Trends in Life Sciences
An International Peer-reviewed Journal
ISSN: 2319–4731 (p); 2319–5037 (e)

# THE EFFECT OF MOVING SKILLFUL AND EDUCATED HUMAN LABOR FORCE INTO MAJOR CITIES (CASE STUDY: IRAN)

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**ABSTRACT**
Considering incredible role of human labor force and especially the groups having higher level of knowledge and skill, it can be recognized that areas can be developed that have the most available human labor force. In fact, the government should try to manage the rate of each area so as to reduce this gap as much as possible. But imbalances show that imbalanced distribution of the educated people deteriorate the condition as well as the other factors. This article, due to various limitations, aimed at showing the process of moving skillful and educated human labor force into major cities. The main theory suggested by this model is that the knowledgeable entrepreneurs are attracted to those careers and activities that require the skilled and educated labor force, influencing the trends in career opportunities. The results show that the places where had higher levels of skill through three last decades, have absorbed more skilled workers. Carrying on this process, it will be more likely to separate the labors skillfully over time. In any case, the main results show that income and wealth differences are important among people, and income differences in different areas and places are problematic.

**KEY WORDS:** *Centralization, Metropolitans, Skilled Labor Force, Iran*

## Introduction

In the current decade, the role of human has been of great consideration in development due to the important role of human agent in the process of development. The greatest competitive advantage in countries and organizations is having influential human labor force. In the developed countries, the rate of human resources in their wealth is more than that of physical and natural resources. In average, the human resources involve 64% of wealth in countries around the world, 16% goes for the physical resources and 20% belongs to natural resources. However, these rates are completely different in some countries. For instance, 80% of Japan's wealth is included in the human resources but this proportion in Iran is just 34%. In any case, there is a direct relation between human progress and development in countries (UNDP, 2013). Considering incredible role of human labor force and especially the groups having higher level of knowledge and skill, it can be recognized that areas can be developed that have the most available human labor force. In fact, the government should try to manage the rate of each area so as to reduce this gap as much as possible. But imbalances show that imbalanced distribution of the educated people deteriorate the condition as

  

well as the other factors. For instance, the main cities in Iran, which had the highest number of educated people in 1976 increased the number of their specialists in the following decades significantly. As a result, the correlation between the rate of the skilled labor force in 1976 and its rise in 1970s- 2000s is over 43.2%. Accordingly, by increasing one percent in the rate of labor force with academic education in 1970s, the rate of the educated people in career opportunities increased by 0.0108% in 1970s-2000s. The correlation between the initial rate of academic experts and the amount of increasing this rate in 1970s was 36.5% and in 2000s was 49.8%. Generally, there is a strong correlation between the changes in academic staff and the initial rate of the skilled population in these areas. This process is compatible with the economic models (See Murti's economic models, 2004) and the techniques of initial skill levels in 1940s in America and other Western countries. The procedure of events happened in spatial distribution of the educated population show that at the beginning of this process, the places with the skilled people and experts were less likely to increase the levels of skill and academic education. Hence, there was no significant difference between urban areas. But, this process is going on. Basically, there can be seen more innovative actions in the parts where enjoy higher levels of technology and skill. In this context, new companies tend to select their employees among specialists and experienced people (See Abowed at al., 2001). In hand information shows that there is a high and significant correlation between higher management skills in industry and employing the skilled and specialized workers. For instance, the correlation between the skilled labor force and academic force in this part was 31.5% in 1976. This amount increased to 42.3% in 2006. Therefore, increasing one percent in the rate of the managers with academic degree, rate of the specialized labor force increased about 0.12%. in increased to 0.32% per each 1% in 2006. Considering the afore-mentioned conditions, we use a model designed for predicting the income and wage patterns in metropolitans. As the results show, there is a strong and significant relation between level of education and earned income in metropolitans. In 1976, the correlation between the people with academic education and high income in these areas was 17.4%. it has been increased to 52.3% in 2006. Considering the one's level of education constant, the correlation between education in these areas and wages is constantly high, and this amount is defined for the workers with the higher levels of skill. Finally, it can be said that the variety in the levels of skill in metropolitans is related to reducing the convergence in these areas (See Barro & Sala-i-Marton, 199). According to available information, the correlation between initial wages and increasing salary was -29.9% in 1976. It was over 12.4% in 1996. In this context, the convergence and regional balance has been eliminated, and there should be considered some certain policies to change the condition.

