

Ranking Doing Business Indices in Sectional and Regional Aspects: The Case of Industrial Sector in Yazd Province, Iran

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Abstract

Improving the doing business and enhance its indices are emphasized in the fifth Article of general policies for job creation in Iran. So that, this subject is considered in articles 4, 5 and 6 of continuous improvement of doing business plan in sectional and provincial perspectives. However, although the ranking of each country or region is calculated by combination of several business indices but this essential question that which of these factors is the most important to improve the business environment in each region or economic sector? is very important and there are different ways to answer it. However, accepting the centrality of the industrial sector in the economic development of Iran, it seems to answer this question is reduplicate important from the perspective of managers in this sector. Hence, this study attempts to indicate the priority of doing business indices for reform in order to implement of doing business plan in provincial level. This study is performed from the viewpoints industrial artisans, experts and managers in Yazd province as the province that has the first industrial position within provinces of Iran. Using snowball sampling and Analytic Hierarchy Process (AHP) technique, the results of this study indicate that, although there are a few differences in the ranking of business indices from the perspective of intended groups but, summing up, three indices included getting credit, trading across borders and protecting investors are considered as the main indicators of doing business reform.

Keywords: Analytic Hierarchy Process (AHP), Doing Business Indices, Industry Sector.

JEL classification: J08, M21, L52.

1. Introduction

General policies of Employment in Iran have been presented in thirteen articles. The fifth article of this notification is allocated to improve the doing business and enhance its indicators (political, cultural, legal and macroeconomic environment, labor market, taxes and infrastructure) and support the private and cooperative sectors and the competitiveness via reform of the laws, regulations and relevant procedures within the constitution of Islamic Republic of Iran. However, the available evidence indicates that Iran's position in the both global and regional scales in terms of doing business indices not only failed to improve over the past years, but also it has declined extremely. For example, the international position of Iran in term of doing business indices is shown for the years 2006, 2010 and 2013 in figures 1, 2 and 3. Figure 4 shows the international ranking of Iran during 2006 to 2013. As can be seen, while countries such as New Zealand, Singapore and the United States have always placed in the top five countries in terms of ease doing business index, in the other hand,

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African countries have worst status in this regard. Whereas, figure 4 indicates that the ranking of Iran has declined from 108 in 2006 to 137 in 2010 and since then to 145 in 2013.

Figure1: the improvement in doing business index in Iran and some other countries (2006)

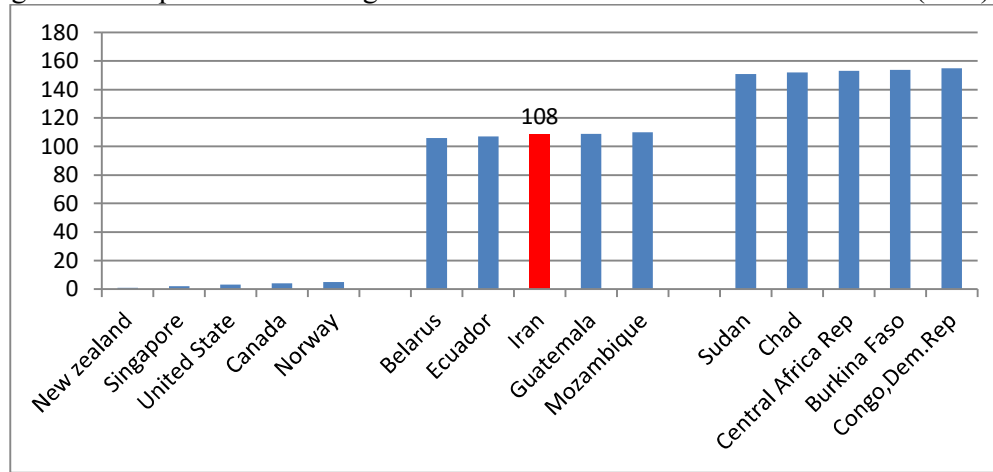


Figure 2: the improvement in doing business index in Iran and some other countries (2010)

