



# Application of RAP Model in measuring the capabilities of attracting sources in the economy: A case study of the tourism sector in Sistan and Baluchestan

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## ABSTRACT

Currently, tourism and tourism economy are becoming one of the main pillars of the global economy, today's tourism industry is one of the most important parts of the economy in each country can affect employment and income. Remained monuments of ancient civilization and natural scenery, like most Iranian provinces of Sistan and Baluchistan can be a great source of income and employment generation rather than have a positive influence on the economy and culture. Therefore, the present study information about the employment of unemployed workers in the province of Sistan and Baluchistan in 2011 as a source of manpower has been considered, with the pattern model of the center resources, firewalls can cushion the economic sector of employment, is calculated. Results of operations shows that various economic sectors in the province of Sistan and Baluchistan, according to its absorption rate, the number of unemployed persons in each province they are attracted to and among various sectors of the tourism sector in the province At what position of the there are resources in terms of manpower.

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## 1.Introduction

Using varies resources in different part of economy is required two specific contexts. One of them is quantity and quantitative rate of sources and other is resource absorption potential in different part of economy. There are several patterns to evaluate and calculate position of resource allocation in different sectors using mathematical methods.

Most known and applicative pattern is linear planning. Using this pattern, it is supposed to utilize more of limited source in one region and to improve economic growing degree. Linear planning pattern try to use of source in desirable degree according to limited sources. If there water, investing, human resource limitation in one region, linear planning patterns shows how to use of these limited sources efficiently. Main purpose of this pattern and final results are optimum and desirable allocation of sources to different activities.

Several patterns and linear planning patterns emphasize on quantity and quantitative rate of source and limited source to allocate activities.

Ability, talent and internal potential of economy are main point to interact of source and activities to absorb quantity of sources.

So, different patterns should be tested to evaluate abilities of sectors. Although, source limitation in allocation sector is most important, resource absorption potential are important too.

Studied papers about tourism includes Ebrahimzadeh et al (2006), Farmand (1999), Pourhassan (2000), Ghaffari and Torki Herchegani (2010), Basharabadi Mehrabi et al (2011), Stamboulis (2003), Bonham et al (2009) and Stewart (2012). These studies shows that by increasing contribution of tourism sector in economy of country and employment are possible by planning and developing facilities. So, in this study, information about employment and unemployment people in Sistan and Baluchistan province in 2010 have been considered as human resource and tries to apply centroid patterns as well as capabilities of absorbing source pattern to evaluate abilities and capabilities of absorbing economy especially tourism.

## 2. Materials and methods

In order to gain study purpose, needed information have been studied using attributive studies like librarian resource of Sistan and Baluchistan planning center as well as strap of Iran statistic center in 2012.

### 2.1. Absorbing pattern and centroid

These patterns offer methods to evaluate performance, attrition, action and reaction of human and society and economic activities in a region. Whereas, location of crowd group is settlement; therefore, absorbing patterns act according to spatial dispersion of crowd centers and their distance. Usage of these patterns in geography and spatial planning includes calculating approximate amount of real travels in a region, number of telephone and telegraph call, transportation volume by rail way or road, money flow, immigration and etc.....

Basic of absorbing pattern is to calculate absorbing amount among two crowd centers. This absorbing capacity has direct relation with center crowd and this relation is more when space among two centers is low. Basic of absorbing patterns in spatial and geographical studies is rules of natural science; it means these patterns are associated with compression, pressure and temperature degree of gas, mass and Substance. Stewart (2012) calculated social power by product crowd of tow biological center and have calculated space by dividing on square. He explained about crowd energy, difference of crowd energy and social power is to remove vim of denominator. Other sample of absorbing method is crowd potential which is associated with absorbing potential in physics. From Stewart's prospective it is required to be able absorb other crowd centers to meet social needs.

Zif have surveyed several studies about absorbing patterns in region planning sectors. Chansi Haris and Edgardan have studied usage of absorbing patterns of spatial and regional contexts.

