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The Status of Qaen City in Regional Development of North of Southern Khorasan Based on Future Studies Approach: Scenario Planning

Marzieh Amini
Affiliation: PhD candidate in Geography and Urban Planning, Faculty of Literature and Humanities, Ferdowsi University of Mashhad, IRAN

Mohammad Ajza Shokohi*
Affiliation: Associate Professor, Department of Geography and Urban Planning, Faculty of Literature and Humanities, Ferdowsi University of Mashhad, IRAN

Barat Ali Khakpour
Affiliation: Associate Professor, Department of Geography and Urban Planning, Faculty of Literature and Humanities, Ferdowsi University of Mashhad, IRAN

Mohammad Rahim Rahnama
Affiliation: Professor, Department of Geography and Urban Planning, Faculty of Literature and Humanities, Ferdowsi University of Mashhad, IRAN

ABSTRACT

Future study is a purposeful organized process, resulting in gathering key actions of science and technology to draw a feasible future and the ways to achieve such a future. The current study addressed the future development of Qaen city using the future study approach and based on the scenario planning and aimed to identify the key components of the regional development and draw a desirable future of Qaen city based on the future study. This research is applied in terms of purpose and descriptive-analytical in terms of new methods of future study. The data collection method was document and field studies, and the data process models are Delphi and Scenario planning. In total, 2 strong scenarios, 12 believable scenarios, and 242 poor scenarios were obtained in the current research using Scenario Wizard software and forming the cross-impact matrix of 30×30. According to research results, there are three scenarios with a high probability of occurrence for the future conditions of Qaen city. In the first scenario, which is called balanced development, there are desirable conditions based on the relative economic growth, Gross National Product, industrial and production prosperity, investment in the province, desirable policies, development of the universities, investment security, desirable production technology, favorable job creation, and improving the main roads. It is also the most desirable scenario for improving the status of Qaen city in regional development.

Key words: Future Study; Regional Development; Scenario Planning; Qaen city.

INTRODUCTION

Problem Statement

Nowadays, given the rapid environmental changes and their resulted unreliability, cities and regions always face a complicated and uncertain future (Kryukova et. al., 2021; Maroufan et. al., 2019). Planning is to make a change in the future, and as a result, the unknown problems must be understood (Abbott, 2005: 237). The necessity to know the probable changes of the future try to predict the future based on past observations, and previous and present trends (Nazemi and Ghadiri, 2006, as cited in Amjadi, 2016). However, the future cannot be predicted (Mozaffari, 2009: 1). Such uncertainty in planning made it inevitable to change from the predicting approach to the future study approach (Pourmohammadi et al., 2010: 37-58). The future study provides decision-makers with various methods to achieve comprehensive evidence for predicting and probable future changes (Dixon et al., 2018: 781). Drawing plausible and desirable futures provides a way for experts, policy-makers, planners, and managers to step in the future with more confidence for the maximum use of the resources and create opportunities (Mozaffari, 2010, 15; as cited in Zali, 2009). Future study is the manifestation of the human will and authority in building the future. It is subject to the normative pattern in which the planning is towards the desirable future, and by being in it and observing the present and past, determines specific paths for building the development from the future to the present (Balali, 2012, 10; as cited in Amjadi, 2013). In Iran, planning thinking has experienced ups and downs over history, from budget allocation planning for short terms to developing one-year and five-year plans and spatial planning for 20-year vision plans. In the meantime, the traditional perspective of planning was changed to strategic planning and eventually improved to strategic thinking. Traditional planning mainly focused on analyzing the previous data, and continuing the trends and approaches was enough in planning for the future. However, nowadays, planning thinking relies on future

studies more than present and past. For scholars of this area, the future could be completely different than the past and present and not be the continuation of the past trends (Zali, 2013, p.2).

As the second city of Southern Khorasan, Qaen has a proper opportunity to form a special economic zone by having strategic position (geographical, political, and economic), rich resources (suitable weather for agriculture, existing of the rich mineral reverses), having natural landscapes and tourism attractions, especially nature tourism, and the existence of efficient yet young human force. In recent years and the export and domestic trade, a relatively desirable ground was provided in this regard, including a border market, which has great potential for creating a special economic zone in this area, realizing it can result in a considerable change in the economy of Qaen city. The location of Qaen city in Mashhad-Zahedan Asian Freeway (Northern-southeastern bypass) and neighboring to Afghanistan is a proper opportunity for the emergence of economic growth both for Province and Iran. The economic activists in the neighboring provinces and even farther ones can use the neighboring opportunity of Qaen city with Afghanistan and establish or develop their economic-business relations (and in the entire country) with Afghanistan. Although this city has numerous capabilities, there are many limitations as well. In the industry sector, the lack of growth affected the technologies. Similarly, this small economic part of Qaen did not feel the urge to use new methods and updated technologies in the production process due to the lack of tendency and competition power to expand its market sales and supply of products. Also, it continues to maintain its minimum market by the minimum infrastructural costs and depending on the traditional methods and technology. Qaen enjoys an undeveloped economy in terms of socioeconomic indicators. Although the main activity in Qaen is agriculture, and the county ranks first in terms of the area under cultivation and producing many products, such as barberry and saffron, extensive dominance of the non-productive services and lack of a productive economy in province and county made Qaen a burden on the provincial and national economy as an additional consumer. Also, it would be better for this city to have a significant status in the economy of the province due to the cultural, natural, and climate attractions of the province and tourism of this county as a base activity. However, this prosperous service sector does not have any value-added for the province. The lack of rail transportation and domestic, national, and even international flights on a broader scale are the weaknesses of the transportation services of Qaen city. By having various potentials in agriculture, Qaen city could not achieve accomplishment economically the main reasons for which are as follows: traditional production system and dissociation of this system and its producing factors. For instance, lack of water, lack of organic methods and technologies in agriculture, lack of knowledge of the farmers in producing and exporting organic agricultural products, migration of villagers to the cities outside and inside the province led to the reduction in the workforce and investment in the agriculture sector and growth in the false and unofficial jobs inside the county. These issues are only a small part of the constraints and barriers of the development of this county. Therefore, the main issue is how Qaen can be in the development path and how this development path can be studied and explained well. The current research aims to determine and study the possible and desirable development scenarios of Qaen in future years using future study methods.