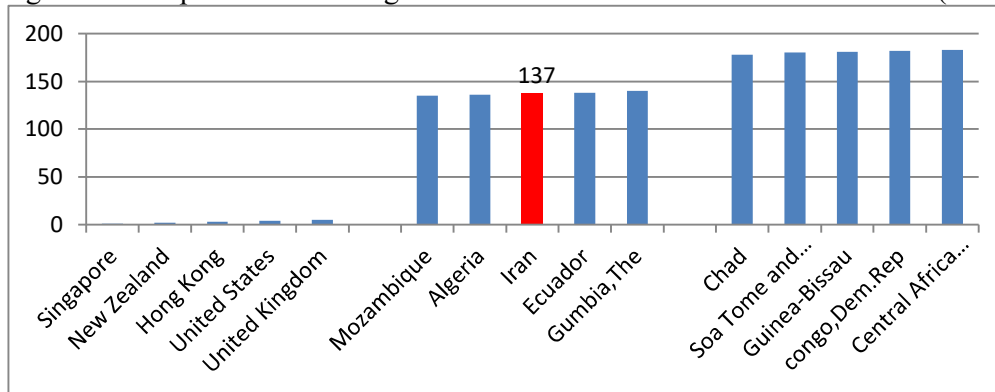


Figure 3: the improvement in doing business index in Iran and some other countries (2013)

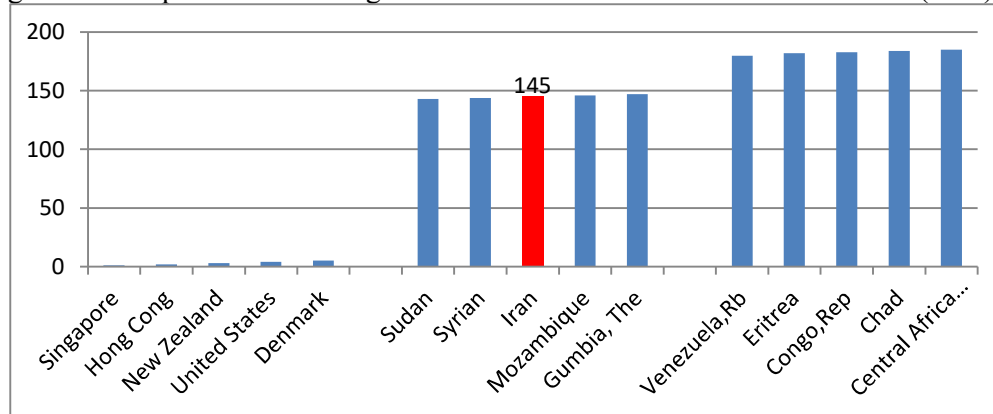
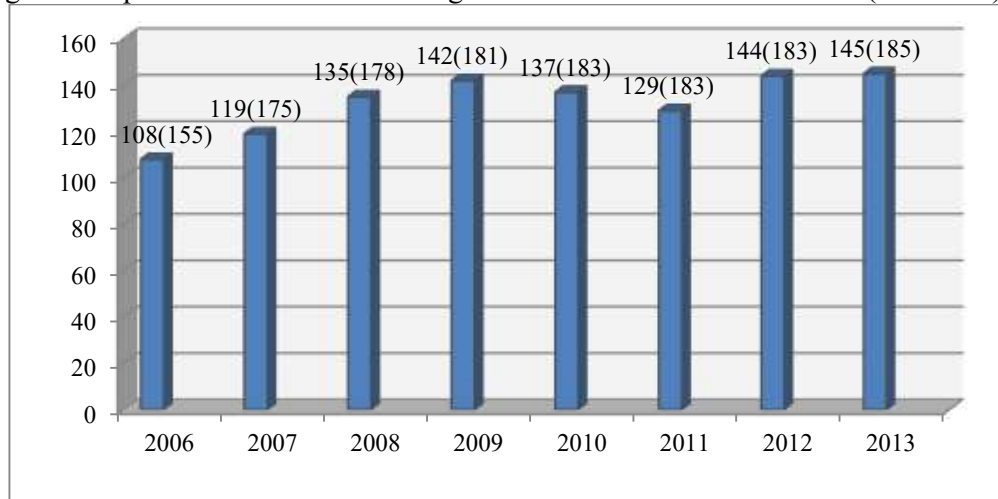


Figure 4: the position of Iran in term of doing business index within other countries (2006-2013)

