



ANALYSIS OF NATIONAL DEVELOPMENT USING LABOUR MARKET MODEL: A CASE STUDY OF KHAF

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Abstract

Active and efficient sectors of the economy play a pivotal role in the development process. Growth in different economic sectors shows the overall progress of the economy and the people's quality of life and social welfare. Economic and social changes will be more tangible if these situations are manifested in labour and the reduction of the unemployment rate. The present study uses labour market analysis and economic growth during three censuses (1986 to 2011) to determine the development rate of the Khaf city. In particular, the study scientifically and systematically examines the trends related to employment changes, lack of jobs analysis, receiving and sending immigrants, and the causal relationship between immigration and lack of jobs. The study utilises descriptive-analytical research in which data was gathered from formal and bureau resources. The data were analyzed using Statistical Package for Social Sciences (SPSS) software, descriptive and inferential statistics methods. Findings show that growth in employment sector attracts significant immigration in the city and changes in the labour force (DL) depend on the participation rate (DA) rather than natural changes in the labour force (DN). The finding of the study shows that decades from 1986 to 2006 had the worst development conditions due to the lack of job opportunities whereas from 2006 to 2011 witnessed the best development conditions due to introduction of additional jobs openings. In terms of the growth rate of economic sectors, the periods of 1986 to 1996 and 1996 to 2006 had the best and the worst growth rate respectively.

Key words

Development analysis, Labour market model, Immigration, employment, Khaf city, Iran.

INTRODUCTION

Since the 18th century and after the industrial revolution, the downgrading of agricultural production caused people to migrate to cities and subsequently, the population of cities increased. This trend caused problems such as unemployment, workforce abundance, traffic increase and lack of housing infrastructure. Subsequently, these problems change the economic, social and cultural systems around the world, which was more visible in cities (Shie, 1987). Therefore, careful attention

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to the various changes in population structure and its impact is more necessary by the day (Friedman, 2002). Among the indicators of demographic changes employment is more important because the high rate of employment can show the level of community welfare and living facilities (Amin Beidokhti, 2003).

According to the interaction of demographic changes' indicators in Iran, indicators have been distributed unevenly showing rural migration and unemployment (Office of Family Health and Population, 2000). Numerous actions and programs were considered to solve these problems but because the interaction in the cyclical process (Field and McGregor, 1997) of decision-making was not considered, the efforts did not result in tangible findings. Indeed, what was taken into account is planning in residential complexes in general and urban areas in particular, was mainly concentrated on physical dimensions. Other aspects neither have been a cause of concern nor have found their real importance. For example, the issue of employment has been seen as an essential part of these plans but has received less attention in practice. However, for now, these planning are so important that not only the city but also its sphere of influence on economic examinations and providing employment has been considered recently.

In general, awareness and knowledge of the structure and function of the economy of a city, including urban planning (Matlovičová, Tirpáková and Mocák 2019) and territorial marketing (Matlovič and Matlovičová 2016). at various level and analysis of land-use are necessary. Perhaps that is why some consider the creation of an urban centre with the infrastructure such as water availability, power generation, manufacturing activity, income and general economic mobility (Farhoodi and Mohammadi, 2006). The primary purposes of economic studies are knowledge of the business combination, evaluation of economic life and prediction of the future state of the local economy through which we can anticipate regional growth and development of spatial-physical manifestations in the appropriate form of visualisation (Todaro, 1999). Accordingly, the basis of inclusive development of urban studies is its economic studies in which employment, population, income, and ultimately need for living spaces are determined.

OBJECTIVES

This paper aims to analyse labour market conditions and growth rates of economic sections of Khaf, identifying opportunities and obstacles in the development of the city and suggesting viable solutions. In this regard, the study tries to find out the answers to the following research questions: What procedure has the city labour market passed from 1976 to 2010? What is the relationship between the processes of attracting migrants, immigration status and labour supply? How was the growth of economic sectors during the last three-decade census? What impact has each of the economic sectors had on job creation and subsequently on the changes in



demand in the labour market? Furthermore, the research also tries to answer the differences in the changes in employment and migration between Mashhad as the provincial capital and Khaf?

