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Formulating Urban Development Strategies with Knowledge-Based Development Approach (Case: City of Arak)

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Abstract: In the third millennium and the urban world, achievement to development requires cities that they were mentioned as development engine until a few decades ago and today, they are introduced as knowledge-based cities. Such cities have a kind of economy based on knowledge and sustainable cities that their citizens live in comfort. In other words, a knowledge-based city is one aiming to achieve wisdom-based development. This important issue is done by creating, dividing, updating, and measuring knowledge continuously. In order to achieve to this purpose, citizens' constant interaction from one hand, and interaction among them and people in other cities or urban economy from other hand is necessary. In the meantime, industrial cities, as economically and demographically important places, are very important since they are alternatives to achieve to knowledge-based cities because of their direct relationship with technology, science, job creation, and revenue creation. Thus, this research tries to evaluate feasibility of industrial cities to achieve to knowledge-based development with the aim of multiple analyses socially, economically, environmentally, institutionally etc. of industrial cities. Thus, city of arak, as one of the industrial hubs in the country, was investigated. Research methodology was descriptive-analytical by using decision-making techniques of SWOT and PESTLE. In this regard, it has been tried in this research to examine indicators of knowledge-based city in Arak, to realize abilities and limitations of city of arak by using strategic planning techniques and evaluating status, to investigate whether industrial cities, such as Arak, have necessary potential to become knowledge-based city, and to determine strategies to achieve to knowledge-based city. The findings indicated that city of Arak is able to become a knowledge-based city.

Keywords: knowledge-based city, industrial city, Arak, SWOT, PESTLE
JEL Classification: A12, N95, O14, C38

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1- Introduction

In 21th century, the common belief is that the key factor for the next decades is reliance on knowledge, intellectual forces and technologies in comprehensive development particularly scientific and technological development emphasized in 1404 vision statement. Development of knowledge occurs in a suitable and favorable context and supervised under required feedback and evaluation. In present era, industrial communities convert or will convert to knowledge-based communities. In such communities, science and technology are the key factors for development (Emami & Saeidi, 2009). The concept of knowledge- based is defined as any phenomenon achieved with reliance on science and knowledge. One of the key factors for the achievement of development is to incorporate knowledge- based approach into all scientific and technological aspects in the society. One of these is creation and development of knowledge- based cities that is highly emphasized today and very successful examples of these cities are evident across the world. Cities developed by knowledge- based approaches include: Barcelona, Munich and Stockholm which are a few instances of successful cities that enjoy an economy based on knowledge and sustainable cities where the citizens live in welfare and peace. In other words, a knowledge- based city is a place the aim of which is the achievement of knowledge- based development and this goal is satisfied through constant creation, distribution, update and measurement of knowledge. For this purpose, continuous interaction between the citizens on one hand and their interaction with the people of other cities or urban economy on the other hand is necessary (Karimi et. al., 2013). Hence, in todays' world where the technology is used for the welfare of human beings, it is necessary that in our country with its excellent scientific background important and influential steps shall be taken toward attaining knowledge- based cities. During the recent decades, with the establishment of science and technology parks and development of universities a huge movement has been emerged toward the development of infrastructures required for knowledge- based cities. However, these infrastructures are not sufficient and many measures must be taken for this purpose. Industrial cities as important economic and demographic places are highly important; because industrial cities due to their direct linkage to technology, science, and employment and income generation are alternatives of knowledge-based cities achievement. Arak City is one of industrial hubs of Iran where many industrial units are established and since this city acts as a communication highway, its communicative situation has promoted the development of industry and its related industries. Hence, in present study the indices of knowledge- based city in Arak are investigated and by applying strategic planning and evaluation techniques the status quo is clarified and the potentials and limitations of Arak City are identified in order to find if industrial cities such as Arak possess required potentials to become a knowledge- based city and what are the approaches that make the achievement of knowledge- based cities possible?

2- Literature Review

a) Foreign Researches

Ergazakis et al. (2004) in an article titled "toward knowledge- based cities, analysis of concepts and successful cases"

expressed the concepts and definitions related to knowledge- based city and also explored the factors affecting the success of these cities and they referred some successful examples such as Barcelona and Melbourne.