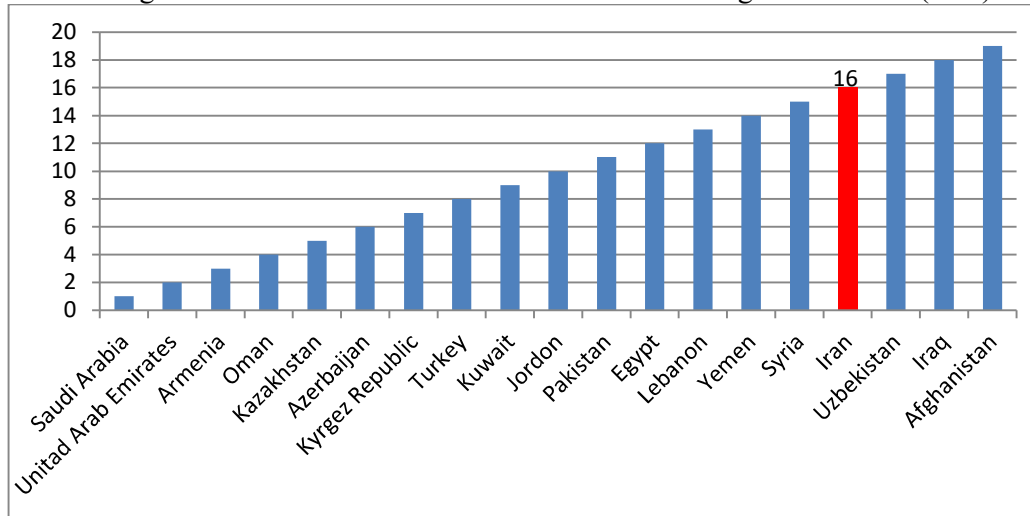


The position of Iran does not seem so clear in term of doing business index in comparison to other region countries. For example, as can be seen in table 1, the rank of Iran has decreased from 14 in 2006 to 15 in 2010 and then 16 in 2013 within 19 countries in the vision of future outlook document of Iran. However, Saudi Arabia is ranked first in all three periods. The regional position of Iran is presented in Figures 5 for year 2013 in terms of doing business indices. As can be seen, Iran had not a considerable position in comparison to the intended countries.

Table 1: Ranking intended countries in future outlook in term of doing business index

Country \ Year-Rank	2006		2010		2013	
	Reg. Rank	Int. Rank	Reg. Rank	Int. Rank	Reg. Rank	Int. Rank
Saudi Arabia	1	38	1	13	1	22
Armenia	2	46	4	43	3	32
Kuwait	3	47	5	61	9	82
Oman	4	51	7	65	4	47
Pakistan	5	60	10	85	11	107
United Arab Emirates	6	69	2	33	2	26
Jordan	7	74	12	100	10	106
Kyrgyz Republic	8	84	9	80	7	70
Kazakhstan	9	86	6	63	5	49
Yemen, Rep.	10	90	11	99	14	118
Turkey	11	93	8	73	8	71
Lebanon	12	95	14	108	13	115
Azerbaijan	13	98	3	38	6	67
Iran, Islamic Rep.	14	108	15	137	16	145
Iraq	15	114	18	153	18	165
Syrian Arab Rep.	16	121	16	143	15	144
Afghanistan	17	122	19	160	19	168
Uzbekistan	18	138	17	150	17	154
Egypt	19	141	13	106	12	109

Figure 5: Ranking the intended countries in future outlook in term of doing business index (2013)



In addition to importance of the doing business in both national and regional scales, the provincial aspect of this issue has been considered in the articles 4, 5 and 6 of the plan for continuous improvement of doing business. According to these articles, in each of the provinces, the governor is responsible for collaborating with the heads of rooms provincial council discussion of the government and the private sector in a combination to suit the council discussed and its chairmanship to form and process of receiving and reviewing requests organizations and economic actors adopt decisions to improve the business environment in the province to organize. Provincial councils are required to discuss those reports and requests that the national and global dimensions have to consider and decide to have a conversation Council Secretariat (article 4).

Also, all executive agencies and departments, their main provincial centers and organizations concerned in judicial discretion of the Department of Justice are required to use the facilities and manpower available, the unit improved business environment under the highest level of performance with have established the following tasks:

1. Continuous engagement with relevant economic actors and attempting to solve their problems within the provisions and powers the device.
2. Proposing amendment of laws, regulations, circulars, guidelines and procedures for implementing the provincial council's site or offices to improve the business environment and the upstream device and follow-up effect or refer it to the Council Secretariat dialog (article 5).

