structure of urban construction are the physical components of the city. The space required for living and working per person, the level of occupation of land use in the floor space, are the primary determinants, especially when considering the size of the household. After that, the housing investment model, the housing form, social services, housing density and morphology are each necessary for the growth and development pattern of the city. Transportation and communications are other key factors that, as infrastructure, can encourage or curb rural/urban migration, reverse urbanization, or re-urbanization. Transportation is not only a matter of direct expansion but also a systematic shift from a radial pattern of public-centered transportation to a motor-centric highway network model ([Ristimaki, 2011, 61-64](#)).

Analysis of findings

• Regional and rural-urban connections

The overall urban expansion plan described above is not just a simple one-way process. Rather, it creates reactions and changes around peri-urban and rural areas. This is not just a reaction on a local scale, but also includes a regional and intra-urban scale to further reshape spatial relations. These rural and peri-urban reactions are important feedback loops that can lead to fundamental changes in peri-urban all times.

As the urban markets and peri-urban “shadows” expand, there comes a point where the agglomeration effect takes over in economic-financial terms, in labor markets, shopping markets and housing location choices. Rural economic regeneration processes, land market changes, as well as the modernization of agriculture, can lead to a faster shift toward urbanization. To gain access to larger consumer

markets as well as the labor market, there are specific incentives to create new business parks, shopping malls and airport areas to find new places to serve more people (not just in the country but between major cities).

As a result, peri-urban separated areas can provide interconnecting spaces, forming continuous, functional, low-density zones, which provide for most living/working/shopping needs for the majority of suburban or car-based residents. This intercity or regional gathering is not a homogeneous space, but rather like a diverse territory shaped by many types of land use relationships:

- Urban to peri-urban links: The links include urban demands and pressure on the suburbs and the peri-urban surroundings, space for housing, business and infrastructure. In other words, peri-urban requires urban markets, services and innovation;
- Peri-urban to rural: They include the relationship between people landscapes, under effective economic-functional conditions such as water, food, minerals, or tourism, as well as services that are often socio-cultural, such as aesthetics, adaptability, welfare and cultural identity. In other words, they affect the impact of employment relationships, investment and access to services;
- Between peri-urban communities: There are also relationships, the potential for socio-economic development within settlements and between peri-urban zone.

This view extends “ecosystem services” to “services, communications, functions and values” for integrated rural-urban-regional development policy ([Ravetz et al., 2013, 13-44](#)):

Management of such relationships is at the heart of the “Integrated Development for Land Cohesion in rural-urban-region” program ([ibid.](#)). It is a comprehensive sustainable development program that aims to identify environmental practices, socio-economic services, between different areas to identify their values, monetary or otherwise and then to construct spatially-based policies for obtaining the best balance of services and values. That is to say,

irregular and scattered urban sprawl and unplanned gatherings to promote territorial cohesion within and between rural-urban-regions can be improved by establishing such relations (Fig. 4 & Table 5) (CEC, 2008).

• Global or local and dynamic structure

Behind the physical processes of expansion are powerful social, economic and political forces at

work. The first of these is globalization, exerting economic effects on the structure of business and finance, political effects on the urban hierarchy and cultural effects through the media and information and communication technology. There is also a reverse process of localization, in which the cultural identities of people and space are being recreated in new ways. The liberalization