RESEARCH THEORETICAL FOUNDATIONS

Planning based on future study approach

In Iran, planning thinking has experienced ups and downs over history, from budget allocation planning for short terms to developing one-year, five-year, and spatial plans for 3-year vision plans. Similarly, the traditional perspective of planning was changed to strategic planning and eventually improved to strategic thinking. Traditional planning mainly focused on analyzing the previous data, and continuing the trends and approaches was enough in planning for the future. However, nowadays, planning thinking relies on future studies more than present and past. For scholars of this area, the future could be completely different than the past and present. This trend is not necessarily the continuation of past trends. In the traditional methods of planning, the planner must first ask this question: What will happen in the long term? The planner predicts and then considers the projections the basics for decision making and policymaking and acts upon them. In other words, this process starts from the current situation and moves towards the future. However, in the new perspective of planning, the planner first goes to the horizon of the future, and by being there and observing the past and present, determines particular paths for building the development and refinement (Ibid). Nowadays, understanding the features of the space through research in the system and its ruling relations and the structure of the spatial system made researchers use quantitative models and methods to determine the rule and create it in the space. Optimal use of these models can significantly contribute to improving the development processes in Iran (Sarmast and Zali, 2010, 63).

Addressing the future and planning is an integral part of the planning process in the urban and regional planning or national and regional development plans. In most cases, addressing the future based on projecting and analyzing the processes has caused numerous problems in implementing the plans. These issues are often due to the lack of attention to the effects of the emerging technologies in human life or neglect the drive forces and influential key factors in facilitating problem-solving or the development challenges of the future. Neglecting the main forces and drivers in the development process will eventually weaken them, and show their negative effect on the whole system. Nowadays, future study approaches in planning focus on finding main factors and development drivers in the space of the planning. The planner can deal with the desirable architecture of the future using future management and control (Ibid). It seems that based on the issues related to the future study and the necessity of using it in development planning, using planning frameworks of the 7th century in current conditions will not result in positive consequences. Therefore, summarizing the issues raised about futures studies and its theoretical issues, this section addresses the issue of the planning process and the need for change in it, and by criticizing the existing trend, especially in urban and regional studies, the new trend and its dimensions are presented and discussed. According to planning scholars, it is a conscious process to solve the current problems and achieve a way to change the social system, predicting a set of regular and supervised executive operations considering future priorities. This definition of the planning process is almost universally agreed upon by most planning thinkers and has the following six main features (Masoumi Ashkouri, 2008, 15): being process-oriented, knowledge, focus on problem-solving, focus on

prioritizing, determining the goal, policymaking, selecting the process in planning due to the ability to a perfect definition of the problems, limitations, facilities, optimizing the options, logical decision making and the possibility to provide feedback, and reconsidering this process includes six general stages in the current planning approach.

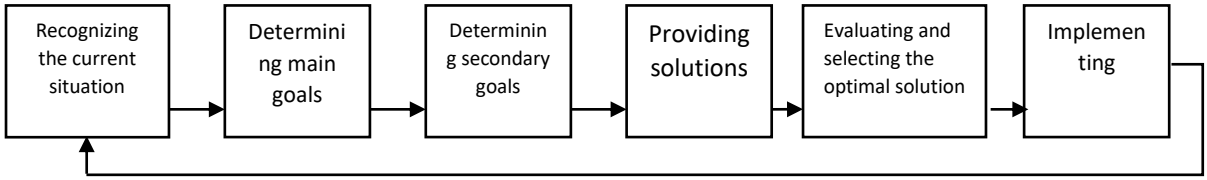

Figure 1: Current planning process Source: (Masoumi Ashakouri, 2008: 1-2)

In this method, planning is linear and has feedback after implementation. Its main part is determining main goals. In this step, the situation of the future is predicted, and the main goals are determined based on an exploratory approach and analyzing the past trends. As explained in the previous section, in this perspective of planning, the future evolutions have clear relationships with the present and past evolutions, and the dissociations and amazements of the technological and scientific tools are not considered in predicting the future world (Masoumi Ashkouri, 2008, p. 67). What is currently observed in urban and regional studies, especially master and detailed plans and national and regional macro-plans, and the result of their implementation indicate the exploratory approach in projecting the future, regardless of the capabilities of science and technology and the impact and their application in solving today's problems. In other words, solving current challenges based solely on the capabilities of today's science and technology will result in inappropriate and sometimes incorrect projections for long periods. This approach will cause many implementation problems for managers and planners over time and with the emergence of new developments, indicating the inefficiency of exploratory approaches in planning. It seems that the need for change from predicting approach to future study is inevitable in urban and regional planning, as one of the social and humanity branches, in which the future studies are used more (Zali, 2009, p. 45).