Whereas, according to the Article 6, all executive systems and the agencies, organizations and agencies of the provincial centers are required to introduce a person as a speaker, every week a meeting with representatives of organizations, economic stakeholders, speaker and Plenipotentiary Representative highest official of that form and representatives of organizations and entrepreneurs to questions about its function within the device to respond to their complaints and demands and legal requirements. Accordingly, reforming the doing business is considered in recent years in regional and sectional scales as well as national aspect. Hence, this study attempts to explore this issue from the perspectives of experts in industrial sector of Yazd province. Whereas, the industrial sector in Iran economy is known as the vanguard of economic development, the recent studies also indicated that Yazd province has located in the first position in terms of industrial development. For example, the most recent study, conducted by the ministry of industry, mine and trade entitled "plan of mining and technology logistics: 2008-2011", indicated that Yazd province had the first rank in comparison to other provinces in terms of industrial status.

In this study, the classification of provinces has been carried using multivariate model and simple weighting method. The following indices are used to rank provinces:

- ✓ The amount of investment and employment in industrial plans which had physical progress over than 60 percentages.
- ✓ The Space of lands which have been allocated to the industrial investments.
- ✓ Industry and mining value added based on population of each province

According to table 2, Based on the mentioned model and introduced indices in this study, Yazd province is located in the developed provinces group in term of industrial development level.

Table 2: Ranking the provinces of Iran in term of industrial development

Deevelopment Level	Rank	Province
Developed Provinces	1	Yazd
	2	Semnan
	3	Ghazvin
	4	Markazi
	5	Boshehr
	6	Esfahan
	7	Zanjan
	8	Khozestan
	9	Kerman
	10	Qom
	11	Azerbaijan Sharghi
Developing Provinces	12	Tehran
	13	KhorasanShomali
	14	Gilan
	15	Hormozgan
	16	KhorasanRazavi
	17	Chaharmahal&Bakhtiari
	18	Mazandaran
	19	Ilam
	20	Fars
Undeveloped Provinces	21	Ardabil
	22	Lorestan
	23	Khorasanjonobi
	24	Hamadan
	25	Kermanshah
	26	Azerbaijan Gharbi
	27	Kordestan
	28	Golestan
	29	Kohgiloye&Boyerahmad
	30	Sistan&Balochestan

Source: the planning office of department of planning, development and technology

Accordingly, awareness of doing business indices from the perspective of the industrial experts of this province is quite valuable. Hence, this study attempts to examine this issue from the viewpoint of industrial artisans, experts and managers. In this regard, the content of this study is organized in four sections: After the introduction, the second section

is allocated to the research methodology. The third section reports major findings. The conclusions are presented in final Section.

2. Methodology

To identify the priority of doing business indices in industrial sector of Yazd province, ten factors can be considered as follow:

- Starting a business
- Dealing with licenses
- Employing workers
- Registering property
- Getting credit
- Protecting investors
- Paying taxes
- Trading across borders
- Enforcing contracts
- Closing a business

Hence, three statistical populations are defined according to the expert artisans, industry experts and managers ideas and three samples are selected from each of population by snowball sampling method. The following Analytic Hierarchy Process (AHP here after) questionnaire is presented in order to indicate the importance of each factor. After the extraction of data from the questionnaires and in the final step, the Expert Choice software is used to ranking the indices as well.

Table 3: The pair wise comparison questionnaire for ranking the doing business indices from the perspective of industrial artisans, industrial experts and managers of Yazd province

[illegible]

Registering property (e.g. the ease of registering property and reduce the number of steps, time and cost of Organizations such as the documentation, Municipal and Tax Affairs) /										
Getting credit (the ease of obtaining credit and observance of legal rights of borrowers and lenders)										
Protecting investors (increase of responsibility of managers, transparency and ease of denunciation of shareholders)										
Paying taxes (e.g. ease of paying taxes in terms of the number of paying and payments, the tax rate and the time for payment										
Trading across borders (e.g ease of export and import licenses in terms of required cost and time)										
Enforcing contracts (e.g. warranty agreements, receive returned checks and allows easy pursued by the judiciary)										
Closing a business										