Ergazakis et al., (2006) in a research entitled "A unified methodological approach for the development of knowledge cities" investigated the achievements of the six successful cities of Barcelona, Munich, Stockholm, Montreal, Dublin and Delft in knowledge-based field. The ways to reach knowledge city are summarized in the following:

1. Recognizing the city's current situation to reach a knowledge-based city by identifying strengths and weaknesses. 2. Establishing a comprehensive operational plan to understand the strategies provided for the city. 3. Implementing the plan that the knowledge-based Commission or the City Council will take on several responsibilities such as the implementation of the plan. 4. Evaluation of plans, reviewing and measurement of work progress, as well as the effectiveness of plans and programs to address their shortcomings, are essential.

Yigitcanlar et al., (2008) in their study titled "development of knowledge cities; Melbourne's experience in the development of knowledge- based city" investigated the concepts and principles of knowledge-based city and explained the experience of Melbourne in implementing precise cultural, scientific, technological and innovative models as well as urban policies and economic- social development; they finally argued that Melbourne is an emerging knowledge- based city that identification of its success factors and presentation of ideas to the policy makers of other cities in designing and development of knowledge- based cities would be useful.

b) Iranian Researches

Ghavamifar et al., (2008) in their article titled "Presentation of knowledge management strategic model in creation and development of knowledge- based cities" investigated and explained the concept of knowledge- based city and its advantages and requirements; they also presented a model for supporting the decisions of policy makers.

Karimi & Jamalinejad (2011) in an article titled "indicators of knowledge-based development in Isfahan" studied the indicators of knowledge- based indices and they concluded that Isfahan has made achievements more than ever and that investigating the performance of fundamental indices of science and technology development is essential in planning and developing knowledge-based community.

Karimi et al., (2013) in an article titled "development of a fundamental approach for creation of a knowledge- based city in Isfahan in line with promotion of knowledge-based active economy" concluded that in order to achieve knowledge- based development, continuous interaction between the citizens on one hand and their interaction with the people of other cities on the other hand is a necessity and moreover knowledge- based measures should be directed toward a favorable path by implementing a multilateral monitoring system and strategic analyses. Besides, they analyzed the situation of Isfahan using SWOT technique.

Kharazmi et al., (2013) in a study titled "Evaluation of national- wide communication in development of knowledge- based cities in Iran: opportunities and challenges" referred to the key role of knowledge in

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the 21th century and concluded that knowledge- based cities are effective on achieving sustainable development and economic progress. The results showed that while Iran is evaluated in some of the 12 main dimensions, it has a relatively good position, but some indicators need more attention so that they can realize the goals of the 1404 vision document and move towards the creation of knowledge-based cities.

3- Theoretical Framework

Knowledge- based development approach was first formed in 1995 for restoration of European and American industrial cities through upgrade of human and institutional capacities and development of favorable environments for creativity, innovation, education and change. By development here, we not only mean economic growth but also all parameters that reflect life quality and sustainability in an international context; therefore it is different from traditional production- centered activities. Knowledge-based development emphasizes on the terms of soft factors, namely software, living creatures and compatibility and it requires different strategies (Karimi and Jamalinejad, 2011).

A knowledge- based city is a place the goal of which is development based on knowledge through encouragement, creation, sharing, evaluation, renewal and update of knowledge in a constant manner through sustainable interaction of the citizens of a city with each other and with the citizens of other cities by supporting the share of knowledge, suitable design and implementation of information technology infrastructures and networks (Naseri & Ghavamifar, 2007).

The relatively new concept of knowledge- based city has attracted the attention of many international organizations, city administrators, research communities and researchers during recent years. Important international organizations such as the World Bank, European Commission and United Nations have applied the framework of knowledge management in their strategic orientation concerning development. This series of strategies imply the strength of the relationship emerged between knowledge management and urban development. From research point of view, it is evident that the nature of urban development is linked with the activities of knowledge sector that requires conditions and an environment different from producing industries (Kiani et al., 2010), (Yigitcanlar et al., 2008).

Knowledge city, from physical and institutional viewpoint incorporates the performance of science and technology parks into city performance and in terms of performance it is a city designed purposefully where knowledge is fostered and covers such concepts as knowledge corridors, knowledge village and knowledge regions. Hence, a knowledge city may play a role in the development of wealth and employment, rapid growth of income in society, life quality of citizens, providing effective access to transportation infrastructures, urban design and architecture that links modern technologies, enhancement of specialized competition, implementation of influential commercial networks, development of access potential to other markets, promotion of citizens' education and skills, supporting collaborative and competitive business culture, presenting creative and responsive public services that facilitate the

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manifestation of tolerance culture where diverse cultures are welcomed based on meritocracy (Nabipour, 2013).