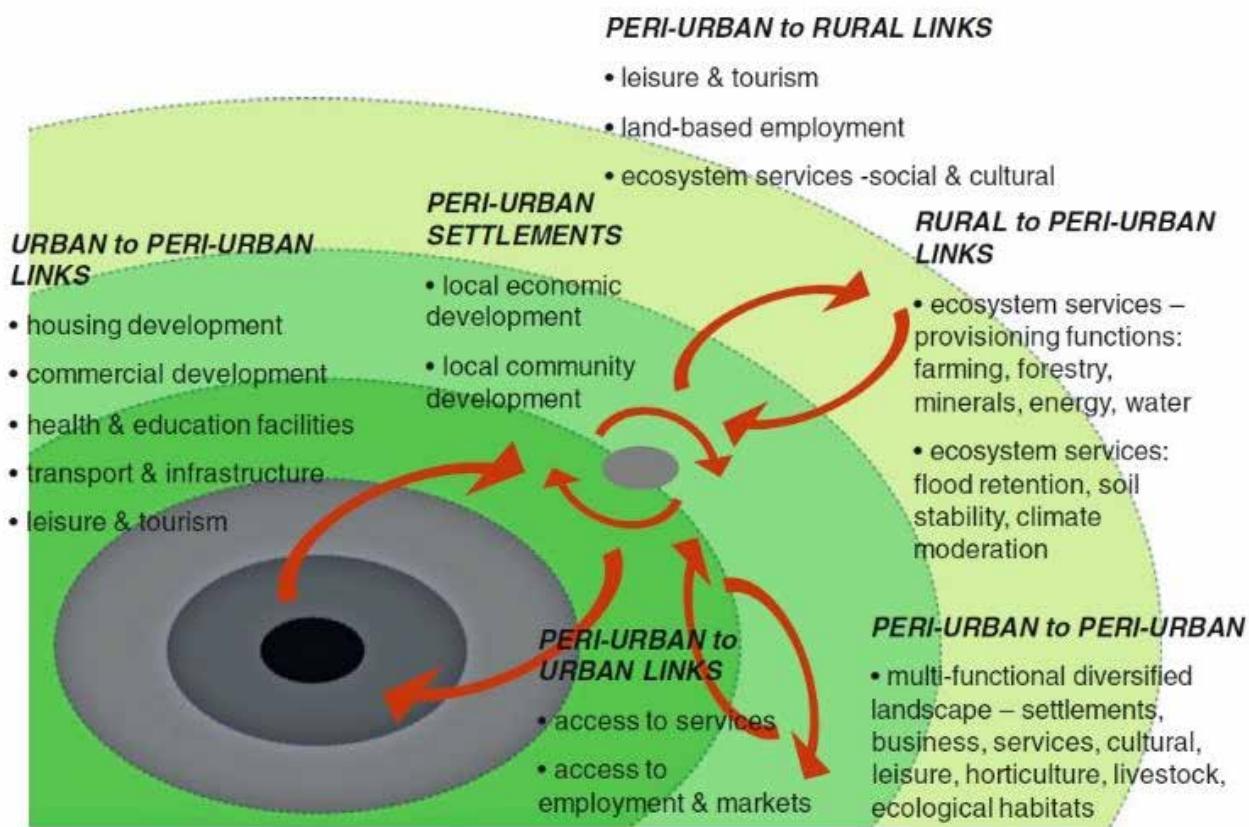


Fig. 4. Peri-urban dynamics: Links and aggregations. Source: Ravetz et al., 2013.

Table 5. Regional aggregation factors and urban-rural links. Source: authors.

Urban to peri-urban relations	Peri-urban to Urban relations	Peri-urban to peri-urban relations	Peri-urban to rural relations	Rural to peri-urban relations
<ul style="list-style-type: none"> - Housing development - Commercial development - Educational and health facilities - Transportation and infrastructure - Leisure and tourism 	<ul style="list-style-type: none"> - Access to services - Access to employment and the market 	<ul style="list-style-type: none"> - Multifunctional and diversified: - Landscapes -Settlements - Business - Cultural Services - free time - Horticulture and animal husbandry - Environmental habitats 	<ul style="list-style-type: none"> - Leisure and tourism - Land-based employment - Ecosystem services - Social and cultural services 	<ul style="list-style-type: none"> - Ecosystem services through: - Supply of agriculture - forestry - Minerals - Energy - Water - Environmental services: - Flood control - Soil stability - Climate adjustment

process includes privatization of premiums and reimbursement of costs, which has far-reaching effects on urban governance and public services. At the same time, the culture of consumption affects the identity and understanding of peri-urban places through leisure, tourism and other spatial decisions. The conflict between danger and security is a powerful place and space. To be safe, a wealthy person may even look for places of gathering away from urban centers in a peri-urban archipelago ([Borsdorf & Salet, 2007, 1-12](#)).

All these start with very topical questions; What is the peri-urban landscape for and who should decide? Who is responsible for the benefits or costs of investing or re-creating? Whose land is it and why? Much of peri-urban is open to a wide range of possible uses such as Tourism, expensive housing, business premises, agriculture, environmental protection, flood reduction or production and distribution of goods and energy. There are economic, ecological, historical and residential aspects in competition with each other and many of the critics of sprawl are the more affluent peri-urban residents, seeking to maintain their quality of life by limiting further development which might affect their environment negatively [Table 6](#).

We can also see peri-urban as a place for dependence and colonization: in addition to power stations and landfills, there are low-income housing services for workers and the underprivileged or public housing in “peripheral estates” ([Davis, 2015](#)). There is also a discussion about peri-urban as the capital of capitalism: the promotion of these areas by investors in scientific and commercial parks with a background of green fields and high-speed road transport to airports. On the other hand, many various illegal or informal activities, such as the trading of securities machines, are formed by farmers, either by dumping illegal waste in the forest or by holding free festivals in these areas ([Farley & Roberts, 2011](#)).

The ‘urban archipelago’ concept sees this in terms of a series of increasingly disconnected islands of wealthier and poorer populations, another

phase in the so-called “splintering” of cities ([Borsdorf & Salet, 2007, 1-12](#)).

By contrast, a “spatial ecology” perspective sees a peri-urban territory with many types of relationships and connections (although not all are positive). A diversity of typical peri-urban land uses and locations is shown in [Fig. 5](#), as a “spatial ecology” ([Ravetz, 2011a, 114-123](#)). There are also counter forces of localization when commuters seek “fields at the end of the garden”, or citizens participate in new forms of local enterprise. The result can be a diversification of land uses and enterprises; it can also be the personal benefit of those living there already.

• Confusion, transition and resilience of the Urban

Each of the factors such as; urban expansion, regional aggregation and structural effects can work together to enhance change processes. The result is not always predictable and simple, but maybe a rapid transition, a “discontinuity”, or in some cases a catastrophic failure. Developments and transitions are a range of changes that can include economic systems, social structures, political systems, spatial patterns, technology and infrastructure systems ([Geels, 2005](#)). There are often parallel transitions in socio-cultural roles, identities, perceptions and the city’s “reason for being” a common question in many cities that no longer retain their original function industrially, economically, or politically. This is not only a physical and functional transition, but one of overall role and identity as areas evolve from a supporting role as a commuter suburb to a fully functioning low-density urban system a post

Table 6. Structural factors that shape the distribution of locations and activities. Source: authors.