In this study, the Analytic Hierarchy Process (AHP) technique is used to rank the effective factors in doing business. This method is almost most popular and applicable multi-criteria decision making techniques for dealing with complex decision making. The AHP is simple tool because it provides the simple way to introduce of both the criteria and the options by the decision makers. This technique is widely used as an analytical tool in various fields of studies. The AHP purpose is providing a way to combine both qualitative and quantitative evaluations and overcome the contradiction between the practical demand and scientific decisions. The AHP analyzes multiple criteria decision making problems by providing a hierarchy of criteria and sub criteria which the nature of these criteria can be quantitative and qualitative. The AHP combines the experts' ideas and simplify the complex

decision making and then it investigates the relative importance of evaluation in terms of scale based on the pair wise relative evaluations. The AHP can be implemented in simple consecutive steps:

1. Determining the relative importance of criteria based on experts opinions or using pair wise comparisons of the criteria.
2. Determining the criteria weight
3. Doing some analyzes in order to present the alternative solution strategies for every criteria
4. Create a single score for each alternative solution strategies

The final logic of AHP is that the options are ranked according to their scores and the best of them is selected finally. Implement of AHP is presented as the following steps:

1. Making hierarchy process
2. Determining the priorities (pair wise comparisons evaluations)
3. Computing the criteria weights
4. Checking the consistency

The base of this technique is pair wise comparisons evaluations which begin by providing a hierarchical tree. The required information is gathered by questionnaire or interview required method. The comparison score in AHP can be considered 1-9. This will enable decision makers to determine which element is dominated several times on the other elements and its scale is integers. At this stage, decision makers in each decision compare two elements and offer a score according the amount of priority of first option on other subject to pair wise comparison table. Table 4 shows scoring judgment between two elements based on a scale of 1-9.

Table 4: The AHP judgment scale

Description	Definition	Importance Degree
Two elements have equal importance	Equally important	1
One element is relatively preferred to other element	Relatively preferred	3
One element is much preferred to other element	Much preferred	5
One element is very much preferred to other element	Very much preferred	7
One element has an extremely prefer to the other element	Extraordinary preferred	9
Middle important		2,4,6,8
When element i is compared with element j , one of the above number allocate to it and the inverse of that number will be assigned to j . ($x_{ij}=1 / x_{ji}$)		

The results of pair wise comparisons can be presented by *pair wise comparison matrix* ($n \times n$).

$$A = \begin{bmatrix} a_{11} & \dots & a_{12} & \dots & a_{1n} \\ \vdots & & & & \\ a_{21} & \dots & a_{22} & \dots & a_{2n} \\ \vdots & & \vdots & & \\ a_{n1} & \dots & a_{n2} & \dots & a_{nn} \end{bmatrix} \quad a_{ii} = 1, a_{ji} = \frac{1}{a_{ij}}, a_{ij} \neq 0 \quad (1)$$

Each entry a_{ij} of the matrix A represents the importance of the i^{th} criterion relative to the j^{th} criterion.

To determine the priorities for each level: to do this, the comparison is performed firstly and then, the priority of each factor is determined using the weighted average. The calculated values show the priority or importance of each factor. The weighted average and the concept of normalization are used to determine the priority of factors as equation (2):

$$r_{ij} = \frac{a_{ij}}{\sum_{i=1}^n a_{ij}} \quad j = 1, 2, \dots, n \quad (2)$$

Where, r_{ij} is a normal component. After normalization, the average of values of each row is calculated in order to obtain the level of priority (importance) of each criterion such that:

$$W_i = \frac{\sum_{j=1}^n r_{ij}}{n} \quad j = 1, 2, \dots, n \quad (3)$$

$$\sum_{i=1}^n W_i = 1$$

Computing the consistency of comparisons: Since that the factors are compared in pairs, it is possible to determine the amount of reasonable comparisons. In other words, the consistency of factors can be indicated by rate of consistency.

The rate of consistency is a mechanism that indicates the amount of validity of values. Accordingly, it is necessary to calculate the consistency index:

$$CI = (\lambda_{\max} - n) / (n - 1) \quad (4)$$

The following equation is used to calculation of $\lambda_{\max}$. This is always true for inversion and square matrix A.

$$A \times W = \lambda_{\max} \times W \quad (5)$$

Where, $\lambda_{\max}$ and W are special value and weighs vector respectively. Thus, $\lambda_{\max}$ is obtained using weights derived from the AHP and judgment matrix. To do this, the judgment matrix ($n \times n$) is multiplied in the weighting matrix ($1 \times n$) and the average of elements of this matrix gives the $\lambda_{\max}$ value. The rate of consistency can be calculated as follows:

$$CR = \frac{CI}{RI} \quad (6)$$

If $CR \leq 0.1$, the comparisons are accepted as consistent comparisons. Otherwise, the comparisons are returned to related people. Finally, the rank of criteria is achieved by combining the experts' ideas.