Future Study and Regional Development

The future study originates from the need to be prepared for the future, i.e., optimal use of the resources to achieve comparative advantage, improving quality of life, and sustainable development. The future study focuses on the human's role in building own future in addition to accepting national events. Since the early 1990s, European countries have tried to use this tool at the regional level to manage the land. Future study of the regional development is used for long terms, development of the regional prospect, and predefining promising areas for their realization.

Regional foresight study can be defined as a regular and participatory activity, and collecting information of the future to complete the process of the midterm prospect to make daily decisions for the regions to stimulate all the joint measures to achieve a desirable future (FOREN, 2001, 7). According to screening the definitions of the regional foresight study and regional development, it can be concluded that implementation of the regional development thinking in the functional aspect of the socio-economic activities and spatial division of the human activity and realm can be achieved by using the regional foresight study; Because the different types of planning can be implemented operationally for regional development, including sectoral or spatial planning based on future study approach. In other words, all the features of the regional foresight study are to achieve a desirable future, including systematic, participatory, futuristic, prospect, goal-oriented, mobilization of the stakeholders, and sharing the measures. It is an essential component to achieve regional development, leading to dividing the basics and approaches of the theories in the duality of the future study and regional development. FOREN plan of the European Union is one of the incentives to encourage the countries of this region to use this tool at the regional level. The main reason for understanding the future study is that future is increasingly dependent on selecting the human's action. Therefore, the common goals must be integrated into future studies (Hanssen, 2008, p. 1735).

According to FOREN guidelines, regional foresight study includes five essential elements (Gavigan, 2001, p.4):

Regional foresight is the structural estimation and recognition, dealing with development in technology, social, and economic aspects in the long term.

Using interactive and participatory methods in exploratory discussions.

Analyzing and studying a broad range of stakeholders is one of the regional foresight characteristics (in contrast to many traditional foresight studies, their main feature is the tendency of all experts and stakeholders for participation).

Using an interactive approach leads to creating new social networks. In some of the foresight activities, these networks are used to produce official outputs ad products. However, creating such networks is of significant importance for many foresight thinkers.

The official product of the future study is beyond providing scenarios and plausible planning. What is important is developing a strategic view that can create a common sense of commitment.

Created common view is not solely for the embodiment of utopia, but the desirability of such attitude is associated with the possibility of achieving that view. This view leads to identifying and explicitly explaining the updated measures and decisions to implement this view.

RESEARCH METHOD

The current research was applied, analytical-descriptive, and exploratory. The research method was a mix of survey and documentary studies. The statistical population included the provincial governor, governor, congressman, experts, university professor, and the chairmen of executive organizations of Qayenat county. A researcher-made questionnaire based on the theoretical foundations and studying the spatial plan, detailed and master plans of the considered area was used to collect the data. The statistical population of the research included 30 faculty members, experts, and researchers of future study of regional development using the Delphi method. The sample size was determined using a non-random sampling method. Purposive sampling methods are used for sampling the study individuals in the research instead of the random sampling method. The researcher tries to select people to realize the research purpose in this sampling (Bazargan, 2015, p. 54).

Geographical location

Ghayenat county is located between 58 degrees and 34 minutes to 60 degrees and 57 minutes northern longitude and 33 degrees and 5 minutes to 34 degrees and 8 minutes eastern latitude. This county is limited to Zirkuh county from the east, Khorasan Razavi province from the north, Sarayan county from the west, and Birjand county from the south.

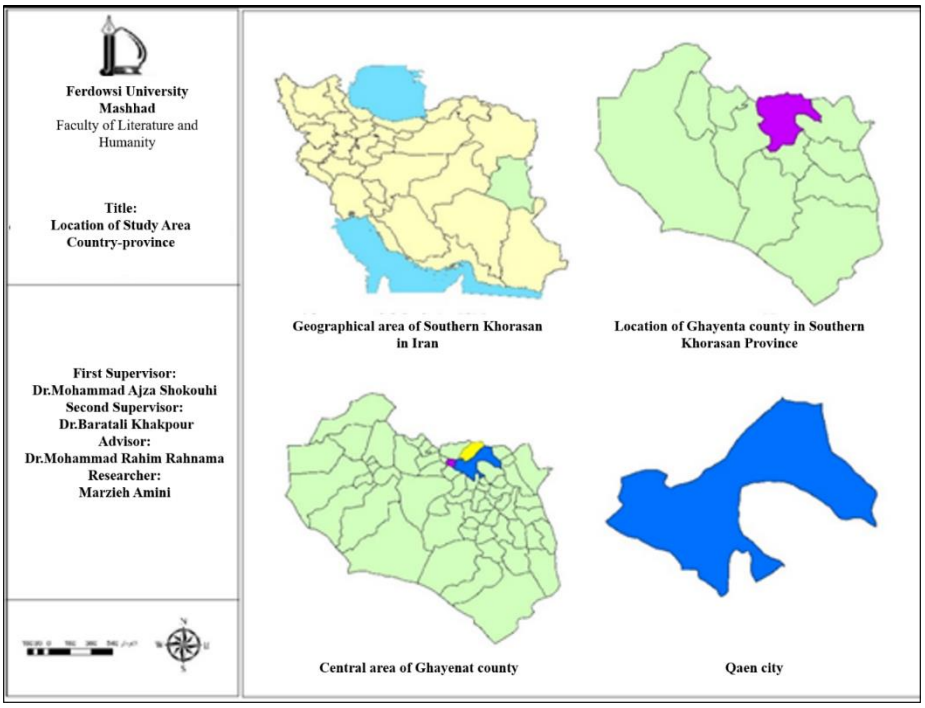

Figure 2. Study area

RESEARCH FINDINGS

Scenario planning to improve the status of Qaen city in the regional development process

The purpose of the scenario is to discover, create, and examine compatible alternative future environments. Creating a more realistic future for decision-makers is for mindset, new decisions, learning to be prepared for future risks (Mazaheri and Kafi, 2017, p. 26). Therefore, in this section, the drivers were extracted using the Delphi method and surveying the relevant experts to improve the status of Qaen city in the regional development process. These factors are the basic factors to develop plausible situations and scenario planning.