Most important point in patterns and centroid at geographical and spatial usage is relation crowd volume of two centers instead of mass of two thins in physics science, because this relation is changed by space of two centers, so location and space of two crowd center(s) among two substance in physics science is most important.

## 2.2. pattern of resource absorption potential (R.A.P)\*

Pattern of resource absorption potential is one of centroid absorbing patterns, but there is a main difference between this pattern and others. All absorbing patterns are stagnant according to usage of crowd amount and their distance in a specific time period, but R.A.P is an active pattern and use of allocated resource at economic sectors between two different time periods instead of crowd amount in one time period. P.R.P could estimate oncoming absorbing potential of sectors.

## 2.3. Research hypotheses

There are three hypotheses to apply this pattern to estimate resource absorption potential:

1. Changing amount of resource effect each other's in different sectors during one time period. It means that decrease or increasing of resource in each sector is transferred to other sectors or is supplied by other sectors. For example, employed human resource in economic sectors in Sistan and Baluchistan province shows each sectors affect others, if agricultural sector lose their human resource, it means that other sectors absorb that human resources from agricultural activities. Amount of released human resource is not considered in this pattern, because available information is used in statistic.

If employment is increased in industry sector, employment in other sectors is created. Employment in one industry is caused to employment in two sectors.

In first hypothesis, R.A.P has direct relationship with changing of allocated resource to other sectors in a specific time period. There is direct relationship with changing of employment amount in different sectors in a certain time period in estimating employed absorption potential in different sectors of economic in Sistan and Baluchistan province.

2. although real and potential amount of increasing or decreasing of resource allocation In each sector effect on absorbing potential of other sectors, but attribution of each sector in one time period cause to limit absorbing potential in same proportion.

I.e although increasing an industrial job creates opportunities in other sectors, but increasing this industrial job allocates part of human resource changing to industrial activities and decrease

absorption potential of other sectors. So, there is indirect relationship between resource absorption potential in sectors and resource changing in one specific time period. In fact, in R.A.P pattern attribution of resource changing is applied instead of distance among two centers.

3. Third hypothesis is about potential criteria and absorption capabilities of each sector and potential facilities of each sector (Masoumi Ashkouri, 1996)

This criterion should act as coefficient in the pattern to determine absorption power of two sectors according to facilities and capabilities of each region. It seems that local coefficient in each sector in region is best indicators compared to total country. Desirability of locating each activity in each sector is shown.

## 3. Results and discussion

To estimate local coefficient of each sector in one region rather to total country, below equation is used:

$$(1) \quad K = \frac{r_1}{\frac{R_1}{TR}}$$

Which:

K = local coefficient of each sector

r 1 = Allocated resource of each sector in one region

R1= total of allocated resource in one region

Tr= total of allocated resource of sector at country

TR= total of allocated resource at country

Local coefficient in Sistan and Baluchistan is calculated by below equation in Sistan and Baluchistan province (Farmand, 1999)

$$K = \frac{\frac{\text{Employed human resource in sector}}{\text{Total employment in province}}}{\frac{\text{Total employed human resource of country in sector}}{\text{Total employment in country}}}$$

Each sector with high local coefficient more than sector has better position rather to total country, if this coefficient is less than sector, so performance of that sector is lower. According to all three hypotheses, main equation of R.A.P pattern is described as below:

$$P = K \sum_{E,r=1}^n = \frac{E}{r}$$

P = absorption potential criterion in each sector

K= local coefficient of sector

$$\sum_r \frac{E}{r} = \frac{\text{Sum of changing in allocated resource to differnt sectors in province during a specific time period}}{\text{Total attribution of differnt sectors of allocated resource in the province}}$$

R.A.P pattern use of below equation to calculate employment potential (human resource) in economic sectors of Sistan and Baluchistan province:

P = absorption potential criterion in each sector

K= local coefficient of sector

\*Resources Absorption Potential

$$\sum \frac{E}{r} = \frac{\text{Sum of changing in allocated resource to different sectors in province during a specific time period}}{\text{Total attribution of differnt sectors of employment changes in the province}}$$

As result, there is direct relationship among absorption potential in different sectors of Sistan and Baluchistan province and local coefficient of each sector in region rather to total country, as well as there is indirect relationship among employment absorption and employment changing of each sector rather to total changing of employment.