3. Results and finding: determining the priority of doing business indices

The priority of doing business indices is indicated from the perspective of three intended groups using AHP. Figures 6 to 9 shows this ranking based on consistent responses. As can be seen, although the ranking of doing business indices in perspective of industrial experts is different from two other groups specially about the three first priority but, summing up, three indices included getting credit, trading across borders and protecting investors are

considered as the main indicators of doing business reform in Yazd province respectively. These indicators have been considered as the first to third priority to reform of doing business in perspective of all experts who present consistent answers.

Figure 6: The priority of doing business indices from the perspective of artisans

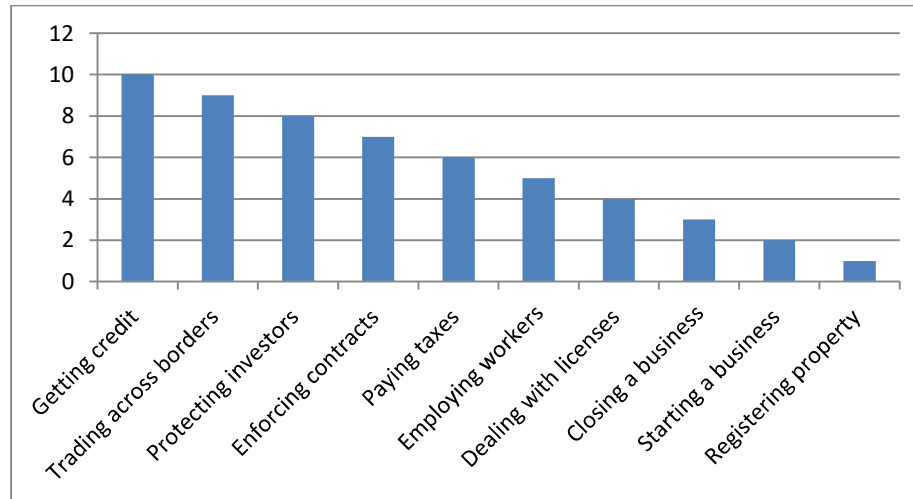


Figure 7: The priority of doing business indices from the perspective of industrial experts

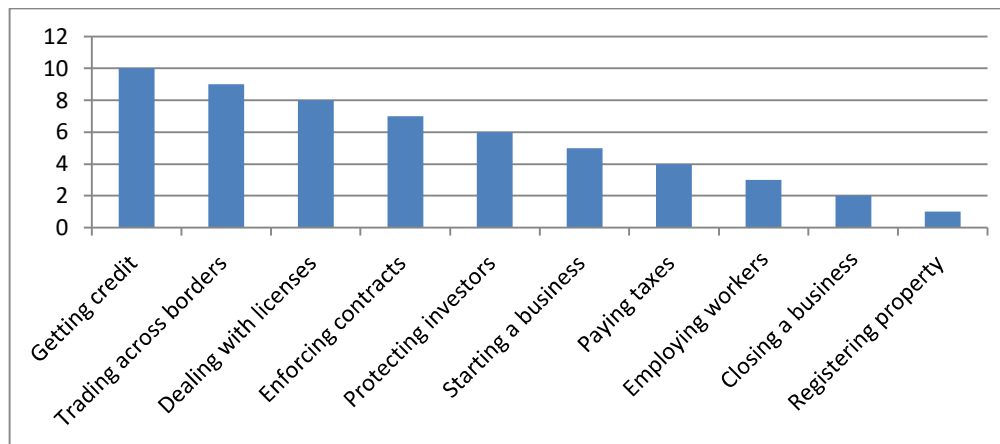


Figure 8: The priority of doing business indices from the perspective of industrial managers