Developing plausible situations of the key factors

To make a scenario based on the key factors, it is required to define the plausible situations for the future of the Qaen city status in the regional development process. Accurate analysis of the facing conditions and defining the plausible situations are required to develop the scenarios. Experts were surveyed using the Delphi method to define the plausible situations for each one of the key factors.

Table 1. Plausible situations of key factors to improve the status of Qaen city in the regional development process

Abbreviation	Key factors	Plausible situations
A	Relative economic growth	A1 desirability of the relative economic growth A2 lack of relative economic growth A3 adverse relative economic growth
B	Gross Domestic Product (GDP)	B1 Increase in the GDP B2 continuation of the current situation B3 Reduction in the GDP
C	Industrial and production prosperity	C1 rapid industrial and production prosperity C2 continuation of the current situation C3 Slow industrial and production prosperity
D	Investment in the province	D1 Increased investment in the province D2 lack of investment in the province D3 Reduced investment in the province
E	Macro policies of the government	E1 improving macro policies of the government E2 continuation of the current situation E3 lacks improving the macro policies of the government
F	Development of the university	F1 desirable development of the universities F2 Continuation of the current situation F3 adverse development of the universities
G	Investment security	G1 increased investment security G2 continuation of the current situation G3 reduced investment security
H	Production technology	H1 desirable production technology H2 continuation of the current situation H3 adverse production technology
I	Employment structure	I1 desirable job creation I2 Continuation of the current situation I3 adverse job creation
J	Main roads network	J1 improving main roads network J2 lacks improving the main roads network J3 weakening the main roads network

In the following, the plausible situation of each will be explained in detail.

Building and analyzing the plausible scenario packages in the future

In this step, 30 plausible situations for 10 key factors were designed. The number of plausible situations of each factor is considered based on the complexity of the conditions of the three statuses. Similar to the previous step in determining the key factors, a questionnaire was designed and distributed among the experts (15 urban affairs experts (municipality and city council) and a group of professors in this regard by designing the situations and developing a cross-impact matrix of 30×30. The experts filled the questionnaire by raising the following question: If any of the 30 situations occur, what effect will it have on the occurrence or non-occurrence of other situations? (based on weighing between 3-3). The experts also determined the effectiveness of each situation on the system.

Table 2. The average response of experts to the plausible situations using Scenario Wizard software