THEORETICAL FRAMEWORK

Labour market calculations

Calculation of the technology job market is a tool with which we can show the approach to supply and demand for labour. The fundamental element in the calculation of the labour market is the lack of job which occurs due to the imbalance between supply and demand for labour. With the use of this method, it is possible to indicate the effects of changes in employment on migration, unemployment and traffic (Tyler and Rhodes, 1989).

CALCULATION OF THE COMPONENTS OF THE LABOUR MARKET

The main components in the calculation of the labour market include population (P); working-age population (W); total employment (E); total unemployed (U); total net migration out of (M); and (C) as the total commuting out of the net.

$$DL = L - L_{-1} + YXM \quad (1)$$

DL: (changes in the labour force). If it is positive, this means that the supply of labour has increased and vice versa.

$$DN = (W - W_{-1}) \times Y_{-1} + XMY_{-1} \quad (2)$$

DN: (natural changes in the labour force). In the case of being negative, the number of people who were not in the working age in the previous decade now enters into working age. Another element that must be indicated in this case is participation changes in the labour force which can be calculated by using the following model.

$$DA = W(Y - Y_{-1}) + XM(Y - Y_{-1}) \quad (3)$$

DN: (participation rate). If it is positive, participation will be more, and if it is negative, it will show the reduction of participation.

Another factor is DE or changes in labour demand.

$$DE = E - E_{-1} \quad (4)$$

DE (changes in labour demand). If it is positive, it will show an increase in demand and, if it is negative, it will show a reduction in demand.

$$DS = DL - DE \quad (5)$$

DS (lack of jobs). If the sign is positive, we are facing a shortage of jobs, and a negative sign shows surplus jobs in the studied population.

$$DU = U - U_{-1} \quad (6)$$



DU (changes in unemployment). The positive sign indicates unemployed population growth and the negative sign shows the unemployed population decline (Ajza Shokuhi, 2002).

SHARE CHANGE METHOD

Share change analysis for the first time was proposed by Dunn (1960) as a way to determine the areas in which changes can be observed in economic variables and particular employment (Mayor et al., 2007). One of the significant advantages of this technique is its simplicity. Moreover, because this technique does not require many initial data, it can be used in all areas (Yassin et al., 2005). This advantage gains particular importance in third world countries, including Iran, which is facing a lack of detailed and updated statistics.

DATA AND METHODS

The study is based on analytical, documentary and library resources. The statistics and data were obtained from the results of population and housing censuses for the years 1986, 1996, 2006 and 2011 of the Statistical Centre of Iran and Management and Planning Organization of Khorasan Razavi. In the first part, relationships between job creation opportunities (labour demand), and the size of the labour force, migration, unemployment and traffic are shown by calculations of the labour market. In the second part, data from agriculture, industry and services were calculated by the share change model with the three elements of overall reference economic growth (A) relative growth sector in the total reference economy (B) the performance of each section of the city in relation to the same section in reference level (C). Finally, the employment situation and immigration of Khaf are compared to Mashhad's.

The study area

Khaf is located 250 km away from the southeast of Mashhad, the Center of Razavi Province, and shares 123km common border with Afghanistan. The city is limited to Tayabad and Torbat Heidarieh in north, Gonabad and Torbat Heidarieh in the west, Ghenat in south and Afghanistan in its east (Fig. 1). The city has mild and dry weather; the highest temperature recorded in the summer is 42 degrees celcius, and the lowest temperature in winter is -10 degrees celcius. The city's annual rainfall is 185 mm. The area of this county is 9796/79 km which is 8/42 percent of Khorasan Razavi's area. The county is located at an average height is 960 m above the sea level with a temperature varying between 1/3 and 31/7 Celcius; the city has 60 glacial days due to being on the fringe of the desert. According to the Population and Housing Census in 2011, the population of the city was 121859, of which 56365 people are residents of the city (46/25 percent) and 65494 live in rural areas (53/74 percent).