Any scientific phenomenon that emerges possesses unique features that as a scientific paradigm respond to daily needs and issues. The subject of knowledge- based city as a new approach has many advantages referred below:

Economic and Organizational Advantages:

- Employment with good income and reward;
- Fast growth of society's income and wealth;
- A more sustainable economy with technological innovations and transnational investments;
- Resuscitation of handicrafts;
- Promotion and glory of city and confidence building for reinvestment of local funds within local economy;
- Enhancement of risk taking that helps to the formation of entrepreneurship culture;
- Creation and innovation as the central elements of development
- Persistent alliance between universities, companies and creators

Social and cultural advantages:

- Greater opportunities for wealth sharing through investment on public fields and better investment of social safety networks;
- Formation of knowledge- based cities that provide updated knowledge in an on time manner;
- Better educational guarantee and linked networks of schools;
- Providing an environment tolerated by majorities and immigrants;
- Leadership in cultural production and cultural industry;
- Tools that provide access to knowledge for citizens;
- Access to new communication technologies for all citizens.

Physical and Environmental Advantages

- To become pioneer in the subject of digital region;
- A city planning and architecture that combines new technologies;
- Application of and manifesting natural, architectural and historical heritage of city as an attractive factor
- Improvement of natural and artificial environment restoration and increase capacity
- More society commitment for deciding about environment (Nabipour, 2013)
- Yigitcanlar in a study indicates the development of knowledge- based urban realm as plotted in figure 1:

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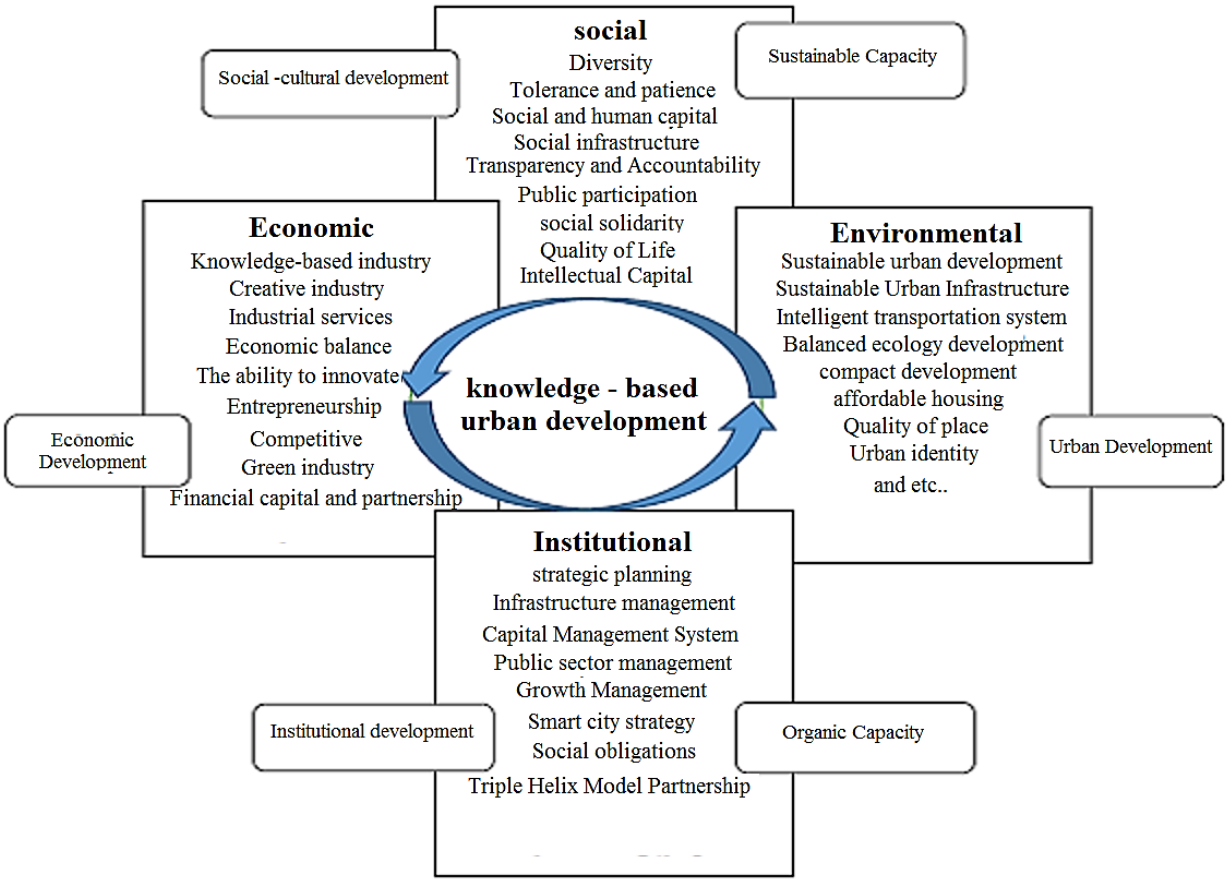