	A			B			C			D			E			F			G			H			I			J		
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3	E1	E2	E3	F1	F2	F3	G1	G2	G3	H1	H2	H3	I1	I2	I3	J1	J2	J3
A. Relative economic growth -A1 Desirability of the relative economic growth -A2 Lack of relative economic growth -A3 Adverse relative economic growth				9	0	-9	7	1	-8	8	-4	-4	5	2	-7	4	1	-5	8	2	-10	6	0	-6	4	4	-8	5	-1	-4
				-1	-4	5	-9	3	6	-8	4	4	1	-2	1	-2	1	1	-9	0	9	-7	2	5	-4	-1	5	-3	0	3
				-6	0	6	-7	2	5	-4	2	2	-7	2	5	-5	1	4	-7	2	5	-6	0	6	-6	3	3	-7	2	5
B. Gross Domestic Product (GDP) -B1 Increased GDP -B2 continuation of the current situation -B3 Reduced GDP	11	-4	-7				6	0	-6	8	-4	-4	6	0	-6	6	0	-6	6	0	-6	6	0	-6	6	0	-6	7	-2	-5
	1	-2	1				1	1	-2	0	0	0	-1	2	-1	0	0	0	1	-2	1	0	0	0	2	-1	-1	2	-1	-1
	-9	3	6				-6	0	6	-4	2	2	-6	0	6	-3	0	3	-6	0	6	-3	0	3	-6	0	6	-4	2	2
C. Industrial and production prosperity -C1 Rapid industrial and production prosperity -C2 Continuation of the current situation -C3 Slow industrial and production prosperity	10	-5	-5	8	-1	-7				6	-3	-3	8	2	-10	5	2	-7	6	0	-6	6	0	-6	5	2	-7	8	-4	-4
	1	1	-2	-1	2	-1				-1	2	-1	0	0	0	1	-2	1	-2	1	1	2	-1	-1	0	0	0	1	-2	1
	-4	8	-4	4	1	-5				-6	3	3	-7	-1	8	-6	0	6	-9	0	9	-6	0	6	-7	2	5	-6	3	3
D. Investment in province -D1 increased investment in the province -D2 lack of investment in the province -D3 reduced investment in the province	11	-4	-7	6	0	-6	5	2	-7				5	2	-7	2	2	-4	8	-1	-7	6	0	-6	5	2	-7	5	-4	-1
	-2	1	1	-6	0	6	-6	0	6				-7	2	5	-4	-1	5	-8	1	7	-6	0	6	-8	1	7	-3	0	3
	-7	2	5	-9	0	9	-7	2	5				-6	3	3	-6	0	6	-6	0	6	-6	0	6	-7	2	5	-8	4	4
E. Macro policies of the government - E1 Improving macro policies of the government - E2 continuation of the current situation - E 3 lack if improvement in macro policies of the government	10	-5	-5	6	0	-6	5	2	-7	8	-4	-4				6	0	-6	6	0	-6	6	0	-6	3	0	-3	7	-2	-5
	-2	1	1	-1	2	-1	-1	-1	2	-1	2	-1				1	1	-2	1	-2	1	2	2	-4	-2	1	1	-2	1	1
	-7	2	5	-7	2	5	-7	2	5	-5	1	4				-3	0	3	-7	2	5	-6	0	6	-7	2	5	-4	2	2
F. Developing university - F1 Desirable development of universities - F2 continuation of the current situation - F3 adverse development of universities	9	-6	-3	5	2	-7	5	2	-7	4	-2	-2	6	0	-6				6	0	-6	6	0	-6	4	-2	-2	4	-2	-2
	-2	1	1	1	1	-2	-1	2	-1	-1	2	-1	2	-4	2				-1	2	-1	1	1	-2	1	1	-2	2	-1	-1
	-9	3	6	-3	0	3	-3	0	3	-6	3	3	-7	2	5				-6	0	6	-7	-1	8	-9	3	6	-4	2	2
G. Investment security - G1 increased investment security - G2 continuation of the current situation - G3 weakened investment security	8	-1	-7	6	0	-6	8	2	-10	9	-6	-3	6	0	-6	4	1	-5				6	0	-6	5	2	-7	8	-4	-4
	1	-2	1	2	-1	-1	2	-1	-1	1	1	-2	2	-1	-1	0	0	0				1	1	-2	1	-2	1	3	-3	0
	0	0	0	-6	0	6	-7	2	5	-12	6	6	-9	0	9	-6	3	3				-7	-1	8	-6	0	6	-4	2	2
H. Production technology - H1 desirable production technology - H2 continuation of the current situation - H3 adverse production technology	10	-5	-5	6	0	-6	9	0	-9	10	-5	-5	3	0	-3	5	2	-7	3	0	-3				3	0	-3	7	-2	-5
	1	1	-2	4	-2	-2	-2	1	1	-1	-1	2	1	-2	1	0	0	0	0	0	0				1	1	-2	2	-1	-1
	-12	6	6	-6	0	6	-7	2	5	-8	4	4	-4	-1	5	-7	2	5	-4	2	2				-3	0	3	-4	2	2
I. Employment structure - I1 desirable job creation - I2 continuation of the current situation - I3 adverse job creation	11	-4	-7	6	0	-6	5	2	-7	10	-5	-5	8	-1	-7	9	0	-9	6	0	-6	5	2	-7				5	-1	-4
	2	-1	-1	1	-2	1	2	-1	-1	1	1	-2	1	1	-2	2	-1	-1	1	1	-2	-1	2	-1				1	-2	1
	-11	7	4	-6	0	6	-7	2	5	-8	4	4	-7	2	5	-9	3	6	-6	0	6	-6	0	6				-5	1	4
J. Main roads network - J1 improving main roads network - J2 lack of improving main roads network - J3 weakening main roads network	9	-6	-3	3	0	-3	3	0	-3	4	-2	-2	5	2	-7	3	0	-3	6	0	-6	3	0	-3	3	0	-3			
	1	-2	1	-3	0	3	-6	3	3	2	-1	-1	-4	2	2	1	1	-2	-1	2	-1	-3	0	3	-4	2	2			
	-10	5	5	-6	0	6	-6	0	6	-4	2	2	-7	2	5	-6	0	6	-3	0	3	-9	0	9	-6	0	6			

Using experts' opinions on plausible situations and using Scenario Wizard software, a questionnaire was analyzed, and the following scenarios were extracted:

Very strong scenarios: 2 scenarios

Scenarios with high compatibility (believable scenarios): 9 scenarios

Weak scenarios: 683 scenarios

The nature of this software is to reduce the plausible aspects of the occurrence of scenarios among millions of scenarios to several plausible scenarios with high occurrence probability. The results indicate that there are two scenarios with a high score and higher probability of occurrence, among which one scenario shows hopeful and desirable conditions and another scenario represents critical conditions for Qaen city. This software designs scenarios based on the negative and positive influential relations. In other words, all scenarios in a project may have a broad range of favorable situations, and it is also possible that any critical scenario is not projected and vice versa. Furthermore, the software shows 693 scenarios with weak probability. It seems that, on the one hand, trusting a weak scenario is logical, and on the other hand, addressing 693 scenarios is almost impossible, impractical, and illogical. What is logical among the strong scenarios and weak scenarios is scenarios with 1 compatibility, which is the expansion of the strong scenarios by 1 unit towards weak scenarios, presented in the following figure.