**Theoretical Principles**

Population rate, especially the skilled, specialized and efficient labor force is one of the main components in constant development in a country. Nowadays, using different methods, the endeavors focus on distributing the population in a way that makes possible enjoying all the facilities and capabilities in the land as much as possible. Although various projects have done on this issue, most were on career opportunities. The vast number of these projects tried to examine how to offer and demand this producing factor (Ballante, 1979: 23), and some focused on the geographical borders in career opportunities, particularly commuting between residence and the work place (Button, 1976: 23). However, some researchers studied the changes in career opportunities based on the economic processes and the effects on these processes on the regional

  

imbalances (Blacl and Clarke, 2000: 307). However, there are few studies on polarization of the specialized labor force in metropolitans. The studies done on this issue are about separation of career opportunities spatially and structurally (Pratt, 1990: 1365), and the tendency of the professional and specialized workers to move to metropolitans. In Iran, like the other countries, some studies have been done on the components of the general topic, including changes and combination of age and gender and various careers in Iran by two censuses in 1956 and 1966 (Shaykh Hasani, 1975), active and passive population and the related economic and social problems in Iran (Akbari Babilipour, 1978), employment, development and studying the career changes process in the main economic sections in provinces of Iran in relation with socioeconomic development during 1986- 1996 (Ramazanian, 1999), studying the relation between employment and production structure according to the input- output table (Lotfi, 2000), studying the process of offering human labor force, employment and unemployment in the population of Iran during 1986-2000 (Abasi, 2002), analyzing the changes in human labor force career opportunities in the central cities (Shokohi and Zanganeh, 2004), self-employment vs. unemployment in Iran (Ghavidel, 2011), income inequality in Iran during 1984- 2006 (Raghfar, 2009), economic development and distributing income in Iran (Mehregan & Hekmat, 2014) and so on.

**Methodology**

Using statistic and public census data in Iran (Iran Statistical Center, 2013), reports by the Central Bank on prices and wages, sampling from real states and other related institutions on land, housing, and theses, this paper aims at studying the distribution of adult population with academic degrees, workers and professional managers in 100 sampled cities (with population over 80000) all over the country. In this project, "mother cities" refer to the cities, based on the last census in Iran, where had a population over 500000 (totally 12 cities including Tehran, Mashhad, Isfahan, Tabriz, Karaj, Shiraz, Ahvaz, Qom, Kermanshah, Urmia, Zahedan, and Rasht). It is noteworthy that in some cases in which there was no separation among the educated groups, income or the value of the lands, we rearranged the data and statistics. Hence, we applied different statistical methods. As providing all these materials is impossible within this paper, it is not included them. Since proving the applied equations in this paper are placed in the last part, we refuse repetition.

**Skill variety**

As mentioned before, there is a relation between the changes on the rate of human labor force's skill variety in particular cities and the skilled people who resided there initially. Therefore, it is necessary to be recognized that acquiring higher levels of skill can be explained by industrial changes in more developed cities. Finally, the condition and process of knowledge and skill polarization in particular cities should be specified.

Correlation between increasing work skills and the primary skills in metropolitans to follow this relation, the following relation can be used:

$$(1) \qquad College_{t+1} - College_t = \alpha + \beta * College_t + \text{Other controls} + \varepsilon$$

In this formula, $college_{t+1}$ is the rate of people who were educated primary level or higher att.

The relationship was computed based on the above-mentioned relation and other data. The results show a relation between the increasing rate of people in academic education and the number of

  

ISSN: 2319–4731 (p); 2319–5037 (e)

people who had a degree in 1996. In this relation, $R^2$ is about 23.2% and the correlation coefficient is 0.12%. Therefore, once the rate of the academic educated increases in the mother cities in 1996, the average proportion of the people with academic education increases about 0.95% in 2006. This coefficient is not only a reflection of the skilled people's tendencies to move to particular places in the recent years. Applying Murti's method (2004), it can be possible to use average number of people with academic degree in a year in the mother cities, before 1976, as a measure for the human capital stability and survival in a particular area. Therefore, the correlation between the numbers of the academic educated in the mother cities before 1976 and growing the rate of people with academic degree during 1996- 2006 was 19.1%. Once the numbers of the educational academic before 1976 are used as a measure for stability of number of people with academic degree in 1996, the following relation can be used to evaluate it:

$$(2) \qquad College_{2006} - College_{1996} = -0.0049 + 0.18 \times College_{1996}$$