Figure 1: knowledge- based urban development

Reference: (Yigitcanlar, 2011)

According to Lee, there are 9 solutions for achieving knowledge- based cities:

1- Identification of status quo and weaknesses and strengths

2- Diversity in specialty

3- Highly skilled organizations

4- Dynamic education concerning society and economy

5- Conferring distinguished role to knowledge- based cities

6- Organizing strong linkages and connections within and outside urban region

7- Presence of a powerful leadership;

8- Development of physical knowledge-based cities (Lee, 2007).

Ergazakis et al. in a study titled "an integrated methodology for achievement of knowledge- based urban development "investigated the achievements of six successful cities (Barcelona, Munich, Stockholm, Montreal, Dublin and Delft) concerning knowledge- based status and summarized the ways by which knowledge-based cities are attained:

1- Understanding the status quo for attaining a knowledge- based city based on identification of weaknesses and strengths: defining and presenting some strategies based on current situation of the city including: promotion of knowledge-based city concept; promotion of management process in the city's knowledge, promotion of city infrastructures and citizens' knowledge, attraction of public participation, to pay special attention to and supporting the research, innovation, creation and entrepreneurship; attraction of state sector participation in the improvement and

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survival of this concept, enhancement of communication with other knowledge-based cities, promotion of human force skills and participation and collaboration of different nations and cultures in international level.

2- Development of a comprehensive operational plan: for understanding the strategies presented for the city;

3- Execution of plan: the commission or a body of knowledge- based city has many responsibilities such as execution of the plan.

4- Evaluation of plans: investigating and measuring the progress degree and also the efficiency of plans and programs is essential for elimination of weaknesses (Ergazakis et al., 2006).

Naturally, in order to achieve any phenomenon, there needs to be basic infrastructures and conditions in the context of knowledge- based cities including: human resources, education, information technology, culture, etc. and these have mutual relationship to each other and they impact systemically on each other; hence, basic infrastructures and current situation in under study area are as follows:

1- Science and Technology Park: science and technology park of Markazi Province is located in Arak City established in 2002. At present. There is a technology units center in this park. In 2008, a permit was issued for this park to establish a satellite growth center in Saveh County and at the same time another satellite growth center was established in Tafresh County (www.astp.ir). The priority of activities in the science and technology park of Markazi Province are as follows:

1) Chemical materials and products

2) Metallic products (machineries and equipment and production of parts)

3) Information and communication technology and industrial automation

4) Technologies related to aluminum industry

5) Other technical and engineering fields (agriculture, animal husbandry, environment, etc.).

2- Centers of science and technology growth: the main fields of the activities of technology units growth center of science and technology park of Markazi Province given the main industrial activities of this province and their structures and also its past 10 years experiences include chemical and metallic industries, information and communication technology, agricultural industry and biotechnology.

The goals of this growth center include: to help to prototyping and production of products supplied to the market, pave the way to commercialize the research achievements, to provide an environment for the growth and development of startups, to provide entrepreneurship grounds and supporting innovation and creativity of intellectuals (www.astp.ir).

Moreover, today there are 36 growth center units in the science and technology park of Markazi Province.

3- Industrial townships: at present there is three industrial townships in Arak (including Abik Abad, Khomein and Kheyrabad junction and Amirkabir township which is under investigation and study) and due to enjoying big and parent industries with highly technical and specialized features, experience of 4 decades of industrial implementation and development, enjoying an excellent geographical location and proximity to important demographic and industrial hubs (Tehran and Isfahan), being placed in north- south international transportation corridor and east- west communication

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axes of Iran and national railroad and energy supply route (oil, gas and power), presence of abundant metallic and non-metallic mineral resources this area is a valuable option for investment and above factors and many other parameters has induced increasing interests of industrialists and industrial investors for the purpose of optimized utilization of underlying facilities and services in industrial townships of Arak and other counties of this province and these townships have faced with favorable fortuity (www.miec.ir).