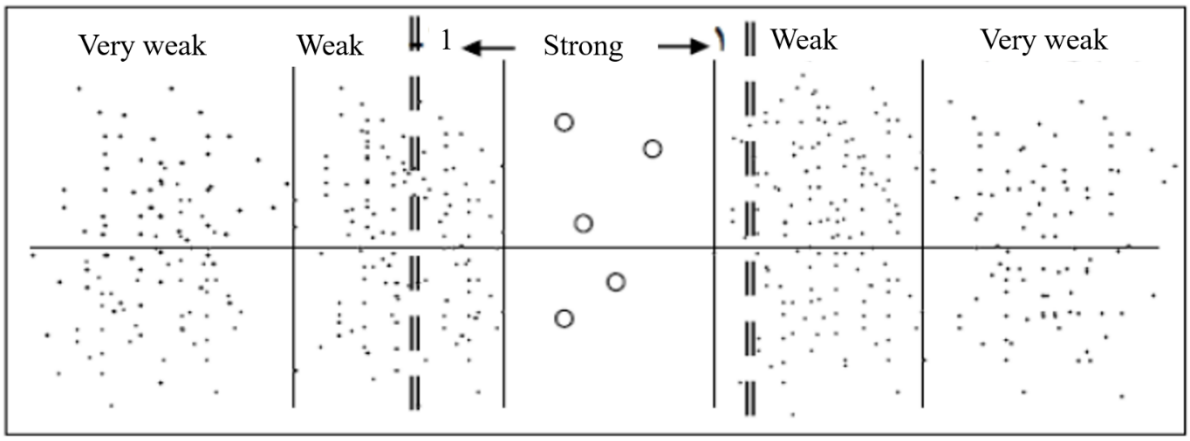

Figure 3. Selecting scenarios with compatibility of 1 among scenarios (Resource: Zali, 2009)

According to this feature of the software, it will be possible to increase the range of the strong scenarios. Therefore, with an increase by one unit, which is the standard unit of this range based on the software, 11 rational and logical scenarios will be obtained by the researcher for planning and policymaking.

Analyzing Strong Scenarios

Studying the strong scenarios shows that there are two scenarios with a high score and higher probability of occurrence among which, there is one scenario with hopeful and desirable conditions and one scenario with critical conditions for Qaen city.

Table 3. Studying the situation of the strong scenarios in Scenario Wizard Software

Scenario No. 1			
Consistency value : 30			
Total impact score: 559			
A.	Relative economic growth	: -A1	Desirability of the relative economic growth
B.	Gross Domestic Product	: -B1	Increased Gross Domestic Product
C.	Industrial and production prosperity	: -C1	Rapid industrial and production prosperity
D.	Investment in the province	: -D1	Increased investment in the province
E.	Macro policies of the government	-E1	Improved macro policies of the government
F.	Development of the universities	: -F1	Desirable development of the universities
G.	Investment security	: -G1	Increasing investment security
H.	Production technology	: -H1	Desirable production technology
I.	Employment structure	: -I1	Desirable job creation
J.	Main roads network	: -J1	Improving main roads network

Scenario No. 2			
Consistency value : 3			
Total impact score: 421			
A.	Relative economic growth	: -A2	Lack of relative economic growth
B.	Gross Domestic Product	: -B3	Reduced gross domestic product
C.	Industrial and production prosperity	: -C3	Slow industrial and production prosperity
D.	Investment in the province	: -D3	Reduced investment in the province
E.	Macro policies of the government	-E3	Lack of improving the macro policies of the government
F.	Development of the universities	: -F3	Adverse development of the universities
G.	Investment security	: -G3	Weakened investment security
H.	Production technology	: -H3	Adverse production technology
I.	Employment structure	: -I3	Adverse job creation
J.	Main roads network	: -J3	Weakening main roads network

According to the strong scenarios, in the first scenario, all the situations are desirable, and in the second scenario, the plausible situations are adverse, which is impossible. Therefore, it is not rational to rely on these scenarios, and thus, they are removed from the analysis process. The first and second scenarios have the maximum weight in comparison with other scenarios. Based on the weight of the strong scenarios, the second scenario has a higher probability of occurrence, indicating the regional development at critical conditions.

Table 4. Color spectrum and desirability of strong scenarios

Scenario No. 1	Scenario No. 2
A. Relative economic growth -A1 Desirability of the relative economic growth	A. Relative economic growth -A2 Lack of relative economic growth
B. Gross Domestic Product -B1 Increased Gross Domestic Product	B. Gross Domestic Product -B3 Reduced gross domestic product
C. Industrial and production prosperity -C1 Rapid industrial and production prosperity	C. Industrial and production prosperity -C3 Slow industrial and production prosperity
D Investment in the province -D1 Increased investment in the province	D Investment in the province -D3 Reduced investment in the province
E Macro policies of the government -E1 Improved macro policies of the government	E. Macro policies of the government -E3 Lack of improving the macro policies of the government
F. Development of the universities -F1 Desirable development of the universities	F. Development of the universities -F3 Adverse development of the universities
G. Investment security -G1 Increasing investment security	G. Investment security -G3 Weakened investment security
H. Production technology -H1 Desirable production technology	H. Production technology -H3 Adverse production technology
I. Employment structure -I1 Desirable job creation	I. Employment structure -I3 Adverse job creation
J. Main roads network -J1 Improving main roads network	J. Main roads network -J3 Weakening main roads network

The initial investigation of the nine scenarios indicates relative dominance of the number of undesirable situations on the desirable situations. Except for few scenarios that have desirable and progressing features, the other scenarios do not associate a desirable future for the city along with important missions towards the prospect. Qaen city will face significant challenges to achieve the objectives of the vision and realization of its missions in the future. It is necessary to pay attention to the probability of occurrence and be prepared for these challenges. Such an approach to the future will reduce deviance from the right path. Each of the plausible scenarios of Qaen city will be analyzed to study the plausible situations in Qaen.