Locally	Globally
Localization movements	Globalization movements
Focus on the private sector	Focus on the public sector

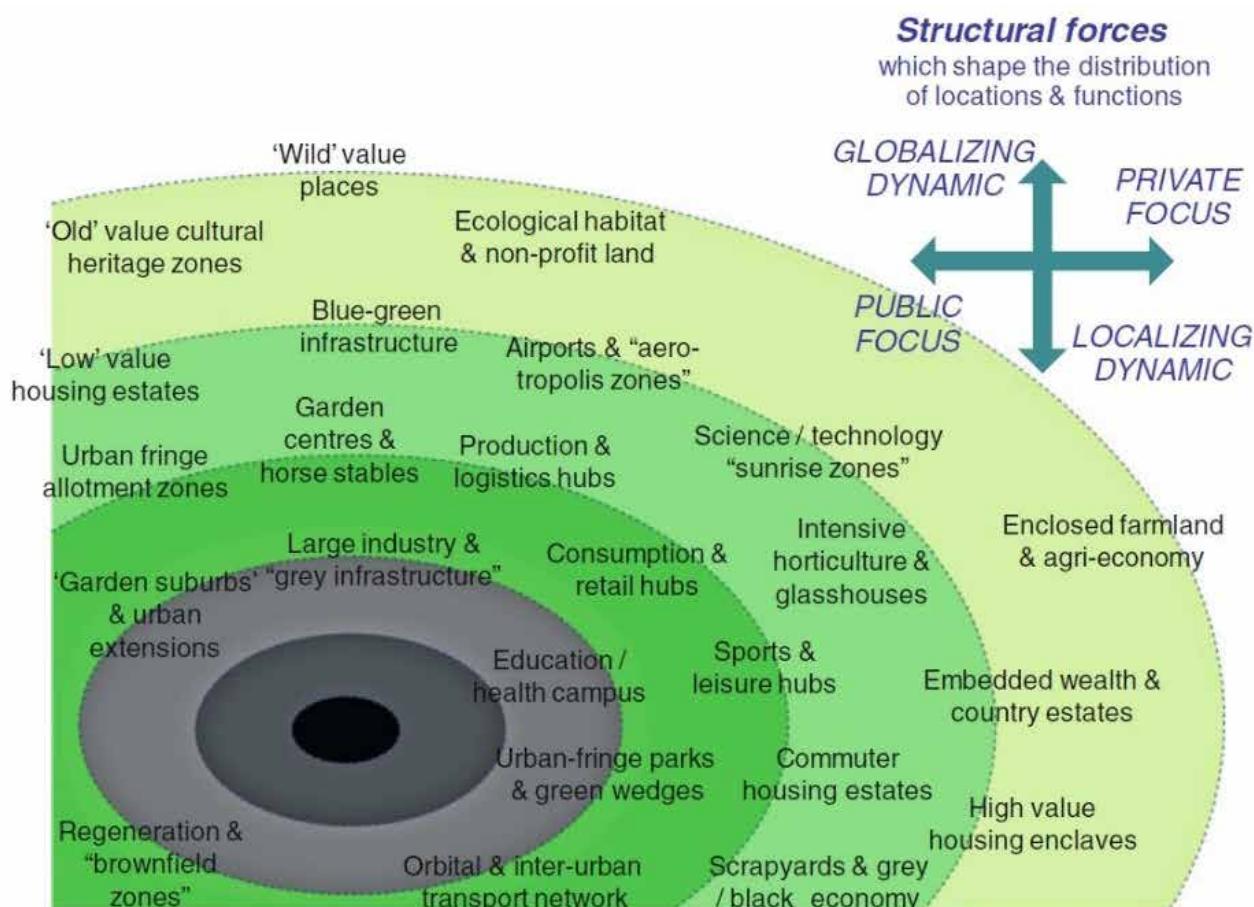


Fig. 5. Dynamics of the peri-urban: Global-localization and its structure in the peri-urbanization process. Source: Ravetz et al., 2013.

metropolis or metro-scape (Krafczyk, 2004). Some of the common transitions are as follows:

- Rural transition: away from primarily agricultural production towards a more diverse multi-functional landscape and settlement pattern;
- Peri-urban transition: restructuring for globalized systems of production and consumption;
- Urban transition: restructuring towards a networked economy with different patterns of green/ grey infrastructure.

The effects of each of these transitions can occur at very small, medium, or massive levels, from a range of individual locations to entire urban systems (De Roo & Silva, 2010). Then each of them creates a kind of system that they are influenced. Sometimes there is a negative reaction and resistance, while in others there are positive responses, to build resilience

to shocks, or creative innovation for new roles in a new environment. Such reactions may serve as a goal or policy. For example, a common reaction to economic change and transformation in rural areas can be seen in the goals of rural development policy for a variety of new business skills and models. A wide range of reactions focused on economic planning, social governance, or spatial diagramming has been shown in the form of circles that reflect the overlap of political interests between multiple goals [Table 7](#).