Allocating resource to economic activities of province is a context to compete in different economic sectors to absorb these resources. To calculate absorption potential, these sectors are divided to seventeen groups.

Table 1 shows basic of these groups. In order to fit information to use in the pattern, employments changing in seventeen groups are reflected according to statistic results in 2006 and 2010. Negative numbers shows missing job opportunities in some sectors.

Agricultural, hunting and forestry, normal household activities and exterritorial organization have these characteristics. Information about human resource immigration is missed, supposed that these released employed human resource have been absorbed in other sectors or are workless.

In absorption potential pattern, negative changing is used in the equation. This means that, releasing human resource of one sector shows reduced effect in the equation.

By dividing negative changing on employment changing of total province which is negative, absorption potential is increased.

(r) is negative because decreasing employed human resource in one sector, for example, agriculture, attribution of agricultural sector of employment changing in total province is negative.

It should be noted that, absolute amount of changing in each sector in absorption potential equation is written in appropriate number during calculating  $\sum \frac{E}{r}$ . It means that, there is lack of r

Denominator (sector attribution). If employment changing in one sector shows potential criterion in employment, so defining an indirect relationship is meaningless.

Other situation is that, being zero about r are shown for some sectors. Column 7 shows basic information and stated that mining, normal households, central offices, exterritorial organization in Sistan and Baluchistan are zero.

Main factor in equation is local coefficient of sectors in region rather to total of country. This criterion shows desirable performance of economic activities in each sector. Column shows K value. It is clear that 7.08 value of local coefficient for fishery sector in Sistan and Baluchistan shows desirable employment in this sector. Supplying electricity, gas and oil, building, transportation, storage and communication, training, normal household, exterritorial organization and uncertain activities show desirability in Sistan and Baluchistan rather to total country.

Lowest desirable local degree is allocated to mining sector with 0.26 values and this shows stagnancy of mining sector in this province. Resource potential in human resource dimension is shown in table 2. In this table, highest value of potential is allocated to fishery, supplying electricity, gas and water, building, transportation, storage and communication, training, normal household activities, exterritorial organization, uncertain activities and central offices. Results show that above sectors have highest potential to absorb human resource. Although normal household

activities and exterritorial organization have missed their human resource during 2006-2010, but results show there is unknown potential in different sectors which develop activities to employment. In fact, tourism activities are best context to create opportunities and developing job which have not been studied well. Below equation is used to calculate

$$Et = \frac{P \cdot UE}{\sum P}$$

Et = value of employed resource absorption of total workless people

P= number of workless in the province

UE= number of workless in the province

$\sum P$  = sum of potential criterion of sectors

Results show performance of these equations in nineteen sectors of economy in Sistan and Baluchistan. According to columns 3 and 4, highest valued of employment potential is allocated to fishery with 26.3 value, then exterritorial organization with 10 percent and central office with 9 percent are shown.

Tourism sector is placed in fifteenth ranking of developing resource absorption of Sistan and Baluchistan province according to continental and environmental capabilities:

$$P = 0/51 \left( \frac{-32902}{-0/3} + \frac{6131}{0/05} + 302 + \frac{20851}{0/18} + \frac{2668}{0/02} + \frac{11363}{0/1} + \frac{26544}{0/24} + 1373 + \frac{30296}{0/27} + \frac{2255}{0/02} + \frac{1900}{0/02} + \frac{7247}{0/06} + \frac{19052}{0/17} + \frac{3274}{0/03} \right) + \frac{1404}{0/01} - 1031 - 225 + 177 + \frac{10688}{0/01} = 1257390 \approx 13$$