The relation can be stronger when this historical measure is used for the educated in 1996 if there is a relation between the primary levels of skill and growing level of skills. In relation (2), the standard controls were used on the central cities in a province and the other cities having population over 500000. These controls are the levels of primary income logarithm, the number of primary population logarithm, and the initial rate of the employed workers in factories. The results show that the regional effects were insignificant, and hence, can be ignored. However, the rate of the academic educated in the industrial cities are on the rise. The predictions done on the primary income show increasing numbers of the academic educated. Although most of these factors affect significantly, their most important application is reducing the initial rate coefficient in the number of the educated; reducing it to 0.10 (Mehregan and Hekmat, 2014). The above-mentioned relation was repeated to compute the rate in 1980s. The findings show that even though the correlation between the primary skills and development of skills were insignificant in this decade, there can also be observed. The correlation coefficient between development and the primary levels was computed as 36.5%. The coefficient in this regression is 0.11%, which is in the same amount in 1996. Comparing the resulting data, the cities where had the highest levels of skill in 1996 (most had big and important universities) increased their skill levels constantly. But, in 1980s, growing skills was relatively not significant in these academic cities. Once the explained controls were used in 1980s, they lead to different results. In this context, applying other controls causes increasing the coefficient of the primary years in school. Hence, by adding one unit to the primary income through 1986 to 1996, there would no rise in the rate of the population with academic degree. The next matter is that the metropolitans where had high population have become more specialized in 1980s. Doing the same computations showed interesting results in 1976. The raw correlation between the primary rate of workers with academic degree and the following increase this measure was in the highest level in this decade. The regression coefficient in this stage was 0.20% and $R^2$ was 29.9%. By adding other controls, there can be seen minor differences in this coefficient. However, during this decade, the industrial cities had no more educated people who passed 16 years or more in educational centers. In the following, we use a different model:

$$(3) \quad \text{Log}\left(\frac{AdultsswithBAs_{t+1}}{AdultsswithBAs_t}\right) = \alpha_1 + \beta_1 \times College_t + \varepsilon$$

  

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ISSN: 2319–4731 (p); 2319–5037 (e)

(4) $\text{Log}\left(\frac{Adultssw.o.BAs_{t+1}}{Adultssw.oBAs_t}\right) = \alpha_2 + \beta_2 \times College_t + \varepsilon$

In this relation, the numerator shows academic labor force in metropolitans at the beginning of this study and the denominator is the number of the employees who were in those areas with the same features in the past. In relation (4), the numerator and the denominator show the same condition for those without any academic degree. This article mainly focuses on the difference amount of $B_1$, i.e. the effects of the primary academic degree levels variable (those who had passed 16 years or more in educational centers), and $B_2$, i.e. the effects of skill levels variable of those who were less than 16 years in educational centers. In this stage, the other controls were eliminated so as to make the comparison between more simple coefficients more understandable. Considering the relations above, the coefficient of logarithm of workers with academic degrees was positive, and significantly 10% valid. In this case, increasing 1% in the rate of those who had passed 16 years or more in educational centers was equal to rise in logarithm of the same group by 0.0017 as significantly had 5% importance.

The coefficient of the primary rate of the workers with academic degree and growing the rate of the workers without academic degree showed that there is no relation between these two factors in 1996, as it may be possible to reject the equality of these coefficients significantly by 10%. The same computations were done for these factors in 1980s. The results showed that the influence of the years in the primary school on rising the number of people with and without academic degrees in the following levels was the same. 1% rise in the rate of people with academic degree was equal to 0.0025 rise in the growing number of people in the other subgroups. The computation done in 1976 shows that the effect of the academic educated is completely different. In this period, 1% rise in the rate of the academic educated, the rate for people without academic degree was 0.005. While, this rate in this period was 0.00049 for the increase rate of the academic educated on growing the population, it is found out that the developed cities had an increasing growth on employing unskilled workers in 1970s. This process had a significant change in 1990s and employing the labor force turned toward the skilled workers. Now the question is this if the more specialized industries tend to be settled in technical and academic cities, based on the relation between primary skill and growing the technical and academic forces? To test this theory, there should be established an index to be able to predict the existing skill levels I the mother cities. In other words, the relation between industry and skill levels in industries should be nationally determined. The index of industrial skills in each industrial area can be obtained by:

(5) $\sum \frac{EINC}{TEIC} \times \frac{WIwBASinI}{TWIinI}$

Where, $TWIinI$ is the total number of the employed workers in industrial sections of Iran. $WIwBASinI$ , is the total number of the employed workers with academic degree in industrial part of Iran, EINC is the number of the employees in the developed industries in a particular area or city, TEIC is the total number of employees in the same section or city. The results gained by the regressions relation to changes in this index on the primary rate of workers in the mother cities, who were educated for 16 years or more, were computed for 1970s, 1980s, and 1990s. These

  

results show how strong was the influence of the number of the educated people on increasing the skill levels in existing industries. For instance, the primary skills in more specialized industries has been increased more in 1970s. But, according to general relations between primary skills and growing such knowledge, this influence is not significant. There is no relation between the primary skills and willingness toward more specialized industrial parts in 1980s and 1990s.

4.2. Increasing selection among the skilled workers

In the contrary to the correlation between growing percentage of people with academic degree and initial rate of these people, the cities are different due to different skill and education levels of the workers. Despite the separation and differences in the mother cities, based on skill and educational level of their workers, the fact is that skill and knowledge on being employed in industries is distributed inequality in other countries than the mother cities.

In 1976, in average 9.3% of people had academic degree. The most important note was that incompatibility among the mother cities was outstanding. The standard deviation of the population with academic degree was 0.035 in 1986, the average rate of the mother cities with specialists and professional workers increased to 13.6%, and the standard deviation was 0.045. The average increased rate in this period was greater than the increased rate in standard deviation. As a result, the changes in coefficients were under devastating fall. However, there existed a great and obvious differences among the mother cities on the education level in this period. Therefore, the increase rate of academic degree was 5.2% for top 25% and down 75%. In 1996, the average rate of people with academic degree reached over 15.5% and the standard deviation in the mother cities increased to 0.052. In 1996, the average rate of the population with academic degree in the mother cities reached 18.76%, and the standard deviation was over 0.06. In this context, the gap between top 25% and down 75% increase over 7.97. Rise in the standard deviation meant rise in the value of weight of sequence of distribution. 515.5% of the mother cities increased the number of the people with academic degree to 14.11%, and the others increased that to 28.22% till 2006. In 1970s, none of the metropolitan could increase the number of the people with academic degree over 25.6%. To determine the rate of differences and separation among the mother cities, we applied the given standard deviation in this part. The first given criterion in this part is dissimilarity index:

$$(6)\quad \text{Dissimilarity} = \frac{1}{2}\sum_{MSA_s}\left|\frac{Adultsw.BAs_{MSA}}{TotalAdultsw.BAs} - \frac{Adultsw.o.BAs_{MSA}}{TotalAdultsw.o.BAs}\right|$$

The first fraction nominator shows the number of residents in the mother cities, who could get an academic degree, and the second fraction nominator shows the people without any academic degree. The obtained standard can be considered as the rate of people with academic degree, who should be distributed in the mother cities in order to make the share of all those cities the same and equal. Accordingly, the difference in this period has been increased from 0.091 to 0.11.

The second criterion used in this part is isolation index:

$$(7)\quad \text{Isolation} = \sum_{MSAs}\frac{AdultswBAs_{MSA}}{Adults_{MSA}}\frac{Adultsw.BAs_{MAS}}{TotalAdultsw.BAs} - \frac{TotalAdultsw.BAs}{TotalAdults}$$

  

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An International Peer-reviewed Journal
ISSN: 2319–4731 (p); 2319–5037 (e)

The first fraction denominator shows the adult population resident in industrial centers and the last fraction denominator is the total number of adults around the mother cities. In this relation, the first expression shows the average number of adults who live among the average number of people who are resident in the mother cities. The second expression shows the average rate of the adults with academic degree distracted from the total sample. This rate shows the number of people with academic degree among those without academic degree. Unless correct the total increase in the rate of people with academic degree, the isolation index will increase from 10.6% to 23.4% in this period. At the beginning of this period, only 10 people among 116 people had academic degree. 30 years later, this rate increased to 10 out of 79. But, general education had a significant and considerable role in increasing this rate. Hence, to obtain the exact rate of the people who studied 16 years or more in educational centers, this rate should be subtracted from total educated people. Correcting this rate, it is recognized that the isolation index and separation-selecting index had a minor change, i.e. 0.0066 to 0.013.

