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Original Article

Assessing the Effective Drivers of Balanced Regional Development based on Local Competitiveness (Case Study: Rural Areas of Ardabil County, Iran)

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Abstract

Purpose- Achieving balanced development and spatial justice with much emphasis on competitive advantages has been constantly the main concern among planners and policy-makers to reduce inefficiency, inequality, polarization, and fragmentation in the spatial structure of different countries. Fulfilling such goals demands the knowledge of local potentials and the way to exploit them in a correct manner. Therefore, this study aimed to identify competitive advantages and levels of living in the study area, and then assess the effective drivers of balanced regional development (BRD) based on local competitiveness using futures studies.

Design/methodology/approach- An analytical-exploratory applied method was used to reflect on the rural areas and the researchers working on regional planning in Ardabil Township, Iran, were the statistical population. The sample size was thus determined to be 30 individuals using the snowball sampling method (via theoretical saturation). The data were also collected by a Delphi questionnaire, library method, documents, statistics, and initiatives. To analyze the data, Micmac software, the Geographic Information System (GIS software), Microsoft EXCEL, and the Morris method were employed.

Finding- Analyzing the research findings associated with the variables as determinants with direct influence showed that among 23 variables in this study, 13 cases were within direct influence-dependence scope or condition but only 12 variables prioritized respectively as policy stability, executive regulations/procedures, price stability and predictability and intervention logic, monopoly prevention, unfair concessions or rents and competitions, removal of administrative barriers to business through delegation approach, effective deterrence of criminal laws and prosecutions in the judicial system, innovation/initiative flow, prevention of biased perceptions of laws by relevant stakeholders, distribution system and marketing status, effective market demand, administrative procedures and business information transparency, willingness to buy foreign goods, as well as auditing and taxing regulations/procedures as determinants had the highest influential power, that is, they constituted the drivers of BRD.

Research limitations/implications- Among the most important limitations of the present study was no access to the statistics of all cases and the unwillingness of a number of executive organizations and bodies in Ardabil Township to cooperate. Furthermore, the pivot strategies in this research were established based on local development and BRD strategies.

Practical implications- To meet the objectives of BRD planning in the rural areas of Ardabil Township, the key role of the 12 main variables mentioned here should be taken into account. Such variables have high influence and low dependence on BRD improvements in the study area and they are of top priority in planning for BRD based on local competitiveness in the rural areas of Ardabil County, Iran.

Originality/Value- Little research has thus far assessed the effective drivers of BRD based on local competitiveness using futures studies. Amongst the advantages of the present study, the comprehensiveness and impediment of its research criteria stand out.

Keywords- Balanced development, Competitive advantages, Futures study, Transactional analysis, Ardabil, Iran

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1. Introduction

Geographical inequalities in terms of employment rates, levels of income, as well as facilities and services have led to unplanned migration flow, particularly from rural areas to development hubs (namely, urban areas), changes in social structures, widening gaps in less-developed regions, unwillingness to exploit the potentials of these areas, etc. (Fal-Soleiman & Hajipour, 2014). Actually, imbalance in development flow in different regions causes gaps and intensifies regional disparities, as a barrier to development. Since the 1960s, most countries, using regional studies/planning, have been to achieve balanced development, reduce development gaps between regions, and mitigate inequalities at the global, national, regional, and local scales (Barghi et al., 2017).

Current regional development plans in Iran have still failed to minimize socioeconomic and spatial inequalities between different regions (Ladi, 2017), and even the effective drivers of development have not been identified in such plans due to the diverse conditions of geographical areas in this country (Sharifzadegan et al., 2016). The review of the theoretical literature related to the research topic shows that regional disparities in all areas, especially in rural ones, have been accompanied by numerous challenges at odds with development goals and conditions, particularly sustainable development, in rural areas. On the other hand, the experience of implementing regional development strategies in many countries has resulted in strengthening competitiveness and ultimately reducing regional inequalities to achieve balanced development.

The initial reviews in this study in Ardabil Township, Iran, reveals extensive limitations among residents and settlement networks in terms of access to social welfare services and facilities along with inadequate participation in decision-making processes in various forms at the macro and micro levels due to the nature of sectoral planning and reflects the imbalance in the spatial structure of urban and rural settlements. The city of Ardabil as the capital of Ardabil Province, in northwestern Iran, and Ardabil Township accordingly plays the main role in creating an imbalance in the settlement system in this region. The centralization of facilities and services in all fields has also made the city host a major part of the population living in urban areas in Ardabil province. This is while other residential areas in this region are facing shortages and losing a major part of their natural and ecological resources due to natural hazards or human factors. Therefore, adopting proper strategies and solutions based on existing potentials and advantages in this region, especially in agriculture, industry, tourism, entrepreneurship, etc. can minimize the problems challenging rural communities located in the study area with a view to establishing balanced regional development (BRD). Thus, the main objective of this study was to shed light on the status of the rural areas in this region in terms of competitive advantages, levels of living, and balanced local development, and assess the effective drivers of BRD in Ardabil Township based on local competitiveness. Accordingly, the research questions addressed here are:

- What is the status of the study areas based on the components of effective RBD?
- What are the key factors and drivers of BRD in Ardabil Township, Iran, and what is the influence of each one on RBD in the study area?

2. Research Theoretical Literature

Spatial-temporal theories have evolved in their timeline from a structural view to flow, network, and performance relationships and the factors affecting physical proximity have been replaced by organizational ones. In other words, today's spatial planning models represent both the formation and development of regions. The first type is the relationships between cities with their influence known as regionalism, which can be associated with models such as central location and hierarchical ones based on service-economy dependence on centers (Schwanen et al., 2004). The second type considers scale-free and network relationships between regions in correspondence with novel regionalism. These processes move away from service dependence and mostly center on regional competitiveness, long-range economic relationships, flows of information, complementary relationships, horizontal synergy (i.e, creating scale-based advantages and positively external network effects through cooperation and partnership) and vertical synergy (i.e., surplus value due to aggregation or specialization effects) in different regions (Meijers et al., 2010; Reggiani & Rietveld, 2010). The common feature of these

theories is regional mobility, reduced spatial inequalities, minimized spatial contrasts, and balanced development, but in many Third-World countries, the efficiency and effectiveness of flow-based performance spaces have been marginalized due to predominating political divisions. In other words, competitiveness in novel regionalism reflects topics such as regions conjoined in terms of economic performance, the environment, and functional networks with dynamic development, adaptable to changes. In this view, areas are not defined based on geographical concepts rather as socially formed ones, whose effective intellectual traditions include regional competitiveness, flow space, regional governance, institutionalism, networking, clusters, sustainability, and survival (Neumann, 2003; Jessop, 2003).

After the 1970s and following the changes in the attitudes to government and development, planning and policy-making oriented from national and international levels toward regional and local ones. On the one hand, with regard to the importance of regional and local values and the changes in the functions of the government in regional development, institutionalization and regional competitiveness in the form of good governance (Anabestani & Soleimani, 2019) were emphasized, and on the other hand, widespread criticism of comprehensive plans eventually lead to the emergence of a new approach to planning called strategic planning in regional development planning (Vosoughi-Lang et al., 2017), as one of the new efficient achievements to reach regional development and balance through enhancing the capacities and potentials of regions to exploit their talents and capabilities and emphasizing comprehensive participation, whose fulfillment can increase efficiency and competitiveness and reduce centralization (Yasoori & Sojoudi, 2017). According to the Theory of Social Justice by David Harvey (2008) and the concept of social justice from a geographical perspective, equitable distribution at the land and regional scales is not necessarily synonymous with fair distribution at other scales or between individuals, and it merely explains the nature of social justice in three general criteria of need, public interest, and deserving.

Since 1990, Porter's concept of regional competitiveness has attracted much attention and it is now increasingly used as a political tool for regional development (Kitson et al., 2004). According to Asheim et al. (2006), competitive advantages in the global economy have become localized, originating from skilled labor, knowledge, institutions, competitors, relevant businesses, and advanced users. In this sense, the review of spatial planning development to increase spatial competitiveness and its success in attracting floating capital and human resources has turned into the main concern among many researchers working on regional and urban sciences and the relationship between competitiveness and regional territory (Porter, 1990). Porter's theory of competitive advantages at geographically local, regional, and national scales also attracted the attention of regional decision-makers and economic geographers. Assuming and highlighting some sort of competition between regions, this approach is to attract capital and human resources affecting development (Anabestani et al., 2017) and deal with regional development from a new perspective. With regard to the last few decades from the introduction of regional planning into theoretical and empirical literature in Iran, achieving balanced development with emphasis on competitive advantages, decentralization of economic activities, as well as resources and population has been the main concern among planners and policy-makers in this country (Dadashpour & Rostami, 2011).