4- Higher education centers: Arak City has 25 centers for higher education purposes including 7 state centers, one Payame Nour center, 14 scientific-applied centers, 2 Islamic Azad universities and one non- profit center. The number of students in 2011 was 50810 ones in this city of whom 26% study in state universities, 15.5% in Payame Nour university, 12.8% in scientific- applied centers, 43.7% in Islamic Azad universities and 2% in non-profit universities (encyclopedia of Markazi Province's higher education, Markazi's social office of governorate).

5- Theology centers: in Arak these theology centers are active: Imam Khomeini center (previously known as Sepahdari), Agha Ziaeddin School and Haj Mohammad Ibrahim School.

Study Area

Arak City is located in geographical coordinates at 49" 42' longitude, 34'' 5' latitude in Iran's Central Plateau and its average height is 1755 meter from sea level. Current area of plateau is 5400 Km^2 of which 2400 Km^2 is Arak Plain and the rest is surrounding altitudes. Figure 2 indicates study area.

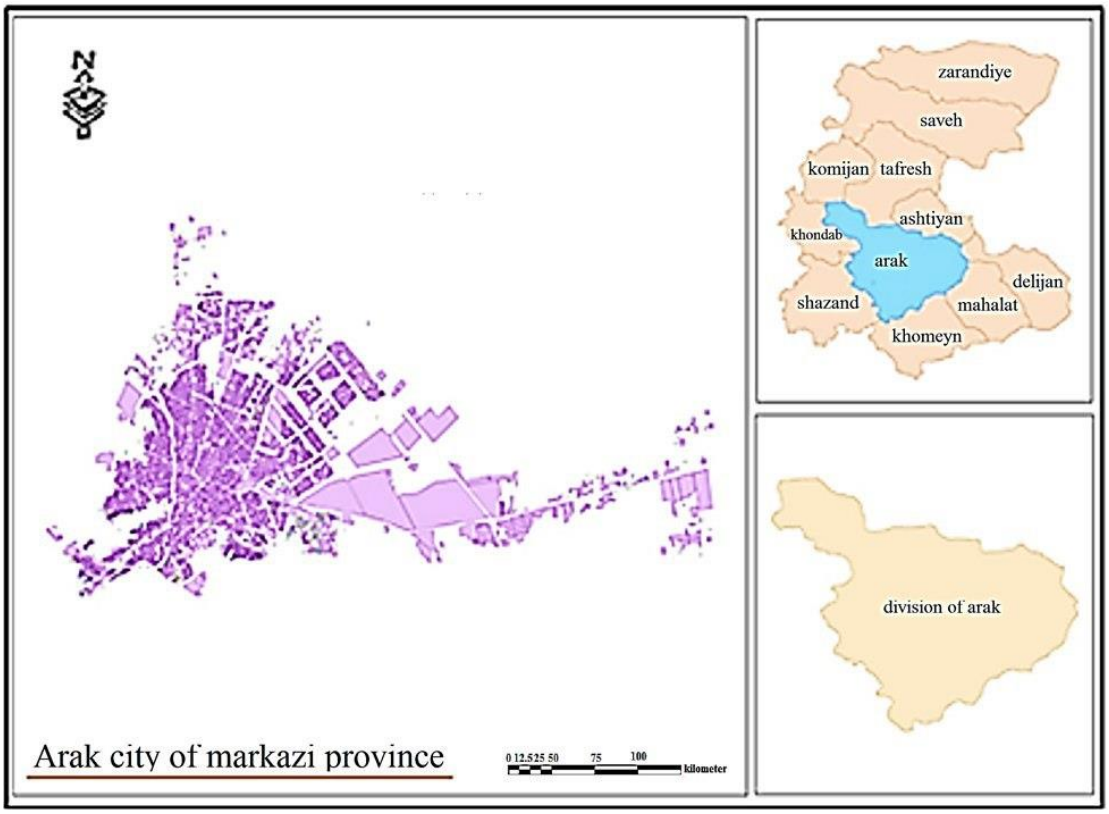

Fig.1. study area

Reference: (Google Map)

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4- Research Method

The present study is a descriptive-analytical study and its findings are of applied type. Required data and information was collected through documentary-library study method and also using the statistics of related organizations and centers during 2013. The indicators used in this study are indicators of higher education. Scientific and research centers, number of schools, etc. moreover, SWOT and PESTEL decision-making techniques were applied.

SWOT and PESTEL analysis

1- SWOT strategic model

SWOT technique is a tool for identification of existing threats and opportunities in the external environment of a system and recognition of its internal weaknesses and strengths in order to measure the situation and design a strategy for the control and guide that system. In other words, this model is a kind of organizational analysis that helps organizations to analyze their internal resources during weak and powerful periods and coordinate them against external environment during threat and opportunity periods. This method is the best strategy for organizing the space (Moradi Masihi, 2002). The key point of this model is that it conducts domain analysis of all situational aspects of system and therefore it provides a useful framework for the selection of strategy (Mobaraki, 2007).