Table 5, known as the scenario screen matrix, clearly shows the plausible situations by scenario and key factor. This screen was divided into 3 situations based on the status of key factors to facilitate the understanding of the conditions of the scenario screen and the weight of the favorable and unfavorable conditions. To understand the situations based on the score given to each of the situations between 3 and -3, the numbers were used instead of the situations to provide a little understanding of the scenario screen. A qualitative understanding of the scenarios screen was also provided by replacing the situations with a range of titles from desirability to crisis, which can clearly show the situation and position of Qaen city, separately for each scenario and each key factor. In other words, three markers were inserted on the scenario screen instead of describing the situation. The general situations were shown first by colors, then by numbers, and finally, by word markers. Unfortunately, critical situations or those on the verge of crisis, occupy a large part of the scenario screen, and desirable situations are only in a small part of the screen.

Table 5. The situation of each factor by scenario and three spectra from desirable to critical

Scenario/factor	Relative economic rate	Gross domestic product	Industrial and production prosperity	Investment in the province	Macro policies of the government	Development of the universities	Investment security	Production technology	Employment structure	Main roads network
Scenario 1	Desirable	Desirable	Desirable	Desirable	Desirable	Desirable	Desirable	Desirable	Desirable	Desirable
Scenario 2	Desirable	Stable	Stable	Stable	Stable	Critical	Critical	Stable	Stable	Desirable
Scenario 3	Desirable	Desirable	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Desirable
Scenario 4	Stable	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Stable
Scenario 5	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Stable
Scenario 6	Stable	Critical	Critical	Stable	Critical	Critical	Critical	Critical	Critical	Critical
Scenario 7	Critical	Critical	Critical	Stable	Critical	Critical	Critical	Critical	Critical	Critical
Scenario 8	Stable	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical
Scenario 9	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical	Critical

Out of 90 situations ruling the scenario screen, there are 58 critical situations, i.e., 64.44%, 17 stable situations, i.e., 18.88%, and 15 desirable situations, i.e., 16.66%. Such a situation shows that most of the available situations in the scenario screen are critical situations. The stable situation ranks next, and the desirable situation is in the minimum status.

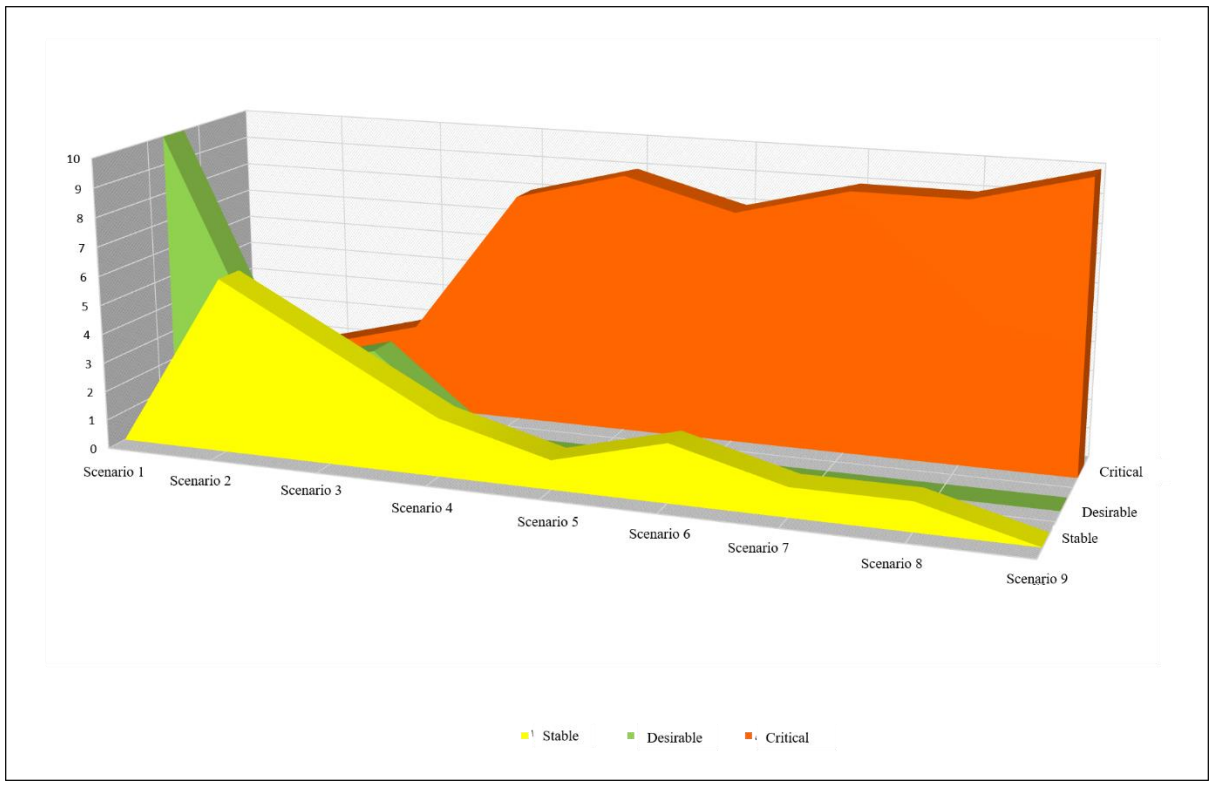

Figure 4 Plausible situations of Qaen city in the future per scenario

Due to the similarity of the scenarios, they can be divided into three groups, each of which includes several scenarios with almost common features with little difference in one or more situations among the 10 main factors. These groups are as follows:

Desirable scenarios (including scenario: 1)

Stable scenarios (including scenarios: 2 and 3)

Critical scenarios (Including scenarios: 4,5,6,7,8,9)

Among 9 believable scenarios that Qaen city as, there is one scenario with the desirable situation, which shows hopeful conditions for improving the situation of Qaen city in the regional development in the future. Moreover, 2 scenarios show the stable situation, and 6 scenarios show the critical situation in the future. Classification of the scenarios is as follows:

The scenario of the first group (Balanced development): desirable conditions based on the relative economic growth, gross domestic product, industrial and production prosperity, investment in the province, desirable and macro policies of the government, development of the university, investment security, desirable production technology, desirable job creation, and improving main roads network.