2.1. Research Background

Given the above-mentioned issues and the research objectives, it can be acknowledged that the concept of balanced development was originally taken from the criticisms of traditional development models in the late 1980s, defining growth as the increased consumption of assets and services. According to Redding and Nobles (2004), the geography of access to markets and supply resources are significantly correlated with changes in per capita income in different countries. As stated by Benini and Syzoski (2007), examining regional inequalities and economic growth in Russia, regional disparities rising from the beginning of the 1990s were the consequences of structural reorganization processes and territorial resource allocation in this country. Accordingly, the most important domestic and international sources as cases studies in this field could be delineated as follows.

Pourkhalesi and Nourian (2017) identified competitive sectors in Fars Province, Iran, and found that only three out of 14 general economic sectors in this region had advantages including

agriculture, hunting/forestry/fishing, health and social work, public administration, and municipal services, respectively. Rahnama et al. (2018) identified and analyzed the drivers of regional development in Alborz Province, Iran, and reflected on the issues of water resources and drought, the destruction of orchards due to the uncontrolled expansion of constructions, industrial production, and environmental pollution as well as depreciated factories as the disaster scenarios and the capabilities of large-scale and strategic industries and tourism in this province as the most intermediary ones.

Moreover, Shamanyan (2019), in his research presenting a model of balanced development of rural areas based on an entrepreneurial approach measured functional balance and currents in Damghan region, Iran, and reported that the development in the study area was not integrated and homogeneous. They introduced the interconnected multichannel development model as a desirable one. Eftekhari et al. (2019), analyzing the factors affecting the design of spatial development scenarios based on rural areas in Zone 3 of Land-Use Planning, believed that the futures of rural development in this region based on the extracted scenarios had laid much emphasis on economic and income diversity in rural areas. Imani (2016), using futures study, investigated BRD in Ardabil Province, Iran, presented scenarios for its development, and then suggested a long distance between the provincial status and development goals in the upstream documents as well as the realization of balanced development in this region.

Živanović & Gatarić (2017) focused on reaching BRD in Serbia, using spatial and functional analyses of nodes, similarly introduced the relationship between the node centers of the region as one of the key solutions to overcome non-balanced development and reflected on chances to achieve BRD through the functional impact of the node centers across the given process. Correspondingly, Yushkova et al. (2019) explored balanced development and the role of small and medium-sized businesses on the balanced development of agriculture in Russia, considered some solutions to the problems facing such businesses in rural areas, and advocated some strategies to enhance their efficiency.

Based on the review of research background as mentioned briefly above, most previous studies had placed maximum focus on the identification of the factors and strategies for development and competitiveness or had merely introduced the drivers of BRD and competitive activities, but in this study, in addition to the introduction of such competitive activities and effective drivers, the special features of geographical spaces at the local scale within rural areas were taken into account. Therefore, the present study was to assess the drivers of BRD based on local competitiveness using futures studies through identifying and assessing competitive advantages and levels of living in terms of facilities and talents and the integration of BRD with further studies to deal with new problems in rural areas. In addition, one of the positive points in this study was the inclusiveness and exclusiveness of the research criteria.

3. Research Methodology

3.1 Geographical Scope of the Research

This study was conducted in Ardabil Township, in northwestern Iran, comprising the cities of Ardabil and Heer. The rural areas in Ardabil Township were also in three districts of Samrin, Markazi, and Heer in 10 villages, named Dojagh, Gharbi, Arshagh Sharghi, Balghloo, Sardabeh, Sharghi, Kalkhoran, and Fooladloy Jonoubi and Shomali. Ardabil Township accordingly has 179 villages with 20,889 households and a rural population of 79,210 people (Table 1).

Table 1. The position of national divisions in the study area

County	Division	Villages
Ardabil	Samrin	Dojagh
		Gharbi
	Markazi	Arshagh Sharghi
		Balghloo
		Sardabeh
		Sharghi
		Kalkhoran
	Heer	Fooladloy Jonoubi
		Fooladloy Shomali
		Heer

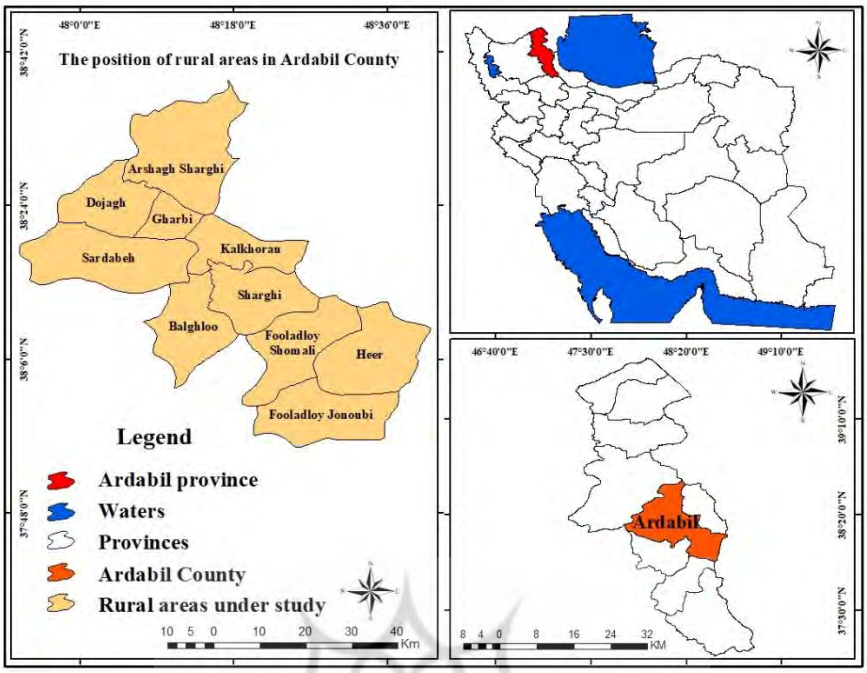

Figure 1. Political position of the study area
Source: Management and Planning Organization of Ardabil Province (2018)

3.2. Methodology

An analytical-exploratory applied method was used in this study. To collect the data, library and field methods were employed. The study area was Ardabil Township, located in northwestern Iran. To evaluate the levels of living in the study area, first, the initial indices were prepared by a review of the research background, and their frequency was obtained. After the primary selection of the indices, their validity and reliability were measured. In this context, the Delphi method (to obtain experts' opinions) and Cronbach's alpha coefficient (0.765) were recruited. Then, the rural areas were ranked through the Morris method. To identify the competitive advantages, the related activities in the study area were further explored considering four indices of spatial benefit, exports, attention to upstream projects (i.e., provincial land-use planning, regional development plan, as well as strategic and operational documents in Ardabil Province), and capacity growth in rural areas, reflected in expert opinions. Then, in order to identify the activities with competitive advantages over indexing, the research background and the frequency of indices were reviewed. To evaluate the quality indices, the data of the business environment monitoring report prepared by the Iran Chamber of Commerce, Industries, Mines, and Agriculture in 2019 were retrieved. As such, using the Morris method, the activities with competitive advantages were ranked, and finally, the strengths and weaknesses, as well as cooperation areas, were extracted via the Geographic Information System (GIS Software) and the inverse distance weighting (IDW) method in each activity according to the selected indices. Ultimately, the transactional analysis of the factors affecting BRD based on local competitiveness was fulfilled using MicMac software to identify the status of each one in the system (i.e., BRD). Figure 1 shows the research process.