2- PESTEL analysis

One of the important analyses used for evaluation of the position is PEST or PESTEL analysis (Chapman, 2010). All organizations require identifying external factors in their environment, so that they could identify the impacts on the operations; but organizations often have no control on them although they understand required concepts. There are known tools for identification of these external factors one of which is PESTEL analysis that is able to investigate political, economic, social, technological, legal and environmental issues (www.free-management-ebooks.com)

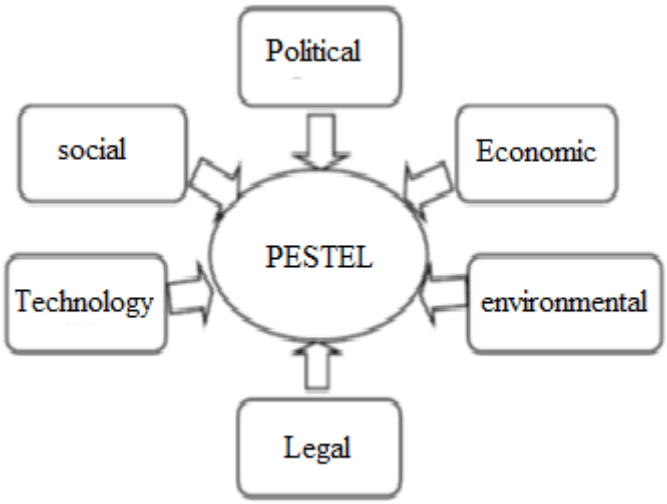

Fig.2. PESTEL analysis

PESTEL is an abbreviation for political, economic, social, technological, legal and environmental factors used for evaluation of strategic programs of organizational units.

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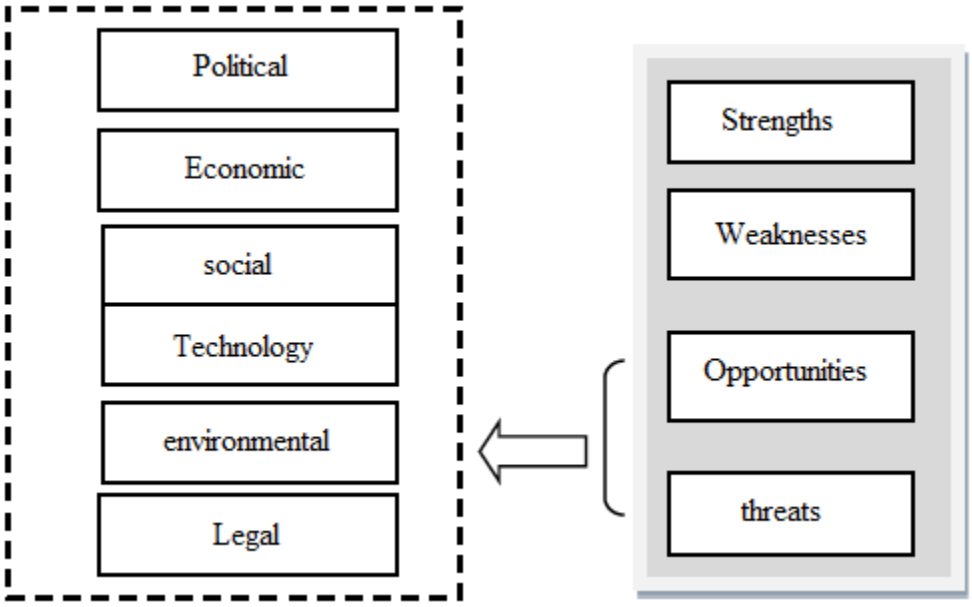

Fig.3. SWOT, PESTEL analyses

Reference: (www.jiscinfonet.ac.uk)

Given above explanations about the techniques used in this study, we investigate the weaknesses, strengths, opportunities and threats concerning study area indicated in table 1.