**Ordering according to skill**

Generally, the employers and investors go to urban areas and invest. As Duranton and Puga (Durantan and Puga, 2000) showed that there is a particular relation between investors' status and activities in the cities. Therefore, the output of the labor force is equal with function and output labor force residence. In this case, $\bar{u}$ is considered for the skilled workers who live in the city can be computed as:

(8) U ($W_i^H$ - $C^H$ ( $N_i^H + N_i^L$ ) , $A_i^H$ )

The following equation can be used to account the efficiency of the unskilled workers: U ($W_i^H - C^H (N_i^H + N_i^L ) , A_i^H$ ).

In these two equations, $W_i^H$ and $W_i^L$ are the skilled workers' wage and the unskilled workers in the city "I" respectively. The variables $A_i^H$ and $A_i^L$ show the local wage in the city, which is particularly able to absorb the skilled and unskilled workers. The expressions $C^L ( N_i^H + N_i^L)$ and $C^H ( N_i^H + N_i^L)$ show the life cost (especially housing) in the city i. the cost is also a component of the total number of the skilled workers $N_i^H$ and unskilled workers $N_i^L$ , which is indicated by N. the considerable theory in this part is that the population growth had different effects on the skilled and unskilled workers. $W_i^H ( A_i^H , C_i^H ( N_i^H + N_i^L )$ and $W_i^L ( A_i^L , C_i^L ( N_i^H + N_i^L ))$ city, to reach the size of N.

The hypothesis considered in this part is two available companies, each employed a particular type of workers and sell the products in specific price. The companies produce the products by special technology.

$\theta_i^j f (Q_j )$ and Q show the number of the employed workers in the companies and f(.) increased constantly and is concave. It is hypothesized that each company was established by the investors who receive specific profit. The main factor preventing rise in the number of such companies is lack of innovative ideas; the ideas that are randomly offered by some people in the population. In this case, entrepreneurs who employ the skilled workers with academic degree are shown with $h_i + \emptyset h_1 N_i^H$ where, $h_i$ is an external constant and $h_1 N^h_i$ shows the number of entrepreneurs in a particular type, equal with the number of the skilled people with academic degree, who live in that given city. It is supposed that the skilled workers create an idea with the probability $h_1$ and the

  

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An International Peer-reviewed Journal
ISSN: 2319–4731 (p); 2319–5037 (e)

possibility to employ new workers, by applying that idea is equal with h1The other implicit hypothesis is that the place has a natural advantage which cause the survival of the company; and the company wouldn't move. In other words, it can be said that the innovative thoughts are welcome and are not provided to the other places. In this context, the investors or entrepreneurs who may establish some low level companies (companies require low level of skill) can be distinguished by $h_i + \emptyset\, h_1 N_i^H$

In this relation, $h_i$ is a constant value that is external. $L_1 N_1^L$ is the number of low level companies established by unprofessional entrepreneurs. In this case, the hypothesis is accepted that the unskilled workers can't create ideas that lead to employing the skilled workers. Finally, $(1-\emptyset) h_1 N_i^H$ Shows the number of professional entrepreneurs who established low level companies and those companies that employed the unskilled or low-skilled workers. Parameter ∅ has a great place in this model, as it shows the number of innovative ideas proposed by experts and professional people and are only applicable in academic and specialized force. The hypothesis that the number of companies is proportional with the number of workers in each skill groups is the central core of this model. To test this hypothesis, the following equations are used:

(9) $$\theta_i^H \int \left( \frac{N_i^H}{\emptyset\, h_1 N_i^H} \right) = w_i^H \left( A_i^H, C^H \left( N_i^H + N_i^L \right) \right)$$

(10) $$\theta_i^L \int \left( \frac{N_i^L}{l_i + (1-\emptyset) h_1 N_i^H + L_1 N_i^L} \right) = W_i^L \left( A_i^L, C^L \left( N_i^H + N_i^L \right) \right)$$

In these equations, there is no common human capital and the only profit for the workers, who lack the life skill, around the skilled workers and experts is external profit. In this case, if h1=0, efficiency of the skilled workers, according to the output model, will be subtractive, but the city as a whole will acquire a constant output from the skilled workers. Accordingly, the following competitive numbers would be obtained:

Suggestion 1: If $\theta_i^L$ increases, the number of the skilled workers in the city will decrease and the number of the unskilled workers will increase. If $\frac{1-\emptyset}{C^{L_1}(N)}$ Is enough high, any increase in $\theta_i^H$ or $A_i^H$ causes rise in the skilled and unskilled people.