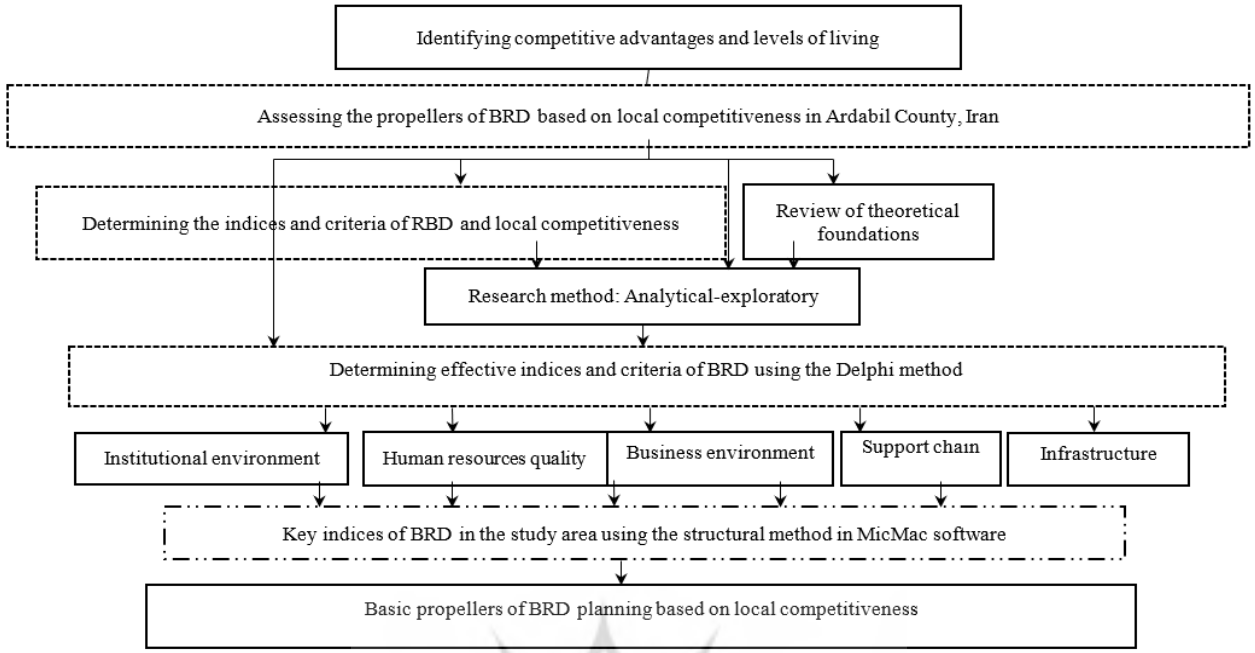

Figure 2. Futures study process of BRD based on local competitiveness in Ardabil Township, Iran

4. Research Findings

4.1. Assessing the Study Area for RBD Components

At the first stage, in order to analyze the status of the study area in terms of development, the RBD components and indices in the study area were examined, and finally, the levels of living were compared and ranked using the Morris method (Table 2).

Table 2. Evaluating the levels of living among villages in the study area based on RBD indices using the Morris method

District	Villages	DI	Ranking
Heer	Fooladloy Shomali	78.7	1
Markazi	Kalkhoran	75.3	2
Samrin	Gharbi	74.8	3
Markazi	Sharghi	70.8	4
Markazi	Sradabeh	69.3	5
Samrin	Dojagh	51.8	6
Heer	Heer	44.6	7
Heer	Fooladloy Jonoubi	31.6	8
Markazi	Arshagh Sharghi	30.5	9
Markazi	Balghloo	8.9	10

The criteria for identifying the rural areas with cooperation potential (Table 3) were reviewed and the compliance of the activities and characteristics of the sample villages with spatial zoning of cooperation areas was performed in the GIS and IDW, whose outputs are illustrated in Figure 3 and Table 3.

Table 3. Criteria for identifying areas with common cooperation potentials in rural areas

Criteria
Distance to the nearest adjacent main road
Distance to the nearest water resources
Rural population
Levels of living
Distance to lands and orchards with large areas
Distance to the nearest city

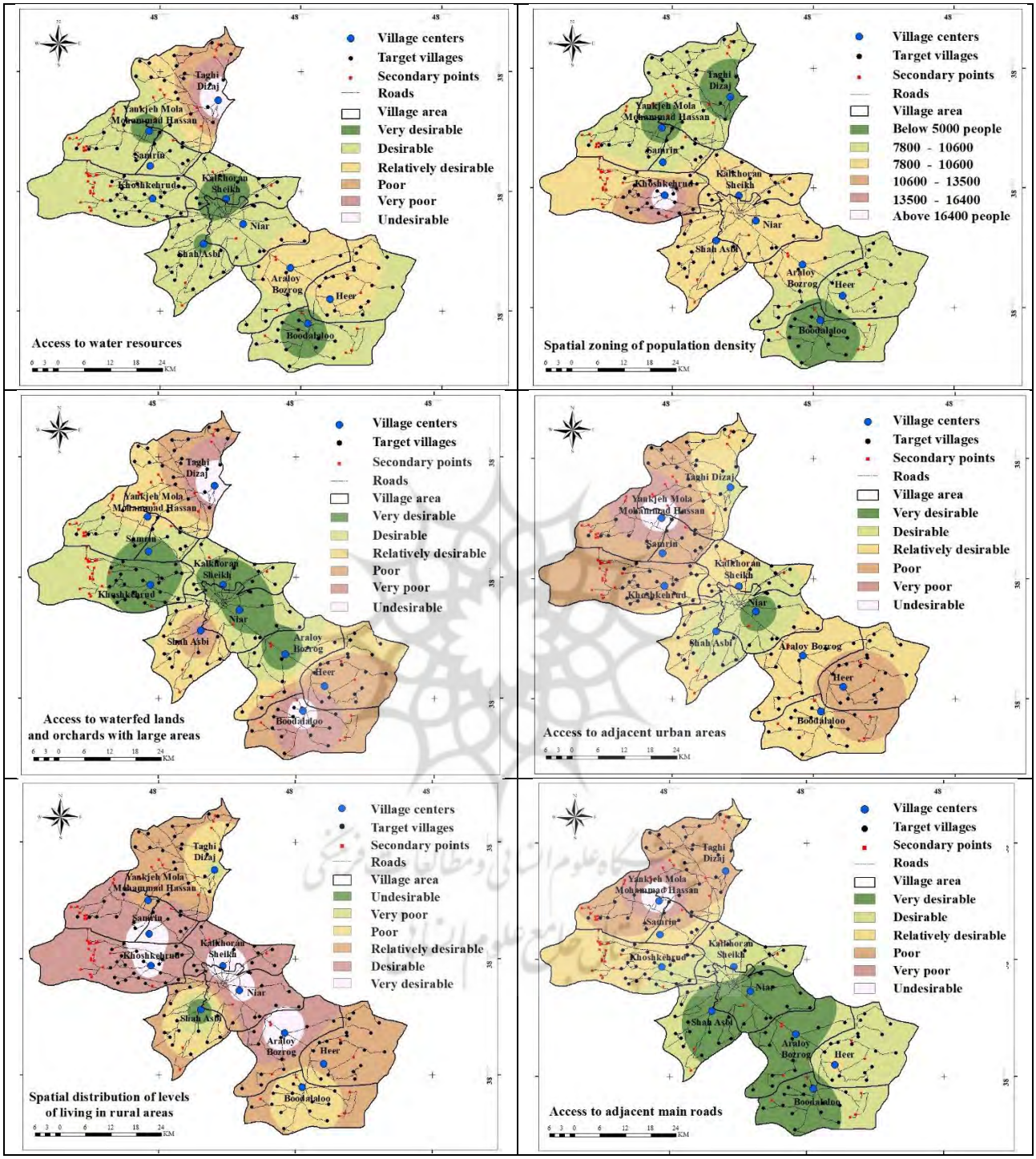

Figure 3. Spatial zoning space areas of cooperation in rural areas using IDW model

To identify the areas with competitive advantages at the second stage, the activities in the study area were considered based on four indices of spatial benefit, exports, attention to upstream projects (that is, provincial land-use planning, regional development plan, as well as strategic and operational document in Ardabil Province, Iran), and capacity growth in rural areas, reflected in expert opinions (Table 4).

Table 4. Identifying the domains of competitive advantages in the study area
Source: Research findings, 2020; basic data were extracted from National Statistics Portal, 2020

Description	Spatial benefit	Exports	Attention to upstream projects	Capacity growth in rural areas
Agriculture, forestry, and fishing		■	■	■
Mining		■		■
Industrial production (manufacturing)	■	■	■	■
Agro-industry and processing of agricultural products		■	■	■
Supply of electricity, gas, steam, and air conditioning				
Water supply, waste management, sewage, and water filtration activities				
Buildings		■		■
Wholesale and retail sale along with repair and maintenance of motor vehicles and motorcycles	■		■	■
Transportation and warehousing	■		■	■
Service activities associated with accommodation and food			■	■
Information and communication	■			
Financial and insurance activities	■		■	
Real estate activities	■			
Professional, scientific, and technical activities				
Administrative activities and support services	■		■	
Public administration, defense, and compulsory social security activities				
Education				
Human health and social work activities			■	■
Art, entertainment, and recreational activities	■		■	
Other services and activities	■			

Industries, Mines, and Agriculture in 2019 were retrieved. As such, using the Morris method, the activities with competitive advantages (resulting from the indexing using the research background and the frequency of indices in Table 4) were ranked (Table 5).