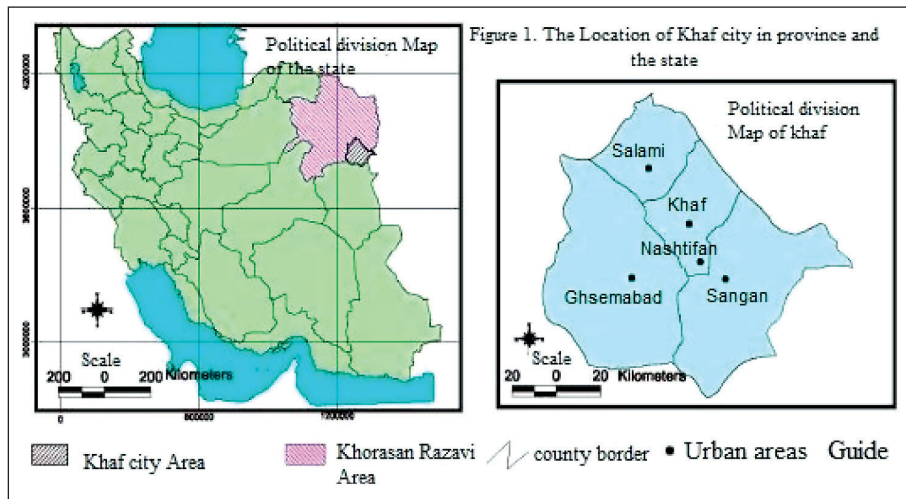


Figure 1
Location map of Khaf in Iran and Khorasan Razavi

Population and its evolution

According to the census, the changes in the population of Khaf city was significant during the last three census periods and it is quite irregular. For example, while the population of the city during the period between 1966-1976 had the growth rate of over 6.1%, in 1986-1996 it experienced negative growth of about 0.7%. Detailed information about these developments during the year's between 1956 – 2011 is presented in table 1 and Fig. 1 respectively.

Table 1 Population changes in Khaf from 1956 to 2011

Year	Population	Number of Households	Decade	Growth Rate
1956	34342	7215	---	---
1966	42861	9420	56-66	2.2
1976	77995	17527	66-76	6.1
1986	95451	21943	76-86	4.1
1996	92158	21684	86-96	-0.7
2006	110387	26599	96-06	1.2
2011	121859	30850	06-11	2.9

Source: *Statistical Yearbook of Khorasan Razavi, 2011.*

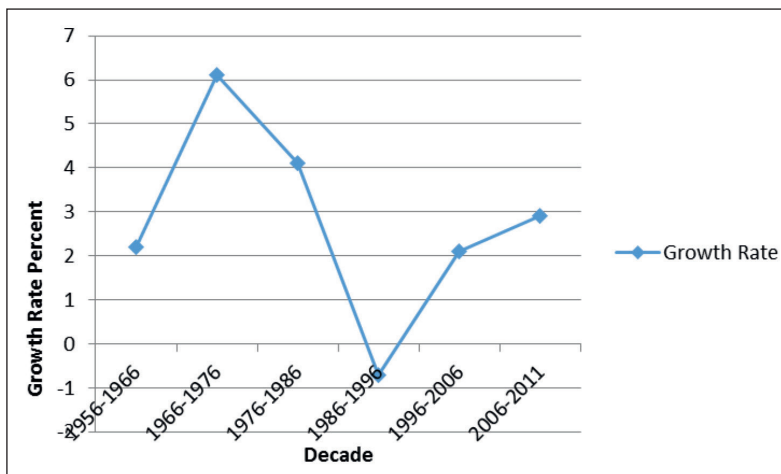


Figure 2

Changes in the population growth rate from 1956 to 2011, KHAF Statistical Centre of Iran (1956 to 2011).

RESULTS AND DISCUSSION

Analysis of labour market situation in Khaf

If we look at a city or town as a system, it is required to identify its behaviour, in order to change guide and plan such a system. By behaviour, we mean the process of intended area or system in terms of development over time. Identification of these processes and mechanisms of transformation of a city requires consideration of "time". Here, the analysis of the labour market situation of Khaf city during the four decades from 1976 to 2011 census is discussed. With the labour market calculations, the following findings were obtained (Table 2).