Within such interconnected cities, there are self-organized patterns of individuals, households, corporations and other economic, social, political and cultural units. Overall, a complex human adaptation system (as opposed to a biological one) aims to build capacity for collective wisdom and

social education with a focus on shared intelligence that brings strategic thinking and creative innovation (Ravetz, 2011b, 85-94).

• Spatial governance and policy responses

The final piece in this framework concerns the responses of policy, spatial planning and governance system itself. These come to solve problems, but they can also become part of the problem which they aim to solve. Beneath the surface, the role of policy is often to try to turn the “problems” of transition and restructuring into “opportunities”. The systemic responses to transitions building resilience, adaptive capacity, shared intelligence, etc. then become the objectives of the policy, which again becomes part

of the system to be addressed. An example is the Green Belt policy in the UK, seen as successful in its objective of solving one problem – preventing sprawl – by urban containment: but also shaping or distorting the land and property market and so generating other problems. In some cases, these second-order problems of vacant or neglected land then become the objective of further layers of policy and so on.

There are questions concerning the overall scope and effects of spatial governance (the system of the territorial government, spatial planning and policy system). The main factors in direct urban expansion, with alternative modes of spatial governance Table 8 are:

- Low or high land intensity: for example, the amount

Table 7. Factors affecting the development, entanglement, evolution and resilience of cities. Source: authors.

Population	Housing	Economy	Infrastructure	Services	Job search
<ul style="list-style-type: none"> - Population growth - Migration - Family and its structure 	<ul style="list-style-type: none"> - Housing size - Density demand - Scattered habitat pattern - Select location 	<ul style="list-style-type: none"> - Economic growth - High level of family welfare - Real estate market dynamics 	<ul style="list-style-type: none"> - Growth of urban mobility - Car technology - Urban infrastructure - The scope of site selection 	<ul style="list-style-type: none"> - High accumulation - Public Service - Commercial uses - Specialized services 	<ul style="list-style-type: none"> - Growth and development of the labor market - Specialization - The scope of site selection

Table 8. A combination of the effects of governance, growth and expansion on urban areas. Source: authors.

	Strong spatial governance	Partial spatial governance	Weak spatial governance
Urban Growth and expansion: (Population and space for each person)	High multicenter growth “City Social Zone” Model (Low density)	Planned density by applying blockade	High urban sprawl growth (Low density)
Urban growth: (population)	Poly-centric “City Social Zone” Model (Higher density)	Planned higher density constraints	Urban sprawl (Higher density)
Urban expansion: (Space for each person)	Poly-centric “City Social Zone” Model (Low density)	Lower density concentrations are programmed	Urban sprawl (Lower density)
Urban stability	Compact city and control of urban development	Urban restructuring in terms of spatial coverage	Low growth in particular or stagnation
Urban shrinkage	Scheduled transition Focusing on green infrastructure	Growth in selected areas / By enclosing and reducing enclosures	Reduction of urban clutter With empty and abandoned buildings and grounds

of land area required per unit of housing or business. This factor can be further analyzed in terms of economic intensity (in terms of value or production) or social intensity (according to welfare criteria). It is also important to pay attention to the intensity of environmental use, where the urban system is in demand for ecosystem services, materials, waste management, leisure and amenities. It is commonly assumed that the intensity of land use is on a path of growth and development that is similar to GDP in the economy. In modeling the relevant scenario, it is assumed that the intensity of land use (intensity of use) is correlated with economic growth and investment;

- Weak or strong spatial governance: This variable of planning includes active and coordinated spatial governance in the public interest to guide short-term investment and private interest.

There is also a set of analyses that show the various effects of population growth and land use growth is weak or strong regimes. It also demonstrates a third category, namely, partial governance to describe governments that are fragmented, or stronger for social groups and also includes urban contraction, which is the dominant approach in many older cities. Previous analyses raise questions about the overall goals of policymakers and, in general, sustainable development. In principle, sustainable development combines economic, social and environmental pillars or goals, to be achieved both locally and globally and in both the short and longer-term. One view is to look at the European policy of land cohesion and the consequences of urban/rural policies and national/ regional/ local planning ([Duhr, Colomb & Nadin, 2009](#)). Another view is to discover “sustainability tension” between rural/ urban competition and conservation/ development programs ([Ravetz, 2000; CURE, 2003](#)):

- Urban development: a growth and modernization perspective;
- Urban conservation: a containment and regeneration perspective;
- Rural development: more local, rural-focused enterprise;

- Rural conservation: an environmental protection approach.

With the conditions and features mentioned, the urban and the urban fringe, the rural and its territory are considered separately from each other and the institutions involved in peri-urban management follow the divisions that govern the system and increase the existing unrest. The impact of the capital on the performance of the suburban areas, as well as determining the role and performance of the suburban areas in the upstream projects are among the most important components that are important in the growth and expansion of the suburban areas. For example, industrial investments around the capital of Tehran and the expansion of factories and the projection of activities to the surrounding areas have been effective in the performance of Peri-urban areas, including Islamshahr. Islamshahr had an agricultural role before 1976 and its transformation into a city, but from this time onwards, the role and function of this city changed completely and the active population of this city was more engaged in industries and workshops built around Tehran. Besides, with the transition of this area into an urban; New needs were formed, which in turn led to the creation of new service jobs ([Abdollahi, 2007, 72](#)).