Then, in order to identify the activities with competitive advantages over indexing, the research background and the frequency of indices were reviewed. To evaluate the quality indices, the data of the business environment monitoring report prepared by the Iran Chamber of Commerce,

Table 5. Ranking activities with competitive advantages over indexing using background research and frequency of indices

Rating	Activities
3	Agriculture, forestry, fishing, animal husbandry
4	Agro-industry and processing of agricultural products
5	Industrial production (manufacturing)
1	Transportation and warehousing
2	Commerce, wholesale and retail sale, as well as repair and maintenance of motor vehicles and motorcycles

Finally, factors strengthening and diminishing the activities in Ardabil Township were extracted with respect to the selected indices (Table 6).

Table 6. Factors strengthening and diminishing activities in Ardabil Township, Iran
Source: Research Findings, 2020; Basic indices were extracted from the Iran Chamber of Commerce, Industries, Mines, and Agriculture, 2019

Activities	Strengthening factors	Diminishing factors
Agriculture, forestry, fishing, animal husbandry	Access to infrastructure, insurance services, market demand, unwillingness to buy imported products, product innovation, lack of rents, and no administrative corruption	Unstable administrative policies, rules, and procedures, lack of skilled labor, unfair competitions between companies and public/private institutions in the market, and lack of required technologies
Agro-industry and processing of agricultural products	Healthy competitions, no absenteeism, acceptance of innovations, absence of counterfeit consumer goods, and proper distribution system to bring products to markets	Limited access and poor infrastructure, lack of or defects in backward/forward linkage and product clustering, no transparency of information about economic activities, non-volatile and unpredictable prices (raw materials and products), rents, financial and administrative corruption, and biased perceptions of laws
Industrial production (manufacturing)	Access to infrastructure, clustered communications, low taxes, high finance and capital investment, free access to information, skilled labor, stability in administrative policies, rules, and procedures, and fair competitions	Willingness to buy foreign goods, monopoly, no acceptance of innovations
Transportation and warehousing	Access to communication systems, appropriate technologies, transparency of information, lack of rents, no absenteeism	Poor infrastructure, high levels of taxation, banking finance difficulties, pricing and illogical interventions by governmental institutions in the market, lack of commitment to contract obligations by both sides, relatively free production and supply of non-standard and counterfeit goods in the market, unfair competitions, no acceptance of innovations by partners and customers, corruption, poor responses to complaints, and unstable administrative policies, procedures, regulations
Commerce, wholesale and retail sale, as well as repair and maintenance of motor vehicles and motorcycles	Access to infrastructure, unwillingness to buy foreign goods, and no biased regulations	Poor responses to complaints, corruption, unstable administrative policies, regulations, and procedures, labor shortages, price instability, rents, unfair competitions, lack of commitment to contract obligations and promises by both sides, no information transparency, lack of or defects in backward/forward linkage and product clustering

As depicted in Table 6, access to infrastructure in most activities is in good condition and other strengths can be observed in the activities for agriculture and forestry, insurance services, demand for agro-industry in the market, healthy competitions, no absenteeism, acceptance of innovations, etc.

4.2. Transactional Analysis of BRD Components based on Local Competitiveness

The study variables (namely, basic standards and parameters derived from the national business environment monitoring report in Iran in 2019, analyzed on the basis of theoretical literature, research background, and expert opinions), using transactional analysis in MicMac software, were reviewed and analyzed. For this purpose, a 23*23 matrix was employed to determine the status of each of them in the system (i.e., BRD). The respondents were also asked to compare the study variables through paired comparisons.

4.2.1. Matrix of Direct Influence (MDI)

First, the MDI was formed based on the mean values obtained from the questionnaires to produce the results of interactions, graphs, and maps. The initial analysis of the matrix data and the transactional analysis outcomes showed a total number of 23 options for the matrix considering its dimensions, of which, 389 relations could be assessed. The matrix filling degree was 73.64%, suggesting that 73.64% of the selected factors

could influence each other. Moreover, the matrix with twice-over rotation was 100% optimum based on the statistical data, indicating the high reliability of the questionnaire and its answers (Table 7).

Table 7. Initial analysis of the data matrix and its statistics

Matrix dimensions	Number of repetitions	No influence (0)	Low influence (1)	Moderate influence (2)	High influence (3)	Total	Filling degree
23*23	2	140	87	161	141	389	73.64%

The analysis of direct transactional matrix results (identifying the activities with greater economic advantages given the areas under study), the variables of the stability of executive policies, regulations, and procedures as well as monopoly prevention and concessions, or rents, and unfair competitions had the greatest influence; in contrast, the participation of local residents and financial and administrative corruption had high dependence in BRD based on local competitiveness (Table 8).

Table 8. Direct transactional effects of factors/variables

Source: Research findings, 2020, the basic indices were extracted from the Iran Chamber of Commerce, Industries, Mines, and Agriculture, 2019

Variables	Influence		Dependence		Variables	Influence		Dependence	
	Score	Ranking	Score	Ranking		Score	Ranking	Score	Ranking
Sustainable financing	27	15	53	21	Effective market demand	50	6	40	6
Financial and administrative corruption	30	14	47	2	Auditing and taxing regulations/ procedures	41	13	39	8
Participation of local residents	23	17	28	1	Removal of administrative barriers to business through delegation approach	48	8	32	16
Access to transport infrastructure	18	19	30	17	Innovation and initiative flow	51	3	38	11
Access to soft communication infrastructure	19	18	33	14	Backward/forward linkage and product clustering	45	12	46	3
Lack of public absenteeism and closure welcome by labor	18	19	39	8	Prevention of biased perceptions of laws by relevant stakeholders	49	7	36	12
Access to required technologies	15	21	25	21	Distribution system and marketing status	48	8	39	8
Access to skilled labor	6	23	34	13	Willingness to buy foreign goods	42	11	40	6
Access to electricity and fuel infrastructure	11	22	33	14	Prevention of monopolies, unfair concessions, or rents and competitions	57	2	30	17
Effective deterrence of criminal laws and prosecutions in the judicial system	43	10	29	19	Administrative procedures and business information transparency	51	3	42	5
Stability of executive policies, regulations, and procedures	62	1	25	22	No production and supply of relatively free non-standard, counterfeit, and contraband goods	27	15	45	4
Price stability and predictability and intervention logic	51	3	29	19	Total	832	-	832	-

In this method, the effects of the matrix variables could be measured. The variable directly affecting a limited number of variables had little influence on the whole system (i.e., BRD) and that all variables and their surrounding environment could be displayed in a graph conceptually or via coordinates (influence/dependence axes). Figure 4 shows the position of the variables evaluated in the MDI.