Table 2 Calculation of the labour market of Khaf, 1976-2011

Decade	DL	DN	DA	DE	DS	YXM	DU
1976-86	261	1191	-520	820	-599	-799	241
1986-96	887	684	248	1262	-375	-170	-205
1996-06	1541	990	212	1241	300	-364	664
2006-11	1850	1092	537	1701	-405	-987	210

Source: *Iranian Formal Database (2012)*

Table 2 proposes different realities; one of the most important is that the labour market city in the first and second decades faced with a shortage of job and in the third decade with surplus jobs. In terms of lack of jobs, the first decade with the



shortage of 3832 cases was the worst. In this decade, changes in labour demand (DE) was negative means the number of employed people did not increase. In the second decade, despite the lack of jobs, about 8876 people were added to the employed population. More detailed examinations show that from 3832 cases of shortage of jobs in the first decade, about 1000 cases must be found in demand for labour (DE) and the rest in increasing of the labour force (DL). About 3832 cases of shortage of jobs in the first decade caused out migration of almost 4,000 people from the city. In the second decade, despite the lack of jobs, the city observed out migration as well as immigration from other cities. The city provided with surplus jobs of about 4200 cases in the third decade and the best condition to solve the lack of jobs (DS) situation and the most immigration from other cities occurred in the same decade. As Fig. 3 shows, the relation between lack of job and (DS) and out-migration (YXM) indicates positive correlation among the changes in the lack of jobs and out-migration.

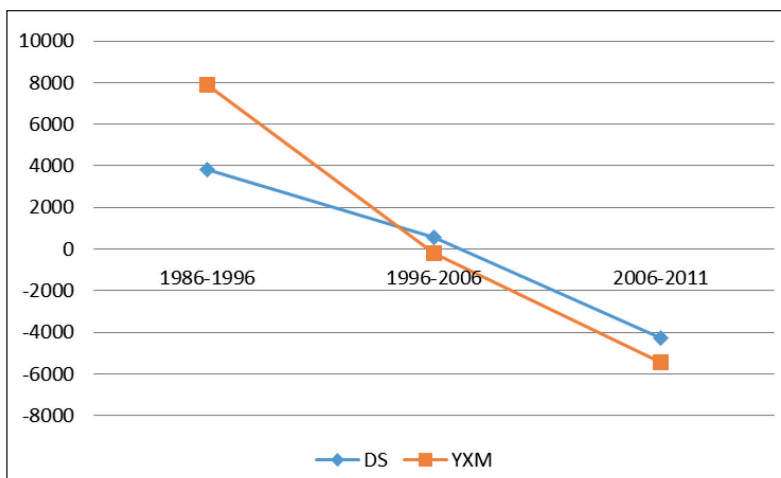


Figure 3

The relationship between lack of job (DS) and out-migration (YXM) in the labour market during 1986-2011 in Khaf city

In general, lack of jobs from the first decade to the third decade was decreasing; it means over the period lack of jobs in the city was reduced. The trend of out-migration is also the exact function of the trend of lack of jobs. From the first to third decade, out-migration was reduced and in the second and third decade's in-migration was increased. We conclude that in-migrations of this city have been entirely dependent on the lack of jobs and whenever surplus jobs provided, the area has had in-migrations.



In continuation and to clarify other aspects of the development of the city, the relationship between lack of jobs (DS) and changes in employment (DE) in 1986-2011 is discussed. Comparison between the trend of lack of jobs and employment trends (Fig. 4) shows that the trend of employment has been consistent with the lack of jobs in recent decades. In the first decade, the lack of jobs caused a reduction in the demand for labour. In the second decade (1986-2006), despite lack of jobs, the situation was much better than the previous decade. In 2006-2011, changes in employment (DE) were positive and incremental; lack of jobs (DS) was negative and decreasing.