In general, the location, characteristics and features related to the processes of creation, growth and development of peri-urban areas, whether next to metropolitan areas or along with rural areas, can be described from the perspective of urban planning as described in [Table 9](#).

Therefore, it can be concluded that Peri-urban areas are affected by metropolises and vice versa. Some of the factors associated with peri-urbanization include Government policies and local governments, increasing the presence of some large domestic and foreign investment companies, land and housing regulations, private firms. The lives of the residents of Peri-urban are tied to them. A look at the situation in the Peri-urban area around the world shows that most of the Peri-urban areas have a

Table 9. Concepts related to growth processes and residential forms in peri-urban areas. Source: authors.

location	Specifications and features
Demographic and social forces, economic growth and employment, environmental stimuli, investment flows and ...	Regional accumulations and urban-rural links
Structural and global-local forces	Pressure on natural resources and environmental degradation
Change land use pattern, land hoarding	Heterogeneous mosaic of agricultural, urban and rural systems
- Adjacent areas of the edge of the urban area and the area that extends from the edge of the urban to the rural hinterland.	Changing the economic structure, changing from an economy based on agriculture to a factory and workshop economy, and changing the structure of employment from agriculture to industrial production
- Located within the range of round trips to reach employment centers	A kind of multifunctional territory
- The transition zone between the urban and the surrounding areas	Rapid social and economic changes
Urban-rural residential pattern and sometimes neither urban nor rural	Consideration of Peri-urban as a suburb and around the city, also as a socio-economic system and interaction of rural-urban currents; from an institutional perspective.

scattered landscape, which is also reflected in land use and socio-economic inequality. In other words, the suburban areas sometimes take neither urban nor rural features and carry the names of "neither urban nor rural" areas, which is the case with the suburban areas of Iran and the metropolitan areas. It has more consistency and adaptability that deserve special attention.

Conclusion

Peri-urbanization can be considered in the interaction between the mentioned competitive aspects. In a dynamic "Rural-Urban-Region", each of these aspects evolves and can be shaped by spatial governance processes, the result of which can be complex and interdependent. There are fundamental questions about the degree to which an urban system is sustainable when it comes to trusting resources from outside its territory. This means that it is difficult to consider an urban area alone as a unit of sustainability and this is a fact that must be considered by all urban planners and officials.

This article has shown that Peri-urban is the intermediate between the definition of urban and

rural. Its nature is not completely clear and the result is a combination of different forces on different scales. It is often described as a broadcaster, ranging from rural to urban areas and a direct result of urban development and expansion. However, there are other levels of understanding the dynamics of change, such as the process of regional aggregation, the structural effects of globalization and the accumulation of capital, developments and the effects of intertwining and feedback and the collective wisdom of countries' politics and governance. In summary, these developments in the central city, which occur in a new type of territory outside the urban cores, can be summed up in the term Peri-Urbanization.

In the findings analysis section, peri-urban was examined and analyzed from four perspectives: A) review of regional gatherings and urban-rural links; B) Global-local effects and the dynamic structure of each; C) Factors affecting development, entanglement, urban transition and resilience; D) Spatial governance and political reactions in peri-urban areas.

Therefore, as mentioned above, it is quite clear that Peri-Urban is a current and challenging issue in

many respects, especially a challenge in the scientific research of urban planning. There are many human and physical interactions and processes for analysis and modeling and in reality, they are interdependent, uncertain and complex. Analysis and modeling tools do not yet exist to fully describe Peri-urban., So we need to create useful definitions and evidence and signs for it. The purpose of this study was to determine the perspective for the whole subject under study, namely peri-urbanization. The issues raised as a basis for urban development can be used as a means to expand and test the strategic thinking of planners and policymakers in each urban area. In this study, the Peri-urban environment was focused on the urban-rural area and how development in such areas can be considered, which can provide the next necessary step for further research in this field.

For the final achievement of this research, it should be considered that today more than ever, the fate of sustainable development of cities and metropolises, which is the subject of planning and urban planning in the country, depends on peri-urban areas. Nowadays, the Peri-urban areas are considered a reality in the present millennium that needs special attention. The stability and instability of these areas tied to the process of management and decision-making, the patterns of managing affairs and the actors in this area.