Table1. Internal factors (strengths and weaknesses)

Strengths		Normalization	Calibration	Weighted score
S1	Establishment of important national and international industries in the city	0.143	4	0.571
S2	Availability of Arak University, Arak Industrial University and Medical Science university and other higher education centers	0.238	4	0.925
S3	Favorable communicative situation of the city	0.048	2	0.095
S4	Availability of suitable urban infrastructures	0.190	2	0.381
S5	Proximity to the capital	0.095	1	0.095
S6	High active population in industrial and servicing sectors	0.143	3	0.429
S7	Being located in north- south transit corridor (railroad)	0.095	2	0.190
S8	Easy access of other counties to the province capital (Arak)	0.048	1	0.048
Weaknesses		**Normalization**	**Calibration**	**Weight score**
W1	Air pollution	0.071	2	0.143
W2	Informal accommodation in the city	0.036	2	0.071
W3	Worn out structures in the city center	0.036	1	0.036
W4	Improper land- use location and distribution	0.107	2	0.214
W5	High population and lack of facilities	0.143	4	0.571
W6	Unemployment and related adverse consequences	0.107	3	0.321
W7	No urban waste recycling and lack of landfill	0.071	2	0.143
W8	Horizontal and dispersed urban growth	0.107	3	0.321
W9	Merging the villages of suburbs	0.071	1	0.071
W10	Shortage of information technology infrastructures in the city	0.179	4	0.714
Total		1		2.607

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5- Research Findings

Feasibility Study of Knowledge- Based Urban Development in Arak Using SWOT & PESTEL Model

The next stage is identification of external factors, namely the threats and opportunities that are evaluated based on PESTEL model relative to political, economic, social, legal, technological and environmental factor as indicated in tables 2 and 3 respectively.

Table2. External factors (opportunities based on PESTEL model)

Sector		Opportunities	Normalized	Calibration	Weighted score
Political	PO1	Attraction of more support by authorities	0.023	4	0.091
	PO2	Development of state's political relationships with other countries concerning knowledge- based issues	0.030	2	0.061
	PO3	Innovation in knowledge- based city toward foreign relations development	0.038	4	0.152
	PO4	Transparency in measures and planning	0.015	2	0.30
Economic	EO1	High employment opportunities in industrial and service fields	0.023	3	0.068
	EO2	Encouragement of private sector in investments	0.030	3	0.091
	EO3	Increasing the production, supply and demand	0.015	1	0.015
	EO4	Motivation of municipalities for sustainable income generation	0.030	4	0.121
	EO5	Reduction of costs and preventing the waste of resources	0.023	3	0.068
	EO6	Sustainable economy and fostering entrepreneurship culture	0.038	4	0.152
	EO7	Promotion of competition, innovation and creative industry	0.038	3	0.114
	EO8	Economic equilibrium	0.023	3	0.068
	EO9	Development of industrial products exportation	0.015	2	0.030
Social	SO1	Upgrade the living quality and viable and vivid cities	0.030	4	0.121
	SO2	Implementation of social justice and optimized distribution of services	0.023	3	0.068
	SO3	Integrated urban management	0.015	4	0.061
	SO4	Renovation and empowerment of problematic urban areas	0.023	2	0.045
	SO5	Creation of knowledge- based society	0.038	4	0.152
	SO6	Accessibility of new communication technologies for all citizens	0.038	4	0.152
	SO7	Tools that facilitate citizens' access to knowledge	0.030	3	0.091
	SO8	Education and culturization of citizens in using the technologies	0.038	4	0.152
Technological and infrastructural	TO1	Assigning huge budgets to knowledge- based researches	0.030	4	0.121
	TO2	Development of smart transportation systems	0.015	3	0.045
	TO3	Development and promotion of different technologies	0.030	2	0.061
	TO4	Enhancement of related urban infrastructures for making the city knowledge- based	0.038	4	0.152
	TO5	Development and promotion of internet throughout the city	0.038	3	0.114
	TO6	Utilization of state of the art technologies in urban installations and updating them	0.023	3	0.068
Legal	LO1	Modification, revision and updating the rules and regulations	0.023	3	0.068
	LO2	Enactment of operational regulations concerning knowledge- based city	0.030	4	0.0121
	LO3	Transition from lawlessness toward clear and efficient goals	0.023	2	0.045
	LO4	To add new rules and responsibilities in urban affairs	0.015	3	0.045
Environmental	EnO1	Independence from harmful industries to the environment	0.038	4	0.152
	EnO2	To promote the culture of natural spaces and urban environment protection	0.023	4	0.091
	EnO3	Reduction of environmental pollution, noise and visual pollution	0.030	3	0.091
	EnO4	Protection of environment and upgrading environment quality	0.023	2	0.045
	EnO5	Development of NGOs' activities	0.030	4	0.121
	EnO6	Implementation of ecological balance	0,015	3	0.045
Total			1	-	3.288