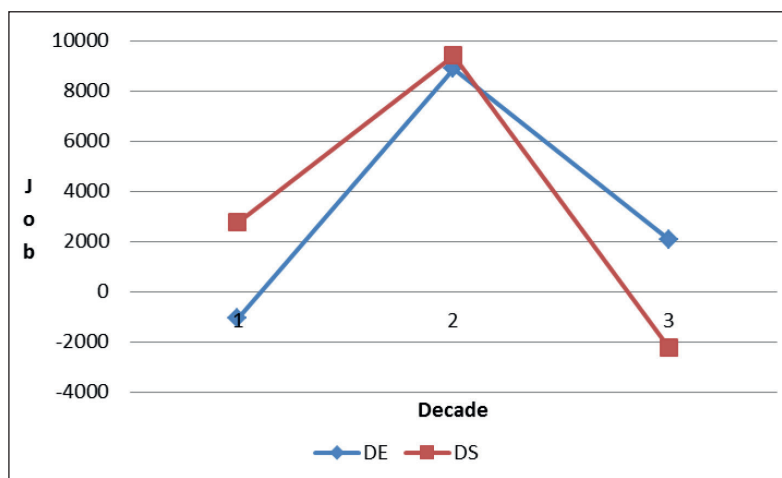


Figure 4

The relationship of the lack of jobs and employment changes in the labour market, Khaf, 1986-2011

Changes occurred in the context of employment and unemployment was laying the groundwork for other developments and conditions has affected the development of the city. One of the most critical cases in this connection was changes in the labour force (DL), participation rates (DA) as well as natural changes in the labour force (DN). Fig. 5 presents a detailed examination of this case and shows changes in the labour force (DL) are more dependent on natural changes in the labour force (DN) and DA and DL do not have noticeable relation with each other. We conclude that changes in the labour force (DL) are more dependent on natural changes in the labour force (DN) than on changes in participation rates (DA).

To determine the development of the city, clarifying the relationship among lack of jobs (DS), natural changes in the labour force (DN) and changes in participation rates (DA) will also be necessary. According to Fig. 6, in decades between 1986-1996 and 1996-2006 lack of jobs (DS) was positive and the city heavily faced

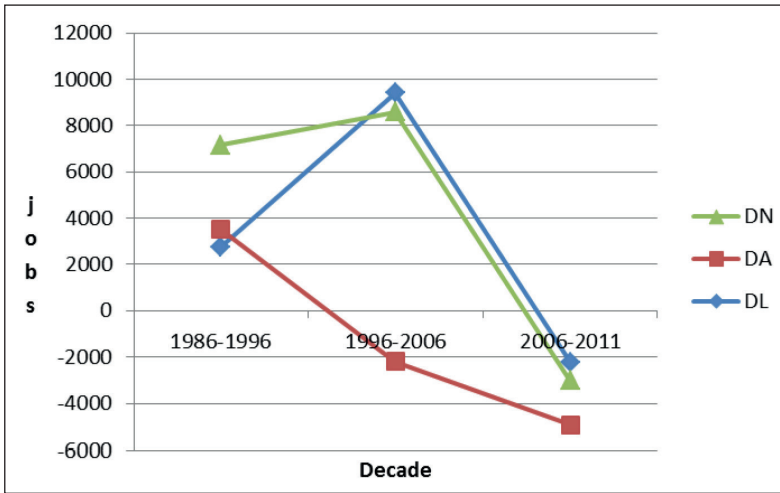


Figure 5

The relationship between DL, DA and DN in 1986-2011 Khaf

with a shortage of jobs. In this period, natural changes in the labour force (DN) had a positive and incremental process. Changes in participation rates (DA) were positive in the first decade but negative and decreasing in 1996-2006.

In 2006-2011 lack of jobs (DS) and changes in participation rates (DA) were negative and decreasing; there was a convergence to some extent between lack of jobs and participation rate and natural changes in the labour force (DN) were