Reference list

- Abdi, N., Zanganeh Shahraki, S., Marsousi, N. & Rostami, Sh. (2016). Human factors affecting urban sprawl in Sanandaj (1976-2015) with emphasis on informal settlements and peri-urban villages. *Rural Research*, 7(3), 564-580.
- Abdollahi, T. (2007). *Analysis of Islamshahr's physical development process in the last four decades*. (Master's thesis), Faculty of Geography; University of Tehran, Iran.
- Afrakhteh, H. & Hajipour, M. (2017). *Garbage economy in Peri-urban villages south of Tehran*. *Space Economy & Rural Development*, 6(4), 47-72.
- Afrakhteh, H. & Khodaei, B. A. (2011). Organizing tourism in Peri-urban promenades in line with environmental tolerance capacity. *Applied Researches in Geographical Sciences*, 11(20), 69-88.
- Ahmadi, M., Azizi, Sh. & Faeghi, Nikoo. (2018). Analysis of the effects of rural-urban links on physical-spatial transformations in the urban peripheral areas (Case: Mahmoudabad and Atashgah settlements around Karaj city). *Urban Peripheral Development*, 1(2), 95-105.
- Alipour, H., Barari, M. & Sobhani, N. (2019). Reflection of the expansion of the second houses in the urban areas of Mazandaran province. *Urban Peripheral Development*, 1(2), 47-58.
- Amini, S., Rahmani, B. & Majidi Khameneh, B. (2017). Economic consequences of land use changes in peri-urban villages, case: villages of Jei in Isfahan City. *Space Economy & Rural Developmen*, 6(2), 17-40.
- Anabestani, A. A., Mozaffari, Z. & Peyvand, A. (2019). Evaluation of local community attitudes towards neighborhoods with peri-urban promenade complexes, case study: Baghroud Neyshabur tourism complex. *Urban Peripheral Development*, 1(2), 121-136.
- Angel, S., Sheppard, S. C. & Civco, D. L. (2015). *The Dynamics of Global Urban Expansion*. Washington, DC: World Bank, Transport, Urban Development Department.
- Ashenaei, T. (2013). *Analysis of the consequences of growth guidance and control policies on the process of urbanization in the metropolitan of Tehran*. (Master's thesis). Faculty of Architecture and Urban Planning, University of Science and Technology, Tehran, Iran.
- Babaei, M., Basiri Tochaei, M. & Badragheghad, A. (2018). Repopulation analysis and socioeconomic transformation of urban peripheral villages in Urmia. *Urban Peripheral Development*, 1(1), 139-150.
- Bengs, C. & Schmidt-Thome, K. (2006). *Urban-Rural relations in Europe* (Final report, ESPON). Retrieved from <https://www.espon.eu/programme/projects/espon-2006/thematic-projects/urban-rural-relations-europe>
- Bertrand, N. (2007). Introduction: ESDP ideals and the inheritance of rural planning failures. In N. Bertrand & V. Kreibich (Eds.), *Europe's City-Regions Competitiveness: Growth Regulation and Peri-Urban Land Management* (pp. 1-35). Assen: Van Gorcum.
- Borsdorf, A. & Salet, W. (2007). Spatial reconfiguration and problems of governance in urban regions of Europe. An introduction to the BelGeo issue on advanced service sectors in European urban regions. *BelGeo*, (1), 1-12.
- Briquel, V. & Collicard, J. J. (2015). Diversity in the rural hinterlands of European cities. In K. Hoggart (Ed.), *The City's Hinterland-Dynamism and Divergence in Europe's Peri-Urban*