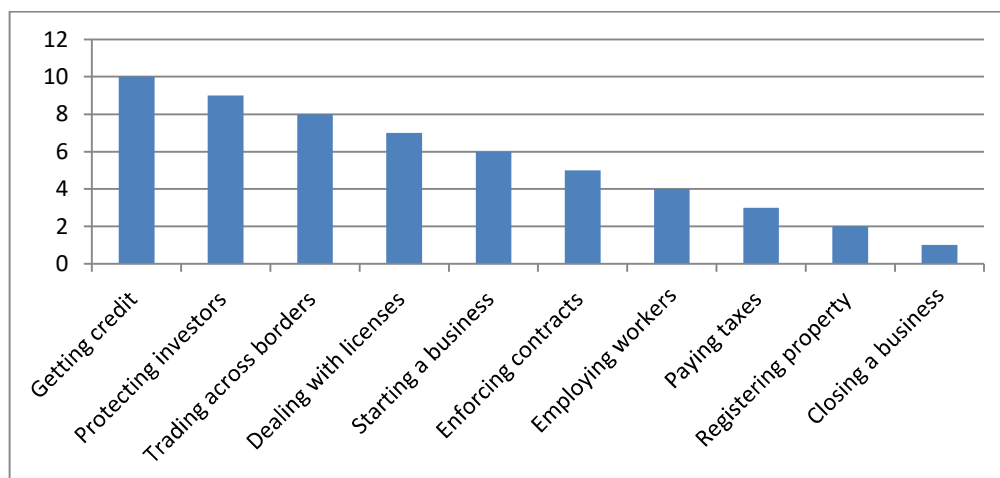
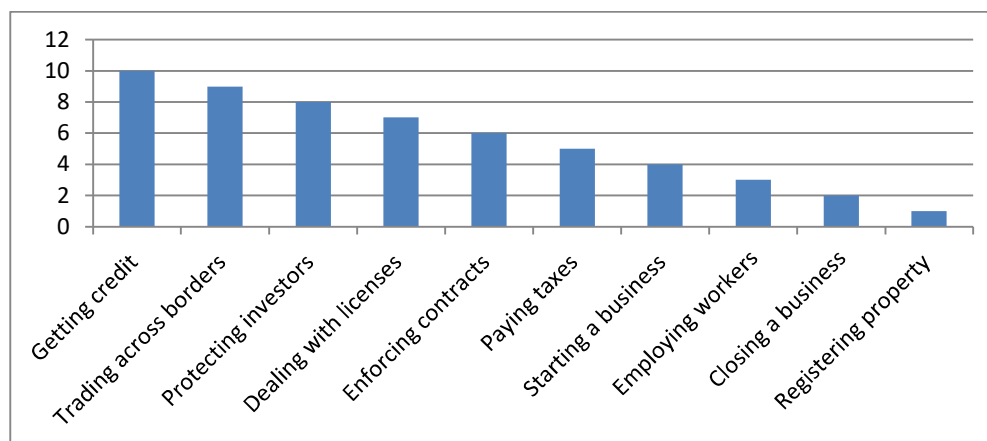


Figure 9: The priority of doing business indices, in general



4. Summary and Conclusion

Although, the improvement of doing business has been considered in national development plans of Iranian recent years, but existent evidence shows that both international and regional position of Iran was not considerable and its position has not improved over time. The provincial and sectional aspects of this issue have been considered in the articles 4, 5 and 6 of the plan for continuous improvement of doing business. Accordingly and with consider to the centrality of the industrial sector in the economic development of Iran, the ranking o doing business in this sector is important in order to implement the employment policies and articles 5,6,7 of this plan. This study is performed base on the perspective of three groups, expert artisans, industrial experts and industrial managers, in Yazd province as the province that had first rank in terms of industrial development in recent years. As can be seen in table 5, from the viewpoints of three intended groups, the getting credit index has been indicated first with priority to improve doing business in Yazd province.

Table 5: The priority of improvement of doing business indices

Expert Groups Doing business indices	Expert Artisans	Industrial Experts	Industrial Managers	Sum
Starting a business	9	6	5	7
Dealing with licenses	7	3	4	4
Employing workers	6	8	7	8
Registering property	10	10	9	10
Getting credit	1	1	1	1
Protecting investors	3	5	2	3
Paying taxes	5	7	8	6
Trading across borders	2	2	3	2
Enforcing contracts	4	4	6	5
Closing a business	8	9	10	9

The results of mentioned priorities show that the production for export was important from craftsmen because the trading across borders index is second priority in respect to their idea. However, the protecting of investors index has placed in third place. Hence, the position of doing business indices and their priority should be considered in industrial development policies of Yazd province. Whereas, the authors of this study justify the study in this issue with consider to important of economic sectors in provinces of Iran.

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