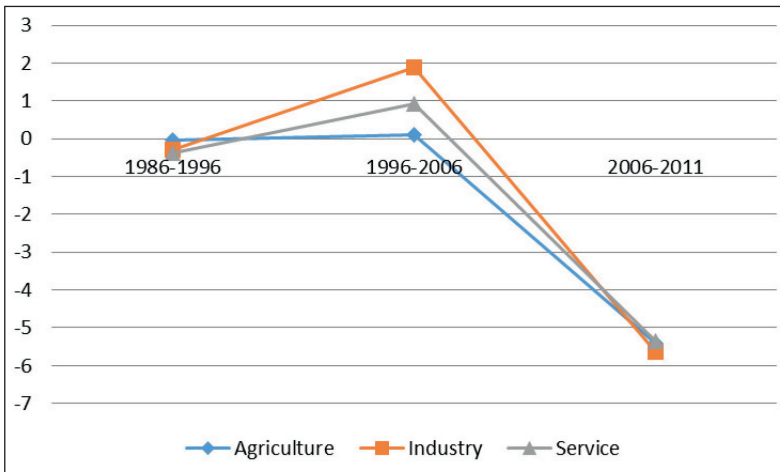


Figure 6 Relationship among lack of jobs (DS), natural changes in the labour force (DN) and changes in participation rates (DA) in 1986-2011



also positive, but it decreased in comparison with previous decades. In these two decades, changes in participation rates (DA) had more impacts on natural changes in the labour force (DN) than lack of jobs (DS).

Analysis of the situation of economic sectors in Khaf

As mentioned earlier, one of the most important factors in the development of the city is changes in the economic sectors. The fluctuations of economic sectors can indicate the economic situation of the city. Fig. 7 shows that in the first decade, all sectors had negative growth but this process reversed in the second decade. In this period, the highest growth was related to the industrial sector with 1/9. In the third decade, which is the worst decade in terms of economy, negative growth was above five and its main reason was high negative growth of reference economy.

Table 3 The economic status of Khaf during 1976- 2011

Decade	Khorasan Razavi		Khaf			B	C	A+B+C	Average
	start	end	A	start	end				
1986-1996									
Agriculture	421095	43728	0.21	9680	9420	-0.24	-0.11	-0.14	-0.26
Industry	379696	470003		5230	5113	-0.24	-0.26	-0.29	
Services	455039	592094		5515	5314	-0.25	-0.33	-0.37	
1996-2006									
Agriculture	437278	492279	0.14	9420	10311	-0.04	0.01	0.11	0.97
Industry	470003	537507		3113	10378	0.88	0.88	1.9	
Services	592094	709718		5314	8331	0.42	0.36	0.92	
2006-2011									
Agriculture	492279	427227	-5.65	10311	10825	0.05	0.18	-5.42	-5.47
Industry	537507	517170		1378	9160	0.07	-0.07	-5.65	
Services	709718	783539		8331	11068	0.10	0.21	-1.78	
Ave. Agr.			-1.76			-0.07	0.02	-1.78	
Ave. Ind.						0.23	0.18	-1.34	
Ave. Ser.						0.09	0.8	-1.59	

To determine the reasons for the city's economic fluctuations, the mechanism of win or lose changes in economic sectors in the whole city (C) also has to be indicated. The importance of this indicator is that it reveals the situation of economic sectors toward the situation of the whole country. According to Fig. 7 and Table 5, it can be said that in the second and third decades (C) in agriculture and industry is positive. In other words, in these two decades, industry and agriculture growth rate were higher in the city than in the province. In the first decade, this process was reversed and services part in all decades had negative growth except in the second

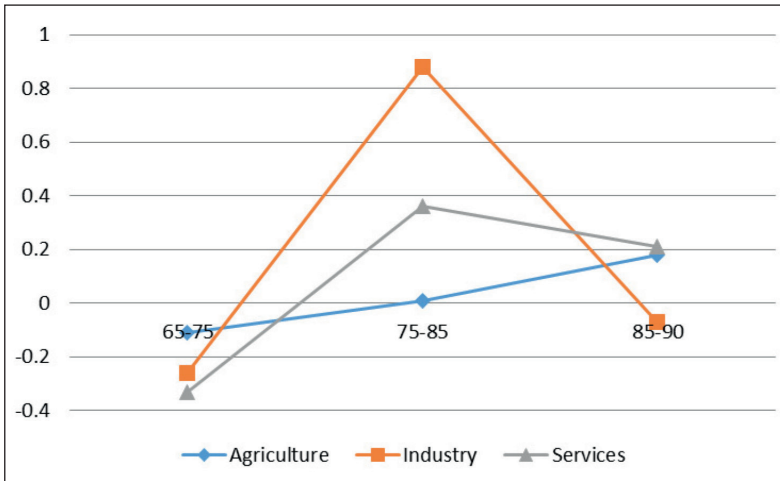


Figure 7
Fluctuations in the local growth rate of three economic sectors (A+B+C)

decade and even in later decades especially in the third decade it experienced high negative rate. This condition shows that this part of the city in comparison to the province was not in good condition. The second decade is the only decade in which all three economic parts of the city were above the same sectors at the country level. In general, it can be said that the changes in the agricultural and industrial sectors were more stable than the service part.