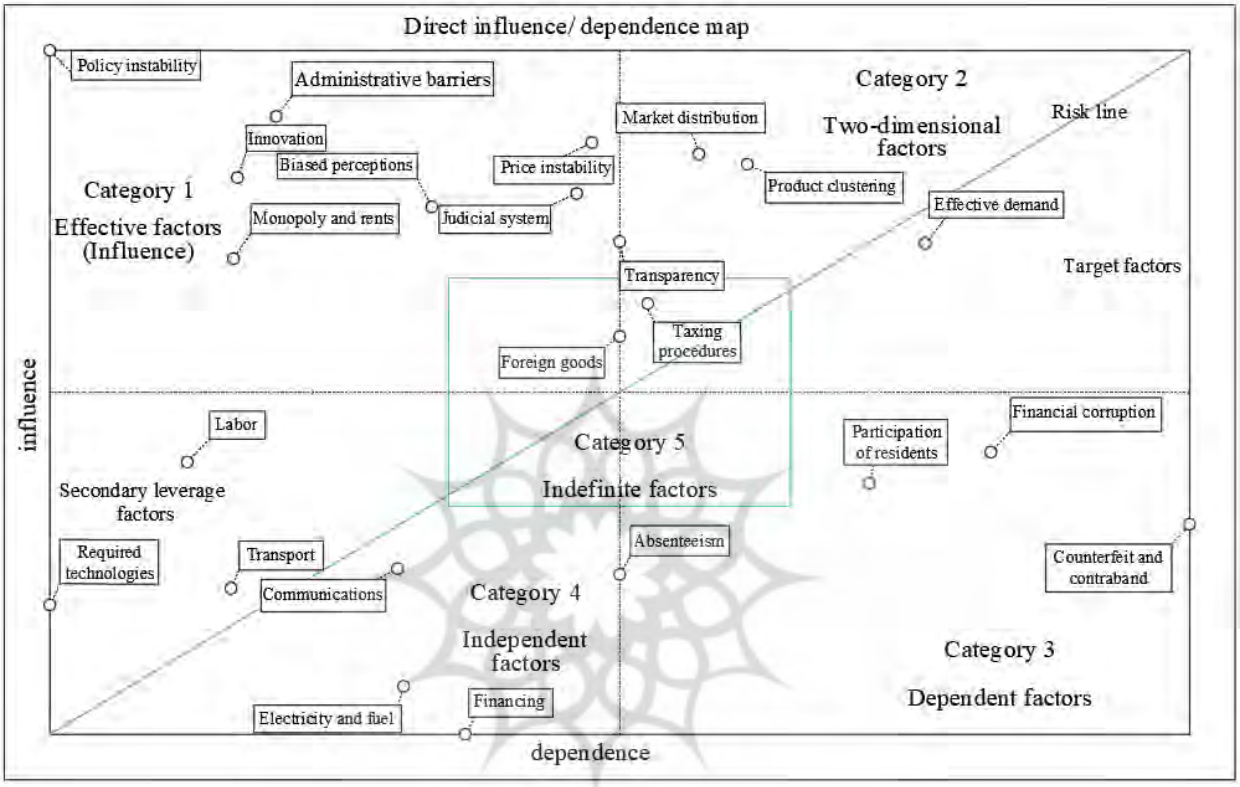

Figure 4. Distribution of variables and their position in influence-dependence MDI

The position of the variables in this diagram represents their status in the system. In general, these variables are grouped into five categories, whose status can be identified in Figure 4. Accordingly, the variables found in the top part of the diagram bisector have a strong influence on the system. In this sense, the placement of each variable in the five categories mentioned and their influence-dependence are provided as follows:

A) Effective Variables (Influence)
These variables have the highest influence and minimal dependence on the BRD.
B) Two-Dimensional Variables
These variables simultaneously have high influence and dependence in the BRD. It should be noted that the backward/forward linkage and product clustering were introduced as the target variable.

C) Dependent Variables
The variables of administrative and financial corruption, participation of local residents, no public absenteeism and closure welcome by labor, and production and supply of relatively free non-standard, counterfeit, and contraband goods were the most frequent dependent variables in the BRD, which were more sensitive compared with effective and two-dimensional ones.
D) Independent Variables
The variables of access to transport infrastructure, access to communication software infrastructure, access to required technologies, access to skilled labor, and access to electricity and fuel infrastructure were identified as the independent variables in the BRD. This meant that such variables had not been affected by other variables and even had little or no influence on them. Of the

above-mentioned variables, sustainable financing, access to transport infrastructure, and access to required technologies were the secondary leverage variables in the system.

E) Indefinite/Regulatory Variables

No variable was within this category.

4.2.2. Matrix of Indirect Influence (MII)

In the MII, each variable was powered by 2, 3, 4, 5, etc. via the software and accordingly, their indirect influence was measured. This matrix suggested that the variables of policy stability, executive regulations and procedures, monopoly prevention, unfair concessions, rents, and competitions, price stability and predictability and intervention logic, sustainable financing, and prevention of biased perceptions of laws by relevant stakeholders were among the most effective variables, while participation of local residents, backward/forward linkage and product clustering, financial and administrative corruption, production and supply of relatively free non-standard, counterfeit, and contraband goods, and administrative procedures and business information transparency were introduced as most indirect dependent variables (Table 9).

Table 9. Indirect influence of factors/variables on each other

Variables	Effect		Dependence		Variables	Effect		Dependence	
	Score	Ranking	Score	Ranking		Score	Ranking	Score	Ranking
Sustainable financing	7155	4	42840	15	Effective market demand	63476	10	52571	6
Financial and administrative corruption	34596	15	60716	3	Auditing and taxing regulations/ procedures	59557	13	50780	9
Participation of local residents	29440	18	68689	1	Removal of administrative barriers to business through delegation approach	65204	9	42381	16
Access to transport infrastructure	20619	19	40373	17	Innovation and initiative flow	69180	7	49906	11
Access to soft communication infrastructure	18945	20	43261	14	Backward/forward linkage and product clustering	60361	12	61052	2
Lack of public absenteeism and closure welcome by labor	18138	21	51781	8	Prevention of biased perceptions of laws by relevant stakeholders	69868	5	46138	12
Access to required technologies	13645	22	31168	23	Distribution system and marketing status	67133	8	50665	10
Access to skilled labor	4783	23	43779	13	Willingness to buy foreign goods	61713	11	52430	7
Access to electricity and fuel infrastructure	32375	16	34702	21	Prevention of monopolies, unfair concessions, or rents and competitions	77592	2	39604	18
Effective deterrence of criminal laws and prosecutions of the judicial system	54949	14	37635	20	Administrative procedures and business information transparency	69771	6	54038	5
Stability of executive policies, regulations, and procedures	80812	1	32770	22	No production and supply of relatively free non-standard,	30507	17	58010	4

Variables	Effect		Dependence		Variables	Effect		Dependence	
	Score	Ranking	Score	Ranking		Score	Ranking	Score	Ranking
					counterfeit, and contraband goods				
Price stability and predictability and intervention logic	73229	3	37759	19	Total				

Moreover, Figure 5 shows the position of the variables evaluated in the MII.

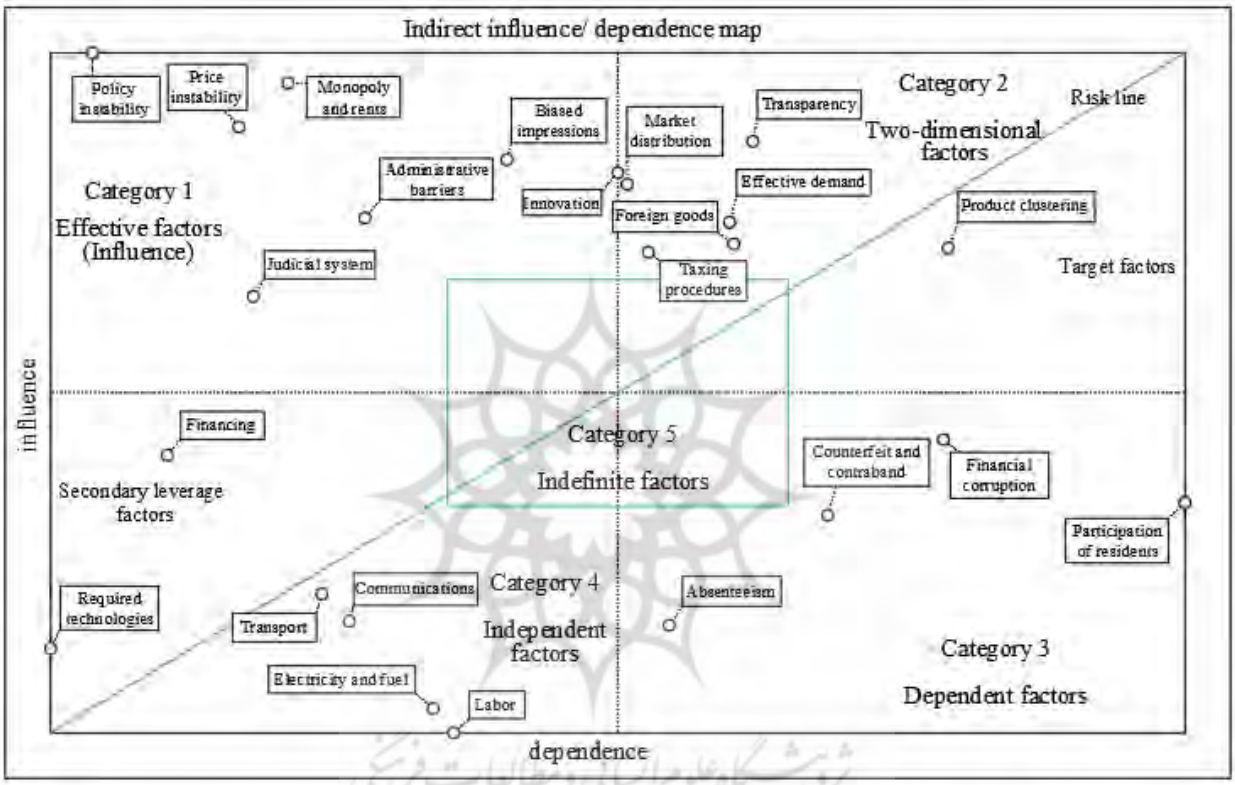

Figure 5. Distribution of variables and their position in the influence-dependence MII

4.2.3. Ranking the General Influence / Dependence of Variables

Another stage in this study was to rank the influence-dependence of the variables. Accordingly, Table 10 presents the overall ranking (direct and indirect influence) of the variables evaluated in two states, i.e., general influence and dependence.