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Table3. External factors (threats based on PESTEL model)

		Threats	Normalized	Calibration	Weighted score
Political	PT1	Little state's collaboration in completion of projects	0.053	4	0.211
	PT2	Changes in government's cabinet and its impact on the projects	0.035	1	0.035
	PT3	Lack of systematic and integrated government cabinet in decision making	0.018	3	0.053
	PT4	Break up with foreign countries	0.070	2	0.140
economic	ET1	Unemployment or little employment opportunities for illiterate citizens	0.070	4	0.281
	ET2	High inflation rate due to high demand as a result of urban investments	0.053	1	0.053
	ET3	Reduction of growth and development due to no update of society's knowledge	0.088	2	0.175
	ET4	Economic dependence if the knowledge is not localized	0.053	3	0.158
Social	ST1	Effects of globalization on the cities and cultural impacts	0.053	3	0.158
	ST2	Fading out some cultural customs and traditions	0.018	2	0.035
	ST3	Isolation of some of illiterate citizens due to technological progress	0.070	4	0.281
Technological	TT1	Inefficiency of technological infrastructures	0.070	4	0.281
	TT2	Lack of and inefficiency of required technologies in the city	0.088	3	0.236
	TT3	Incompatibility of technologies with the literacy level of citizens	0.053	3	0.158
Legal	LT1	Fade out of the importance of knowledge- based city in law enactments	0.035	2	0.070
	LT2	Non- execution of related laws	0.070	3	0.211
	LT3	Non- integrity of regulations and laws	0.053	4	0.211
Environmental	EnT1	Irregularity of ecosystem of region due to intervention in natural environment	0.018	3	0.053
	EnT2	Imbalanced utilization of resources and mines	0.035	4	0.140
Total			1	-	2.965

Given the findings obtained through application of two mentioned techniques, it was determined that the scores related to available strengths and opportunities are higher than the weaknesses and threats; therefore we conclude that Arak city has favorable conditions and its potentials may come true by precise planning and strategies.

Now, given the list of strengths, weaknesses, opportunities and threats, we obtain considered strategies from interaction of these factors and four solutions, namely SO, ST, WO and WT are designed.

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6- Conclusion and Discussion

In todays' world, we witness the growth and progress of knowledge in different fields. During recent decades, the subject of knowledge is incorporated into urban subjects and is expressed with such titles as: knowledge- based cities or knowledge- centered cities. Some of successful examples of knowledge- based cities include Montreal, Munich, Stockholm and Barcelona that has gained huge experiences in this regard. In present study, given the investigations made through studying the resources related to knoeldge- based cities and available statistics of Arak City and also through identification of current situation of the city and extraction of internal factors (weaknesses and strengths) and external factors (opportunities and threats) by applying SWOT and PESTELE techniques considered strategies were designed. The results indicated that Arak City has the potential to become a knowledge- based city and that by strengths the weaknesses must be reduced; moreover, the threats must be reduced by the opportunities. The strategies presented in this study are based upon these principles referred below:

Table4. Presented strategies in order to achieve knowledge-based development in Arak industrial city

WO strategy	SO strategy
WO_1: To have scientific and research foundations participate in urban problem solving; **WO_2**: Creativity and innovation in knowledge- based activities for applying active forces of society; **WO_3**:Development of educational activities for promotion of society's people; **WO_4**: Application of new knowledge for promoting the urban infrastructures and systems.	**SO_1**:Develop and improve the relationship between scientific and research centers with industry **SO_2** Upgrade urban infrastructures by attracting the investments toward development of knowledge- based city; **SO_3**:Development of NGOs' activities concerning protection of urban environment **SO_4**: Promotion of industrial products based on creativity and reliance on knowledge in order to compete in market **SO_5**: Attract social participation for the achievement of knowledge- based community.
WT strategy	**ST strategy**
WT_1: To invest on the improvement of information technology infrastructures **WT_2**: To attract the trust and collaboration of citizens for solving problematic areas of city **WT_3**: To apply the new knowledge if urban management in solving issues such as air pollution and wastes; **WT_4**: To make culture and train the citizens.	**ST_1**: Prevent the isolation of illiterate citizens by applying the activities of higher education centers; **ST_2**: Prevent break up with foreign countries through improvement of creativity and quality in industrial products; **ST_3**: To use strategic situation of the city to attract high ranked authorities' attention; **ST_4**: To use scientific foundations of universities in protecting the culture, environment, entrepreneurship and clean industry.

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