- Territories* (pp. 19-40). Aldershot: Ashgate.
- Bruegmann, R. (2008). *Sprawl: a Compact History*. Chicago: University of Chicago Press.
 - Caruso, G. (2015). *Perin: the situation in Europe. a bibliographical note and survey of studies in the Netherlands, Belgium, Great Britain, Germany, Italy and the Nordic countries-urbanisatio*. Retrieved from https://orbilu.uni.lu/bitstream/10993/10153/1/Caruso_PerUrbanEuropeDATAR.pdf
 - CEC (Commission of the European Communities) (2008). Green paper on territorial cohesion: Turning territorial diversity into strength. Retrieved from <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0616:FIN:EN:PDF>
 - CEMAT. (2007). *Spatial development glossary*. Retrieved from <http://www.ecpt-ceu.eu/images/stories/Glossary-CEMAT/Glossary-English.pdf>
 - CURE (Centre for Urban and Regional Ecology) (2003). *Sustainable development in the countryside around towns* (Report TX 171). Retrieved from https://sustainabledevelopment.un.org/content/documents/11292101_alt.pdf
 - Daneshpour, Z. (2006). Analysing spatial inequalities in peri-urban environments: applying the strategic environmental planning and management in (sepm) Tehran. *Honar-Ha-Ye Ziba*, (28), 5-14
 - Davis, M. (2015). *Planet of Slums*. London: Verso.
 - De Roo, G. & Silva, E. A. (2010). *A Planners Encounter with Complexity*. Aldershot Ashgate.
 - Duhr, S., Colomb, C. & Nadin, V. (2009). *European Spatial Planning and Territorial Cooperation*. Oxford: Routledge.
 - EEA (European Environment Agency) (2016). *Urban sprawl in Europe: the ignored challenge*. Retrieved from <https://www.eea.europa.eu/publications/urban-sprawl-in-europe/download>
 - Esmaeilzadeh, H., Salehpour, Sh., Ghasemian, Z. & Mazaheri, A. (2018). Identification of effective factors creating space in periphery of cities, case study: Urmia City. *Geographical Urban Planning Research*, 6(1), 23-54.
 - Farley, P. & Roberts, M. S. (2011). *Edgelands, Journeys into England's True Wilderness*. London: Jonathan Cape.
 - Fassihii, H. (2018). Analysis of the role of metropolises in the economic structure of peri-urban villages, case: Golhesar village in Rey city. *Space Economy and Rural Development*, 7(2), (24) 107-126.
 - Friedmann, J. & Miller, J. (1965). The urban field. *American Institute of Planners*, 31(4), 312-320.
 - Galster, G., Hanson, R., Ratcliffe, M., Wolman, H., Coleman, S. & Freihage, J. (2001). Wrestling sprawl to the ground. Defining and measuring an elusive concept. *Housing Policy Debate*, 12(4), 681-717.
 - Geels, F. W. (2005). *Technological Transitions and System Innovation: A Coevolutionary and Sociotechnical Analysis*. Cheltenham: Edward Elgar.
 - Ghadermarzi, H. & Ahmadi, A. (2018). Analysis of the levels of development of the space economy and its spatial effects in the surrounding areas of Sanandaj, *Research and Urban Planning*, 8(31), 105-122.
 - Ghadermarzi, H. (2018). Measuring the tourist's satisfaction on the quality of services provided by environ's vacationlands, case study: Sanandaj, Abidar Park. *Urban Tourism*, 5(1), 69-82.
 - Ghadiri Masoom, M., Tahmasbi, B., Shokryani, A. & Karkhaneh, M. (2019). Analysis of rural entrepreneurship capacities in urban peripheral development, case: Eslamshahr county. *Urban Peripheral Development*, 1(2), 35-46.
 - Ghamami, M., Khatam, A. & Athari, K. (2007). *Integrated Management for Informal Settlements*. Tehran: Shahidi.
 - Ghasemi, M., Omidvar, N., Ashouri, E. & Nasimi, Z. (2017). A comparative study on the quality of life during the migration of rural communities toward suburban villages, case study: Tabadkan Dehestan in Mashhad County. *Geography and Regional Development Reseach*, 15(1), 123-149.
 - Hedayatifard, M. & Kheyroddin, R. (2017). Developing a conceptual framework for exclusive spaces in coastal pre-urban areas: coastal areas of Southern part of Caspian Sea: from Sari to Mahmoud Abad. *Town and Country Planning*, 9(2), 303-332.
 - Jansson, T., Bakker, M., Hasler, B., Helming, J., Kaae, B., Lemouel, P., Neye, S., Ortiz, R., Nielsen, T. S., Verhoog, D. & Verkerk, H. (2009). *The SIAT model chain* (SENSOR report series). Retrieved from http://tran.zalf.de/home_ip-sensor
 - Jones, G. W. & Douglass, M. (2008). *Mega-Urban Regions in Pacific Asia: Urban Dynamics in a Global Era*. Singapore: NUS Press.
 - Kamanroudi Kojouri, M., Parizadi, T. & Karami, M. (2020). The process of formation of informal settlements in periphery of Meshchein city. *Urban Peripheral Development*, 1(2), 1-14.
 - Kazemian Shirvan, Gh., Ziyaci, M., Amiri, M. & Moradi, H. (2017). Investigating micro-system management establishment of peri-urban areas, case study: Tehran Metropolis - District 22. *Urban Economics and Management*, 5(18), 41-56.
 - Khajeshahkouhi, A., Khorasani, M. A. & Tourani, A. (2013). Analysis of spatial dynamics of population in peri-urban areas: a perceptual survey. *Regional Planning*, 3(3), 219-238
 - Khani, F. & Ghanian, M. (2018). The analysis of community based strategies of Tehran's suburb tourism development, the case study of Kan-Sologhan district, *Urban Tourism*, 5(4), 121-135.