Table 10. Ranking influence-dependence of the variables

Variables	Influence ranking			Dependence ranking		
	Direct	Indirect	Final	Direct	Indirect	Final
Sustainable financing	15	4	10	21	21	21
Financial and administrative corruption	14	15	15	2	3	2
Participation of local residents	17	18	18	1	1	1
Access to transport infrastructure	19	19	20	17	17	17
Access to soft communication infrastructure	18	20	19	14	14	14
Lack of public absenteeism and closure welcome by labor	19	21	21	8	8	8
Access to required technologies	21	22	22	21	23	22
Access to skilled labor	23	23	23	13	13	13

Access to electricity and fuel infrastructure	22	16	17	14	15	15
Effective deterrence of criminal laws and prosecutions of the judicial system	10	14	13	19	20	20
Stability of executive policies, regulations, and procedures	1	1	1	22	22	23
Price stability and predictability and intervention logic	3	3	3	19	19	19
Effective market demand	6	10	8	6	6	6
Auditing and taxing regulations/procedures	13	13	14	8	9	9
Removal of administrative barriers to business through delegation approach	8	9	9	16	16	16
Innovation and initiative flow	3	7	5	11	11	11
Backward/forward linkage and product clustering	12	12	12	3	2	3
Prevention of biased perceptions of laws by relevant stakeholders	7	5	6	12	12	12
Distribution system and marketing status	8	8	7	8	10	10
Willingness to buy foreign goods	11	11	11	6	7	7
Prevention of monopolies, unfair concessions, or rents and competitions	2	2	2	17	18	18
Administrative procedures and business information transparency	3	6	4	5	5	5
No production and supply of relatively free non-standard, counterfeit, and contraband goods	15	17	16	4	4	4

Accordingly, stability of administrative policies, regulations, and procedures, monopoly prevention, unfair concessions or rents and competitions, price stability and predictability and intervention logic, administrative procedures and business information transparency, and innovation and initiative flow had the highest rankings in terms of general influence. On the other hand, the variables of participation of local residents, financial and administrative corruption, backward/forward linkage and product clustering, production and supply of relatively free non-standard, counterfeit, and contraband goods, and administrative procedures and business information transparency obtained the highest rankings with regard to their dependence.

4.2.4. Selection of PRD Drivers

Since identifying drivers requires the simultaneous consideration of influence-dependence variables, the study variables were discussed in terms of their position in the graph as well as their influence and dependence. As already mentioned, the elements in the top part of the bisector are the ones whose influence is more than their dependence. The variables in the first (input or key), second (intermediate or two-dimensional), and fifth (clustered or indefinite) areas placed above the bisector accordingly have high importance and influential power. Therefore, they are the most important BRD variables. According to Table 11, data analysis in terms of the variables with the influential power and direct effects showed that among 23 variables in the study, 13 cases were at the top of the bisector of the direct influence-dependence diagram (eight variables in the first area and five variables in the second area) (Figure 5), of which, 12 variables had positive influence, including policy stability, executive regulations and procedures, price stability and predictability and intervention logic, monopoly prevention, unfair concessions or rents and competitions, effective deterrence of criminal laws and prosecutions of the judicial system, innovation and initiative flow, prevention of biased perceptions of laws by relevant stakeholders, removal of administrative barriers to business through delegation approach, auditing and taxing regulations/procedures from the first area and effective market demand, administrative procedures and business information transparency, backward/forward linkage and product clustering, distribution system and marketing status, and willingness to buy foreign goods from the second area. The highest rankings of the direct influence of the variables in the first area were particularly associated with policy stability, executive regulations/procedures, monopoly prevention, unfair concessions or rents and competitions, and price stability and predictability and intervention logical (Table 11).

Table 11. Key variables determining BRD (in terms of direct influence)

Area/ Category	Variables	Influence	Dependence	Gross influence (Influential power)	Gross dependence ranking
First area Effective variables (Influence)	Policy stability, administrative regulations, and procedures	62	25	37	1
	Price stability and predictability, and intervention logic	51	29	22	3
	Prevention of monopolies, unfair concessions or rents and competitions	57	30	27	2
	Removal of administrative barriers to business through delegation approach	48	32	16	4
	Effective deterrence of criminal laws and prosecutions of the judicial system	43	29	14	5
	Innovation and initiative flow	51	38	13	6
	Prevention of biased perceptions of laws by relevant stakeholders	49	36	13	6
	Auditing and taxing regulations/procedures	41	39	2	11
Second area Two-dimensional variables	Effective market demand	50	40	10	8
	Administrative procedures	51	42	9	9
	Backward/forward linkage and product clustering	45	46	-1	13
	Distribution system and marketing status	48	39	9	9
	Willingness to buy foreign goods	42	40	2	11

According to Table 12 reflecting on the variables with indirect influence, among 23 variables in the study, there were 13 cases at the top of indirect influence/dependence diagram bisector (namely, seven variables in the first area and six variables in the second area) (Figure 6), of which, 12 variables had positive influence, including policy stability, executive regulations/procedures, price stability and predictability and intervention logic, monopoly prevention, unfair concessions or rents and competitions, removal of administrative barriers to business through delegation approach, effective deterrence of criminal laws and prosecutions of the judicial system, innovation and initiative flow, prevention of biased perceptions of laws by relevant stakeholders from the first area and backward/forward linkage and product clustering, distribution system and marketing status, effective market demand, administrative procedures and business information transparency, willingness to buy foreign goods, and auditing and taxing regulations/procedures from the second area. Moreover, the highest rankings of the indirect influence were related to the variables in the first area (in particular, policy stability, executive regulations/procedures, monopoly prevention, unfair concessions or rents and competitions, and price stability and predictability and intervention logic).

Table 12. Key variables determining BRD (in terms of indirect influence)

Area/ Category	Variables	Influence	Dependence	Gross effect (Influential power)	Gross dependence ranking
First area Effective variables (Influence)	Policy stability, administrative regulations, and procedures	80812	32770	48042	1
	Price stability and predictability and intervention logic	73229	37759	35470	3
	Prevention of monopolies, unfair concessions or rents and competitions	77592	39604	37988	2
	Removal of administrative barriers to business through delegation approach	65204	42381	22823	5

	Effective deterrence of criminal laws and prosecutions of the judicial system	54949	37365	17584	7
	Innovation and initiative flow	69180	49906	19274	6
	Prevention of biased perceptions of laws by relevant stakeholders	69868	46138	23730	4
Second area Two-dimensional variables	Backward/forward linkage and product clustering	60361	61052	-691	13
	Distribution system and marketing status	67133	50665	16498	8
	Effective market demand	63476	52571	10905	10
	Administrative procedures and business information transparency	69771	54038	15733	9
	Willingness to buy foreign goods	61713	52430	9283	11
	Auditing and taxing regulations/procedures	59557	50780	8777	12

According to the results in Table 12, among 23 variables investigated in this study, 12 cases were selected as the drivers of BRD based on local competitiveness in the study area, as presented in Table 13.

Table 13. Drivers of BRD based on local competitiveness in the study area

Variables			
Policy stability, executive regulations and procedures	Price stability and predictability and intervention logic	Prevention of monopolies, unfair concessions or rents and competition	Removal of administrative barriers to business through delegation approach
Effective deterrence of criminal laws and prosecutions of the judicial system	Innovation and initiative flow	Prevention of biased perceptions of laws by relevant stakeholders	Distribution system and marketing status
Effective market demand	Administrative procedures	Willingness to buy foreign goods	Auditing and taxing regulations/procedures

Indeed, these variables were introduced as the drivers in the present study, namely, the variables at the top of the bisector of the direct and indirect influence diagram (Figures 5 and 6). It should be noted that these variables were obtained by comparing the rankings of direct and indirect influence.