Table 1: Basic Information of Sistan and Baluchistan Province

Attribution of sector of employment changes in province	Local coefficient	Employment of whole country (thousand people)	Changing amount (people)	Employed resource of Sistan and Baluchistan province		Sector	Row
				2011	2006		
7	6	5	4	3	2	1	
-	-	20547	-40626	386057	426683	Total	
-0.3	0.88	3902	52105	129720	77615	Agriculture, hunting and forestry	1
0	0.26	185	75	905	830	Mining	2
0.18	0.55	3070	-19036	20912	39948	Industries- production	3
0.02	1.2	277	-498	5134	5632	Supply of electricity, gas and water	4
0.1	1.1	2473	-26011	34382	60393	Building	5
0.24	0.91	2522	-23517	30096	53613	Wholesale, retail, repairing motorcycle and household instruments	6
0.01	0.51	213	-657	1415	2072	Hotel and restaurant	7
0.27	1.29	1950	-18479	33862	52341	Transportation, storage and communication	8
0.02	0.74	324	247	4486	4239	Financial intermediary	9
0.02	0.39	492	819	4482	3663	Tenement, rent	10
0.06	1.39	1690	-3656	48250	51906	Public organization, defend	11
0.17	1.41	1228	-7947	32031	39978	Training	12
0.03	0.94	556	906	11147	10241	Social aid and hygiene	13
0.01	0.6	429	-1573	3898	5471	Other public services	14
0	2.05	31	-1349	285	1634	Activities of normal household	15
0	2.71	1	-117	6	123	exterritorial organization	16
0.01	1.65	1204	5725	22519	16794	Uncertain activities	17

Reference: Iran statistic center 2012, study estimate

**Table 2: potential of economic sectors of Sistan and Baluchistan province to absorb human resource**

Percent	Employment (people) potential	Potential P criteria	Sector	Row
100	158979	668.5	Total	
3.3	5231	22	Agriculture, hunting and forestry	1
26.3	41856	176	Fishery	2
1	1546	6.5	Mining	3
2	3331	14	Industries- production	4
4.5	7134	30	Supply of electricity, gas and water	5
4.1	6540	27.5	Building	6
3.5	5471	23	Wholesale, retail, repairing motorcycle and household instruments	7
2	3091	13	Hotel and restaurant	8
4.8	7611	32	Transportation, storage and communication	9
2.8	4391	15.8	Financial intermediary	10
1.5	2377	10	Tenement, rent	11
0.6	831	3.5	Public organization, defend	12
5.2	8322	35	Training	13
3.5	5588	23.5	Social aid and hygiene	14
2.2	3569	15	Other public services	15
7.6	12128	51	Activities of normal household	16
10	15933	67	extraterritorial organization	17
9	14268	60	Central office	18
6.1	9751	41	Uncertain activities	19

Reference: study estimate

#### 4. Conclusion

It is clear that tourism industry play important role at social developing of nations and effect of all sectors of society. Sistan and Baluchistan province has natural, cultural and human making abilities in tourism sectors, but there have not studied effective activities in this regard. Cause of this include inability to desirable usage of geographical situation, lack of Residence installation to welcoming internal and external tourism, lack of expertise human resource in tourism sector, lack of marketing and information, cultural –social barriers and securities problems. Long-term planning and recognizing potential is required in tourism sector in this province. Utilize of tourism advantages like income and employment need to attention of all economic sectors to cooperate together.

Age and gender of youth in Sistan and Baluchistan province is one of most important factors which cause to increased unemployed people in the future. Most of unemployed people in the future included all educated people. Tourism is one of solution to solve unemployed problems.

Concurrency of tourism activities with designed activities like initiation of economic region and developing multipurpose ports play important role to facilitate tourism installation.

Following actions are required:

- government investing at infrastructure sector
- absorbing private investment and their cooperation in investing
- making safe situation to investment

- new regulation in tourism and modify available regulation
- developing facilities and installation
- making a specific organ to supervise of tourism industry and prevent of shake of regulation
- Increasing handcraft in province which have direct relationship with income and employment.

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