The embedded future of Qaen city is at the desirable situation based on the first scenario in the first group and includes the first scenario and the best possible and desirable conditions for the regional development. This group has the maximum number of desirable conditions among the scenarios of other groups in terms of frequency. Comparing the frequency percentage of the favorable situation and critical situation with other groups shows that the desirable situation for Qaen city is in this group. The features of these scenarios are the desirability of the relative economic growth, increased gross domestic product, fast industrial and production prosperity, increased investment in the province, improving the macro policies of the government, the desirable development of the universities, increased investment security, desirable production technology, desirable job creation, and improving the main roads network. In general, the scenarios of this group indicate the positive and suitable situations for Qaen city.

Scenarios of the second group (concentrated development): the slow trend of changes, maintaining the current situation

There are two scenarios in this group, including the second and third scenarios. This group has the maximum number of stable situations among the scenarios of other groups in terms of frequency. Comparing the frequency percentage of the desirable and critical situations in this group with other groups shows the approximately stable situation for Qaen city in this group. There is a

considerable difference between the effectiveness of this group and the first and third groups. This group includes the following features: investment in the province, macro policies of the government, production technology, and employment structure.

Scenarios of the third group (discrimination center): critical and adverse conditions, lack of possibility for regional development

This group includes scenarios with a critical situation and has six scenarios: scenario 4, scenario 5, scenario 6, scenario 7, scenario 8, and scenario 9. Distinguishing factors in this group are differences in the desirable, stable, and critical situations. This group has the maximum number of critical situations among the scenarios of other groups in terms of frequency. Comparing the frequency percentage of the desirable and critical situations of this group with other groups indicates that the critical situation of Qaen city is in this group. Among the features of this group of scenarios are adverse relative economic growth, reduced gross domestic product, slow industrial and production prosperity, reduced investment in the province, lack of improvement in the macro policies of the government, adverse development of the universities, weakened investment security, adverse production technology, adverse job creation, weakened main roads network.

Table 8. Coefficient, number, and percentage of each situation per scenario based on the triple spectra

Scenario/ situation	Number of situations separately			Coefficient of the situations			Total score
	Desirable	Stable	Critical	3	1	-3	
Scenario 1	10	0	0	30	0	0	30
Scenario 2	2	6	2	6	6	-6	6
Scenario 3	3	4	3	9	4	-9	4
Scenario 4	0	2	8	0	2	-24	-22
Scenario 5	0	1	9	0	1	-27	-26
Scenario 6	0	2	8	0	2	-24	-22
Scenario 7	0	1	9	0	1	-27	-26
Scenario 8	0	1	9	0	1	-27	-26
Scenario 9	0	0	10	0	0	-30	-30

CONCLUSION

Among the complicated environments with rapid reactions, organizations pay more attention to how to imagine the future and direction of their approaches to deal with the environmental, technological, and social changes (Buhring & Liedtka, 2018, p. 135). Studying the uncertainty in the organizational environments have a considerable thinking history (Ramirez &Selsky, 2014, p. 1). Nowadays, urban planners and policy-makers lack a future-oriented and influential approach. Accordingly, they cannot predict the upcoming developments and be prepared for the upcoming reformations and have the ability to deal with the intrinsic complexities. These planners and policy-makers always face various challenges, which can be dealt with only by imagining the future of the cities, emphasizing the drawn techniques and methods of the future systematically, accurately, and comprehensively (Ratcliffe & Krawczyk 2011, p. 643). Despite the merits of previous sources, the specialized literature shows a fundamental distinction between the scope and content of future study experiences, especially those required by urban planning. Also, planners focus on forecasting tools when looking to the future and consider most future studies methods dull experiences (Güell & Redondo, 2012: 319). Considering the significant features of the future study in urban planning, the lack of future study literature in practical and research experiences is bold. The current research aims to develop the development scenarios of Qayenat city in Southern Khorasan Province based on the future study approach. The present study defined the plausible situations for each key factor by surveying the experts to script scenarios for regional development based on the key factors. The factors were defined as a range of desirable factors to critical factors. The plausible situations were weighted from 3 to -3 in Scenario Wizard Software based on the experts' opinions. Eventually, three groups of scenarios (strong scenarios, believable scenarios with high compatibility, and weak scenarios) were extracted. The believable scenarios were considered desirable scenarios due to being logical. Among the believable scenarios, the first scenario was determined as the best scenario due to the higher degree of desirability. In this scenario, which is called balanced development, the desirable conditions are based on the following factors: relative economic growth, gross domestic product, industrial and production prosperity, investment in the province, desirable policies, development of the university, investment security, desirable production technology, desirable job creation, and improved main roads network. It is the most desirable scenario to improve the status of Qaen city in the regional development.

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