4.2.5. Identification of Strategic Variables

Strategic variables are the ones that can be manipulated, controlled, and even influence the system dynamics and changes. It should be noted that as the end of the fourth area gets closer to the end of the second area, the strategic importance of the variables is added (Figure 6). According to the given explanations and with regard to the following figure, none of the variables in this study was strategic.

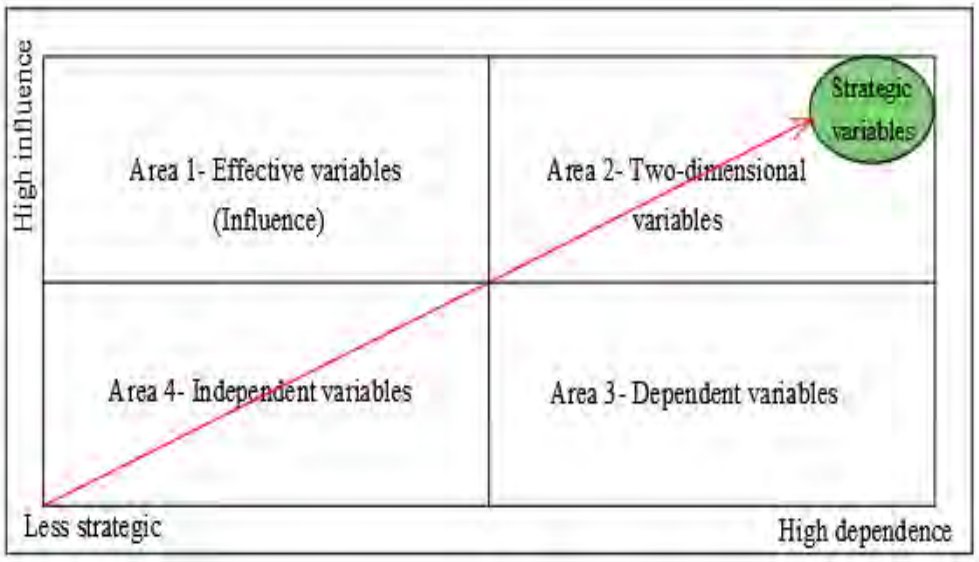

Figure 6. The position of strategic variables
Source: Ziari et al., 2017, p. 73

4.2.6. System Stability and Instability

The distribution of the variables in the influence-dependence diagram denotes the system stability or instability. If the distribution of the variables has an L form, the system is stable and this stability indicates stability in effective variables and their continuing influence on other variables. If the variables move from the axis towards the bottom of the diagram and spread around it, the system is not stable and the lack of effective variables threatens the system (Figure 7), making the assessment and identification of such key factors very problematic (Godet, 2003).

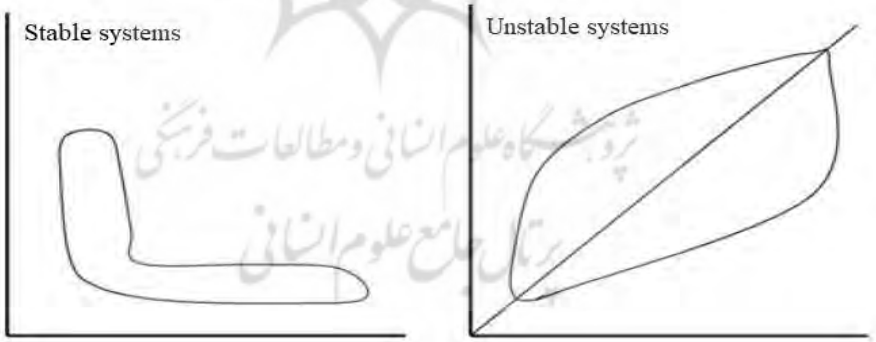

Figure 7. Schematic view of the system stability and instability
Source: Ziari et al., 2017, p. 74

Hence, the distribution of the variables in the direct and indirect influence-dependence axes (Figures 4 and 5) shows the system is unstable (the right side of Figure 7), because the factors are distributed in the four areas of the diagram.

5. Discussion and Conclusion

Unbalanced development and no spatial justice in the distribution of welfare and wealth can lead to inequality, migration, unemployment, poverty, and dissatisfaction, abandoned settlements in rural and marginalized areas, and even security problems for a country and divergence in these areas. Identifying and assessing competitive advantages and levels of living along with BRD using futures study can be thus useful in solving new regional problems. Accordingly, it is necessary to revise macro-management approaches and utilize novel tools for regional

planning. Achieving this goal in Ardabil Township required identifying key factors and drivers of BRD. In this study, the variables were obtained from the Delphi method with reference to expert opinions and then analyzed through MicMac software to identify the BRD drivers based on local competitiveness in the area concerned and the results were as follows.

The variables of policy stability, executive regulations and procedures, monopoly prevention, unfair concessions or rents and competitions, as well as price stability and predictability and intervention logic had the highest rankings of general influence, and the variables of participation of local residents, financial and administrative corruption, and backward/forward linkage and product clustering obtained the highest rankings in terms of dependence.

The results regarding the variables with the influential power and direct effects showed that among 23 variables of this study, 13 variables were within direct influence-dependence scope or condition but only 12 variables respectively prioritized as policy stability, executive regulations and procedures, price stability and predictability and intervention logic, monopoly prevention, unfair concessions or rents and competitions, removal of barriers to business administration through delegation approach, effective deterrence of criminal laws and prosecutions of the judicial system, innovation and initiative flow, prevention of biased perceptions of laws by relevant stakeholders, distribution system and marketing status, effective market demand, administrative procedures and information business transparency, willingness to buy foreign goods, as well as auditing and taxing rules/procedures were among the variables with the highest positive direct and indirect influence and dependence and they were among the variables with high influential power, i.e., they constituted the BRD drivers. Moreover, the results revealed that none of the variables in this study was strategic and their distribution of the direct and indirect influence and dependence axes indicated the system instability. Therefore, any planning in order to achieve BRD in the study area based on local competitiveness needs to respect the key and basic roles of these variables, which have high influence and low dependence in BRD, as the main priorities in this study. The results of the present study were consistent with the findings reported by Zali and Zamanipour (2015) based on the systematic analysis of regional development variables in Mazandaran province, Iran, in terms of some parameters such as methodology and macro variables; however, there were discrepancies in the main variables and drivers due to the different conditions of Ardabil Township and the selected areas in Mazandaran province. Moreover, the results were in conflict with the reports by Karimipour and Aref (2016) on the role of political management of space in BRD in which geographical isolation, low value-added, range of distance, and no coordination in the management of administrative organizations had decelerated the BRD in Chabahar Port, so that establishing a province with the capital city of Chabahar Port could be the key to solving this problem. Considering similar methodologies and results, Dadashpour and Dadehjani (2015) had also identified and prioritized the root factors affecting improvements in regional competitiveness in Kurdistan province, Iran.

According to the findings and the identified drivers of BRD based on local competitiveness, the following suggestions are offered:

- Exploiting key variables and drivers introduced in the present study for the evaluation and planning of BRD in rural areas of Ardabil Township, Iran;
- Making decisions at the macro level in order to strengthen the position of the government in policy-making and developing mechanisms to execute laws with no direct government intervention in the implementation of programs and affairs to reduce administrative formalities and pass minimum rules, stabilize rules, and prevent sudden changes;
- Delegating the necessary authority by legal institutions to the bodies executing and supervising programs at the level of local managers of Ardabil Township to achieve BRD;
- Streamlining the participation of local residents in the study area in order to benefit from interests and improve their views on the issue of BRD in Ardabil Township;
- Training and changing the attitudes of senior managers of Ardabil Township to increase the professional skills of employees in the field of streamlining and facilitating BRD based on local competitiveness;
- Making decisions with regard to flexibility, scalability, and adjustment of the BRD program in the study area based on local necessities within specific time limits.