As mentioned earlier, in shift share method, winning or losing the state of economic sectors is associated with their positive or negative characteristics (C). Thus, regardless of a mixed or single loss of economic sectors, it is noted that agriculture, industry and service sectors were economic losers during two decades. This suggests that the condition of the industrial sector was undesirable during all these decades, but the agriculture and services sectors had better conditions during the same decade (Table 4).

Table 4 Losing or winning of economic sectors of Khaf during the five-decade census, 1986-2011

Frequency of decades regarding situations of economic sectors						
Economic Sector	Winner	Mixed Winner	Loser	Mixed Loser	Total (Winner and Mixed Winner)	Total (Loser and Mixed Loser)
Agriculture	1	1	0	1	2	1
Industry	0	1	1	1	1	2
Services	1	1	0	1	2	1



Analysis of the development of Khaf

For analysis of the development of Khaf, labour market conditions and growth rates of its economic sectors were analysed. For this purpose, two important variables, including labour market conditions and growth rates of economic sectors, were taken into consideration. With a blended looking at the conditions of two variables, lack of jobs (DS) the average rate of growth of local economic sectors variable (average of (A+B+C)), we can get a better picture of regional development of the city in the census (Table. 5).

Table 5 Comparison of the development of Khaf during 1986-2011

Decade	DS	Medium Growth	Description
1986-96	Lack	-0.26	Negative growth during the three decade
1996-06	Lack	0.97	Positive growth in the first decade
2006-11	Excess	-5.47	No lack of jobs and positive growth during the decades

Overview of comparison of employment and immigration changes in Khaf and Mashhad

In the beginning, during the recent three decades, the two variables of the labour force (DE) and migration (M) are compared in Khaf and Mashhad. Fig. 8 shows the demand for labour and migration in Khaf and Mashhad.

Table 6 Comparison of employment and Immigration changes in Khaf and Mashhad

Decade	Job application change		Immigration	
	Khaf	Mashhad	Khaf	Mashhad
1986-96	-1067	-2532	17610	309584
1996-06	8876	260983	-2562	-231450
2006-11	2087	339604	-1139	-12279

Table 6 presents, the trend of employment in the last three decades is completely different for Khaf and Mashhad (Fig. 8). In general, in the most census labour force (DE) was positive and incremental and its rate was positive except in 1986-1996. On this basis, two main results of this process are worth mentioning: Firstly, the amount of labour demand in Khaf is much less than in Mashhad. Actually, while the highest demand for labour in Khaf is about 8876, this amount for Mashhad is more than 339604 cases; and secondly, as Fig 9 shows, the speed of labour demand rise in Mashhad is more than Khaf. In general, Khaf had a decreasing trend in 2006-2011 in comparison to decade 1996-2006.

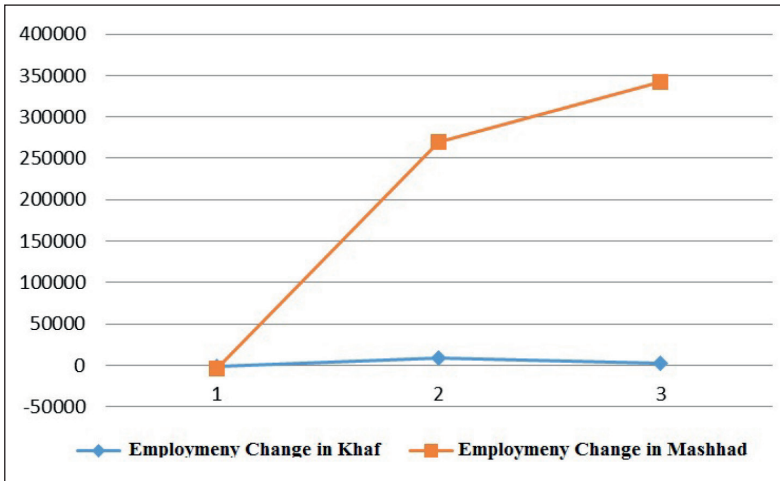


Figure 8
Changes in employment in Khaf and Mashhad
Source: *Census of the Statistical Center of Iran, 2012*