- Khorrambakh, A. A. (2017). Determination of entrepreneurship development strategies in peri-urban villages: a case study of villages around Lar City of Iran. *Village and Development*, 20(3), 65-83.
- Khorrambakh, A. A. (2018). Investigating the process of digestion of peri-urban villages in Tehran's development using GIS. *Research and Urban Planning*, 9(34), 217-228.
- Kiyaei, M. & Darvish, Y. (2019). Analysis of socio-economic sustainability of rural areas of peri-urban, case: Gomishan city. *Space Economy and Rural Development*, 8(3), 227-250.
- Korcelli, P., Kozubek, E. & Piiorr, A. (2011). Economy and employment. In A. Piiorr, J. Ravetz & I. Tosics (Eds.), *Rural-Urban Regions and Peri-Urbanisation in Europe* (pp. 45-50). Copenhagen: Academic Books Life Sciences.
- Krafczyk, D. (2004). *The Metro-Scape: a geography of the contemporary city* (Master's Thesis). Harvard University, Graduate School of Design, Cambridge.
- Lacquian, A. (2015). *Beyond Metropolis: The Planning and Governance of Asia's Mega-Urban Regions*. Washington, DC: Woodrow Wilson Center Press.
- Loibl, W. & Bell, S. (2011). Population and migration. In A. Piiorr, J. Ravetz & I. Tosics (Eds.), *Rural-Urban Regions and Peri-Urbanisation in Europe* (pp. 50-55). Copenhagen: Academic Books Life Sciences.
- Manafazar, R. & Valaei, M. (2018). Comparative analysis of inequalities in urban space and urban peripheral spaces, case: Miandoab. *Urban Peripheral Development*, 1(1), 111-128.
- McGregor, D. & Simon, D. & Thompson, D. (2006). *The Peri-Urban Interface: Approaches to Sustainable Natural and Human Resource Use*. London: Earthscan.
- Moradi, H. (2019). Analysis of entrepreneurship contexts in urban peripheral spaces development, case: Kermanshah County. *Urban Peripheral Development*, 1(2), 137-150.
- Moshiri, F. & Nikbin, A. (2019). Dealing with environmental degradation caused by urban sprawl using smart code as a new approach, case study: Qazvin City and its peri urban area. *Geography and Regional Development Research*, 16(2), 27-49.
- Nilsson, K., Pauleit, S., Bell, S., Carmen, A. & Nielsen, T. S. (Eds.), (2013). *Peri-Urban Futures: Scenarios and Models for Land-Use Change in Europe*. Berlin Heidelberg: Springer-Berlag.
- Nordregio. (2015). *Potentials for polycentric development in Europe* (Final report, ESPON). Retrieved from https://www.espon.eu/sites/default/files/attachments/fr-1.1.1_revised-full_0.pdf
- Pourtaheri, M., Roknoddin Eftekhari, M., Mehdipour Roshan, L. & anzaei, E. (2014). Assessing organic and non-organic model of rural-urban relations at surrounding villages, case study: surrounding villages of Babol City. *Research and Rural Planning*, 3(8), 25-36.
- Ravetz, J. (2000). *City-Region 2020: Integrated Planning for a Sustainable Environment*. London: Earthscan.
- Ravetz, J. (2011a). Integrated development for peri-urban territorial cohesion. In A. Piiorr, J. Ravetz & I. Tosics (Eds.), *Rural-Urban Regions and Peri-Urbanisation in Europe* (pp. 114-123). Copenhagen: Academic Books Life Sciences.
- Ravetz, J. (2011b). Peri-urban ecology: green infrastructure in the 21st century metro-scape. In I. Douglas (Ed.), *Handbook of Urban Ecology* (pp. 85-94). Oxford: Routledge.
- Ravetz, J., Fertner, C. & Nielsen, T. S. (2013). The dynamics of peri-urbanization. In K. Nilsson, S. Pauleit, S. Bell, A. Carmen & T. S. Nielsen (Eds.), *Peri-Urban Futures: Scenarios and Models for Land Use Change in Europe*. Berlin Heidelberg: Springer-Berlag.
- Reckien, D. & Karecha, J. (2007). Sprawl in European cities. The comparative background. In C. Couch, L. Leontidou & G. Petschel-Held (Eds.), *Urban Sprawl in Europe* (pp. 39-65). *Landscapes, Landuse Change and Policy*. Oxford: Blackwell.
- Ristimaki, M. (2011). Mobility and transport. In A. Piiorr, J. Ravetz & I. Tosics (Eds.), *Rural-Urban Regions and Peri-Urbanisation in Europe* (pp. 61-64). Copenhagen: Academic Books Life Sciences.
- Roumiani, A., Bahmani, A., Nazari Sheikhi, M. & Hagh Nazari, S. (2019). Spatial linkage and lifestyle of worn in peripheral settlements, case: Selseleh. *Urban Peripheral Development*, 1(2), 85-94.
- Saeidi Rad, M. & Namdarzadeh, M. (2018). Strategic analysis of improving the level of safety in peri-urban areas with emphasis on passive defense (Peri-urban area of Rudbar Qasran, metropolis of Tehran). *Police Geography*, 6(21), 115-134.
- Salehi Babamiri, Ch., Molaei Hashjin, N., Motamedi Mehr, A. & Aamar, T. (2017). Trend analysis of evolution in the socio-cultural structures of the peri-urban villages. case study: Saqqez City -Kurdistan Province. *Research and Rural Planning*, 5(16), 61-76.
- Schneider, A. & Woodcock, C. (2008). Compact, dispersed, fragmented, extensive? A comparison of urban expansion in twenty-five global cities using remotely sensed, data pattern metrics and census information. *Urban Studies*, (45), 659-692.
- Shah Hosseini, A. (2019). Indigenous knowledge in the encircle of urban peripheral villages evolutions, case: Kerend and Ferrer Villages in the Northeast of Garmas. *Urban Peripheral Development*, 1(1), 17-32.

- Shams Pouya, M. K., Tavakolinya, J. & Sarrafo, M. (2018). *Peri-Urban Sustainable Development*. Tehran: Amirkabir.
- Short, J. R., Hanlon, B. & Vicino, T. J. (2007). The decline of inner suburbs: the new suburban gothic in the United States. *Geography Compass*, 1(3), 641-656.
- Sojasi Qeydari, H. & Sadrossadat, A. (2016). Analyzing factors affecting land use change at rural areas of Mashhad's urban fringe. *Rural Research*, 6(4), 831-856.
- Tavakoli, M. & Naeimabadi, N. (2019). Urbak sprawl and land use changes in Neyshabur peripheral area. *Urban Peripheral Development*, 1(2), 151-165.
- Teaford, Jon C. (2010). *The American Suburb: The Basics*. Tehran: Arad Katab.
- Zasada, I. & Berges, R. (2011). Environment and landscape. In A. Piorr, J. Ravetz & I. Tosics (Eds.), *Rural-Urban Regions and Peri-Urbanisation in Europe* (pp. 72-75). Copenhagen: Academic Books Life Sciences.
- Zasada, I., Alves, S., Muller, F. C., Piorr, A., Berges, R. & Bell, S. (2010). International retirement migration in the Alicante region, Spain: process, spatial pattern and environmental impacts. *Environmental Planning and Management*, 53(1), 125-141.
- Zia Tavana, M. H. & Ghadermarzi, H. (2009). Land use changes in peri-urban villages in the process of landslides in Naysar and Hassanabad villages of Sanandaj. *Human Geography Research*, (68), 119-135.

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