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Original Article

تحلیل پیشران‌های مؤثر توسعهٔ متوازن ناحیه ای بر مبنای رقابت‌پذیری محلی (مورد مطالعه: نواحی روستایی شهرستان اردبیل)

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چکیده مبسوط

۱. مقدمه

هدف پژوهش حاضر شناسایی مزیت‌های رقابتی، سطح برخورداری و وضعیت توسعهٔ متوازن در سطح محلی و تحلیل پیشران‌های مؤثر در توسعهٔ متوازن ناحیه اردبیل بر مبنای رقابت‌پذیری محلی با رویکرد آینده‌نگاری است. بررسی‌های اولیه پژوهش در محدوده مورد مطالعه نشان می‌دهدکه به علت ماهیت سیاست‌های برنامه‌ریزی بخشی؛ محدودیت گروه‌هایی وسیع از ساکنین مناطق و شبکه‌های سکونتگاهی در دسترسی به امکانات و خدمات رفاه اجتماعی با محدودیت مشارکت در فرآیندهای تصمیم‌سازی به اشکال مختلف در سطوح کلان و خرد مشهود و بیانگر عدم تعادل در ساختار فضایی سکونتگاه‌های شهری و روستایی است. از این رو، اتخاذ استراتژی‌ها و راهکارهایی صحیح با توجه به پتانسیل‌های و مزیت‌های موجود در محدوده می‌تواند مشکلات و چالش‌های نواحی روستایی محدوده مورد مطالعه را با نگاهی به برقراری تعادل منطقه‌ای به حداقل برساند. بنابراین سوالات زیر در پژوهش حاضر مطرح می‌شود: نواحی مورد مطالعه مبنی بر مؤلفه‌های توسعهٔ متوازن در چه وضعیتی قرار دارند؟ و عوامل کلیدی و نیروهای پیش‌ران توسعهٔ متوازن ناحیه‌ای شهرستان اردبیل کدام‌اند و میزان تأثیر هرکدام بر توسعهٔ متوازن محدوده چقدر است؟

۲. مبانی نظری تحقیق

امروزه وجه مشترک اغلب نظریه‌های مکانی – فضایی؛ تحرک منطقه‌ای، کاهش نابرابری سازمان فضایی، به حداقل رساندن تباینات فضایی و برقراری توسعهٔ متوازن می‌باشد اما در بسیاری از کشورهای جهان سومی؛ با غلبه تقسیمات سیاسی، کارآمدی و اثرگذاری عاملیت فضای عملکردی مبتنی بر جریان‌های ناحیه ای به حاشیه رانده شده است. به عبارت دیگر؛ در قرن ۲۱ بحث رقابت‌پذیری در نومنطقه گرایی؛ بیانگر موضوعاتی از قبیل: مناطق همپیوند عملکردی اقتصادی، محیط زیست و ایجاد شبکه‌های عملکردی که در توسعه‌اش پویا و نسبت به تغییر و انطباق، باز است. در این نگاه، نواحی بیش از آنکه براساس مفهوم جغرافیایی تعریف شود، به صورت پهنه‌ای که «به‌طور اجتماعی تکوین یافته» تلقی می‌شود و از سنت‌های فکری مؤثر آن؛ رقابت‌پذیری ناحیه ای و منطقه ای، فضای جریان‌ها و حکمروایی، نهادگرایی، شبکه‌ها، خوشه‌ها و پایداری است. پس از دهۀ ۷۰ میلادی با تغییر در نگرش به دولت و توسعه، برنامه‌ریزی و سیاست‌گذاری از سطح ملی و بین‌المللی به سطح منطقه‌ای و محلی متمایل گشت. با اهمیت یافتن ارزش‌های منطقه‌ای و محلی، از یک سو با تغییر در کارکرد دولت در توسعه منطقه‌ای بر نهادسازی و رقابت‌پذیری منطقه‌ای تأکید شد که به عنوان یکی از دستاوردهای نوین و کارآمد جهت دستیابی به توسعه و تعادل منطقه‌ای با بالا بردن توان و ظرفیت مناطق استفاده از استعداد ها و توانمندی‌هایشان؛ به مشارکت همه جانبه مناطق تاکید دارد و تحقق این امر افزایش بهره وری، رقابت‌پذیری و کاهش تمرکزگرایی را در پی خواهد داشت.

۳. روش‌شناسی تحقیق

روش تحقیق تحلیلی ـــ اکتشافی و از نظر هدف کاربردی، محدودهٔ مورد مطالعه نواحی روستایی شهرستان اردبیل و جامعهٔ آماری تحقیق شامل پژوهشگران در حوزهٔ برنامه‌ریزی منطقه‌ای در سطح شهرستان اردبیل است. حجم نمونه به روش نمونه‌گیری گلوله برفی

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(با اشباع نظری) ۳۰ نفر بدست آمده است. جمع‌آوری اطلاعات از طریق پرسشنامه به روش دلفی و همچنین به صورت کتابخانه‌ای و از طریق بررسی اسناد، آمارنامه‌ها و طرح‌های تهیه شده؛ گردآوری شده است. برای تجزیه و تحلیل داده‌ها از نرم‌افزار MICMAC، مدل رتبه‌بندی موریس و نرم‌افزار GIS و EXCEL استفاده شده است.

۴. یافته های تحقیق

تجزیه و تحلیل یافته های پژوهش در خصوص متغیرهای دارای قدرت تعیین‌کنندگی با اثرات مستقیم نیز نشان داده که از بین ۲۳ متغیر پژوهش تعداد ۱۳ متغیر در محدوده یا شرایط تأثیرگذاری و تأثیرپذیری مستقیم قرار گرفته‌اند اما فقط تعداد ۱۲ متغیر به ترتیب الویت؛ شامل: (ثبات سیاست‌ها، مقررات و رویه‌های اجرایی، ثبات و قلبل پیش‌بینی بودن قیمت‌ها و دخلت‌های منطقی، پیشگیری از انحصار، امتیاز یا رانت و رقابت نامنصفانه، رفع موانع اداری کسب وکار با رویکرد تفویض اختیار، بازدارندگی مؤثر قوانین جزائی و پیگرد مؤثر دستگاه قضا، جریان نوآوری و ابتکار، پیشگیری در برداشت‌های سلیقه‌ای از قوانین توسط ذی مدخلان، وضعیت نظام توزیع و بازاررسانی، تقاضای مؤثر در بازار، رویه‌های اداری و شفافیت اطلاعات کسب و کار، تمایلات خرید کالاهای خارجی، قوانین و رویه ممیزی و دریافت مالیات) جزو متغیرهای دارای قدرت تعیین‌کنندگی بالا بوده و بعبارت دیگر نیروهای پیش‌ران توسعهٔ متوازن ناحیه‌ای را تشکیل می دهند همچنین نتایج پژوهش نشان داد هیچکدام از متغیرهای این تحقیق، جزو متغیرهای استراتژیک نبوده و نحوه پراکنش متغیرها در محورهای تأثیرگذاری/ تأثیرپذیری مستقیم و غیرمستقیم، نشان دهنده ناپایداری سیستم است.

۵. بحث و نتیجه گیری

از آنجایی که تجزیه و تحلیل یافته های پژوهش در خصوص متغیرهای دارای قدرت تعیین‌کنندگی با اثرات مستقیم نیز نشان داده که ۱۲ متغیر با بیشترین امتیاز و الویت؛ جزو متغیرهای دارای قدرت تعیین‌کنندگی بالا و نیروهای پیش‌ران توسعهٔ متوازن نواحی روستایی شهرستان اردبیل هستند؛ هرگونه برنامه‌ریزی توسعهٔ متوازن ناحیه‌ای در نواحی روستایی شهرستان اردبیل باید نقش کلیدی عوامل مذکور را مورد توجه قرار دهد. همچنین، با توجه به ماهیت و وضعیت پیشران های اصلی از قبیل: "ثبات سیاست‌ها، مقررات و رویه‌های اجرایی"، "ثبات و قلبل پیش‌بینی بودن قیمت‌ها و دخالت‌های منطقی" ؛ می بایستی به سیاستگذاری در راستای تثبیت جایگاه دولت در حد سیاست‌گذاری و طراحی سازوکار اجرای قوانین و عدم دخالت مستقیم دولت در اجرای برنامه‌ها و امور؛ کاهش تشریفات اداری و تصویب حداقل قوانین، ثبات قوانین و جلوگیری از تغییرات ناگهانی آن؛ اقدام نمود. از سوی دیگر به تنفیذ اختیارات لازم از سوی نهادهای قانونی به دستگاه‌های مجری و ناظر برنامه در سطح مدیران محلی شهرستان اردبیل جهت تحقق توسعه متوازن نواحی روستایی اقدام نمود.

کلیدواژه‌ها: توسعهٔ متوازن، مزیت رقابتی، آینده پژوهی، تحلیل ساختاری متقابل، شهرستان اردبیل.

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