As mentioned earlier, one of the variables, which is important in regional development, is the issue of out-migration and in-migration (Fig. 9). For a more detailed explanation of this situation, the comparison of changes of in-migration in Khaf and Mashhad is employed.

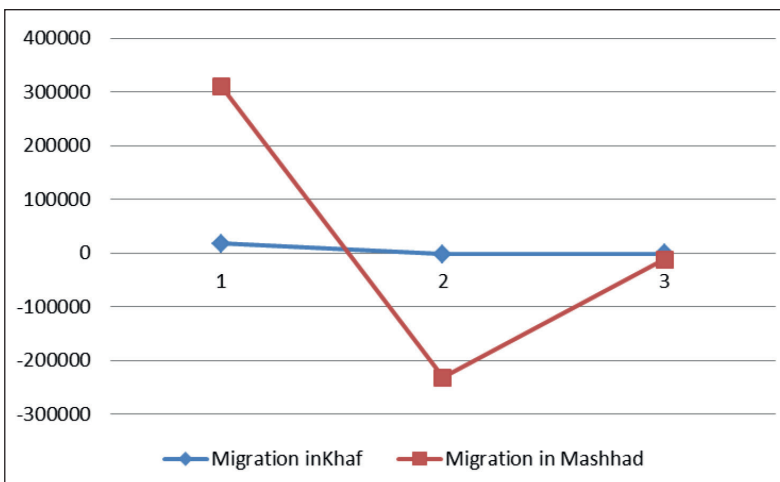


Figure 9
Migration in Khaf and Mashhad
Source: *Statistical Centre of Iran, 2012*



During 1986-1996 both the cities had out-migration, and the tilt of these changes was very high. Both cities in the second decade (1996-2006) had in-migration but with more growth in Mashhad and the third decade (2006-2011), the in-migration of two cities was the same.

CONCLUSIONS

This study aimed to analyse the development of Khaf using the market model. To this purpose, three factors of changes in the labour force, the natural supply of labour and participation rate were used. The performed analysis revealed the following results:

First of all, in-migration in Khaf was dependent on surplus jobs in the region and the results of labour market showed that this city didn't have out-migration in any periods except the first decade (1986-1996). As the study showed, changes in the labour force (DL) of Khaf were more dependent on participation rate (DA) than natural changes in the labour force (DN). The analysis of the lack of job in the first and second decades also showed that this factor was more dependent on participation rate (DA) than natural changes in labour force (DN). However, in the third decade participation rate (DA) and natural changes in labour force (DN) had the same rate in impact on lack of jobs. In two periods under review, the situation of the local growth rate of the services sector was better than the growth rate of the industrial sector, while the industrial sector had a better condition than agricultural sector. Generally, the ultimate findings showed that the agricultural sector had a worse situation than the services and industrial sectors. In the four-decade census, services, industrial and agricultural sectors were economic winners in 1986-1996, 2006-2011, 2006-2011 respectively. In relation to the development, we can say that good conditions were not observed in the first and second decades (1986-1996, 1996-2006) due to lack of jobs, but the third decade (2006-2011) had better conditions due to surplus jobs. In terms of economic sectors' rate of growth, decades 1996-2006, 1986-1996 and 1996-2006 were in the highest and lowest situation, respectively. Changes in the labour force (DL) in each of the last three decades in Khaf were decreasing and positive. However, Mashhad as the provincial capital in this period had very different conditions so that changes in the labour force (DL) in this city were negative during 1986-1996 and positive as well as incremental during 1996-2006 and 2006-2011. The assessment of the trend of migration in Khaf and Mashhad showed that both cities had out-migration in the first decade and in-migration in the second and third decades. However, the rate of in-migration in Mashhad was more than Khaf.



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