If $\frac{1-\emptyset}{C^{L_1}(N)}$ is low, any rise in $\theta_i^H$ or/and $A_i^H$ causes increase in the number of skilled people and decrease in unskilled people in the city. These are the parameters that make the city attractive to the under-skilled force. For instance, $L_1$ or $A_i^L$ causes increase in life cost and the skilled people will leave the city. Rise in $\theta_i^L$ (enjoyment of the under-skilled companies) or $L_1$ (the number of professional companies where absorb unskilled workers) will increase the requests for the unprofessional and under-skilled force. Increase in $A_i^L$ show that the condition is suitable to employ the poor people. In this case, the perk and loans will increase. Although the condition is effective on employing the poor people, it increases the rich willingness to escape from that place more and more. There are some more interesting results in $\theta_i^H$ and $A_i^H$. As increase in the number of skilled people causes employing skilled people more by many companies, it is probable that the factors effective on employing the skilled people will increase the tendency toward employing unskilled people. The influence of skilled people on unskilled people depends completely

  

on $\frac{1-\emptyset}{C^{L,}(N)}$ . In fact, the nominator of this fraction shows the probability of creating innovations by the skilled people, by which there will exist more career opportunities for the unskilled workers. The denominator shows the influence of increasing the skilled people on increasing unskilled people's life cost in the region. When $\frac{1-\emptyset}{C^{L,}(N)}$ is high enough, either because the skillful innovation is applied in a way that results in employing unskilled workers or because $C^{L,}(N)$ is low, it is expected that the skilled and unskilled people live together. Each special feature in the occasion or place (such as simple and easy consumption $A_i^H$ or more skilled workers' proficiency $\theta_i^H$ or increasing the number of companies that employed more skilled workers), is effective on employing unskilled workers; this action will be influential to settle this group with other skilled and specialized labor force.

However, if $\frac{1-\emptyset}{C^{L,}(N)}$ is low, either because the specialized innovation is in a way that result in employing the specialized and professional force only or because $C^{L,}(N)$ may be high, the factors effective on absorbing the skilled workers help excluding unskilled labor force. In this condition, the effect of skilled workers' life cost vanish the suitable condition leading to employ unskilled workers. Furthermore, it is expected, in this condition, that we observe concentration and separation of skilled and unskilled labor force in certain places in the city. In this answer, there are two main reasons for the skilled workers' tendency to make to the cities having suitable condition. First, the innovative ideas developing by the skilled people more. While in the past, the companies established by the skilled people employed some unskilled people too.

The second reason is that it is expected that the changes in residence patterns of the places where the skilled and unskilled workers live have more flexibility in offering housing (Adibi, 2012). When the flexibility in offering housing is enough and $C^{L,}(N)$ is low, the unskilled people tend to move to the cities and live in the crowded areas even if innovation causes employing only few unskilled people, as the life cost is low and bearable in these areas. But when $C^{L,}(N)$ is high, the price of housing is too high and the unskilled workers try to go far away from the places where professional workers live. This is why more skilled workers tend to live close to each other. In fact, the illustrated condition causes offering housing become inflexible in this condition and in a short time, due to some specific functional rule of the earth (for more information see Glaeser, Gyourko and Saks, 2005).

At the end of this part, the effect of $\emptyset$ will be studied on wages. The main assumption is that the rate of population in the cities is constant and unchanged. The described model considers a complete type of career opportunities system in which the shocks on labor force's request have a restricting effect on the nominal wage and as a result, have no influence on the real wage. This condition can be modified through different tastes related to different places, though this condition makes it more complex. To ease the task, we may assume that the population of the city is constant in a short period of time. In this case, this suggestion is assumed as a deficient balance analysis that limits the population movement in relation to exchange freely with regard to changes of this parameter, hence the differences in the life cost function, and are not a reflection of changes in the labor force's requests. To understand it easier, assume that $h_i = L_1 = 0$ ; therefore, we get the second suggestion. Suggestion 2: the difference in the skilled and unskilled workers' wage increases as f increases. If higher skill levels in the city are made due to desirability in difference or high value of $\theta_i H$ , sensitivity of average income to higher rate of the skilled workers in the developed areas increases because of rise in $f$ ; it increases by increasing $\emptyset$ Due to effectiveness of

  

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An International Peer-reviewed Journal
ISSN: 2319–4731 (p); 2319–5037 (e)

constant value of interest range (the rate of profit) and the relation $\theta_i^H > \theta_i^L \times \frac{h_i^2}{L_i^2}$ . If f(Q)= $Q^a$, the differences in logarithms of wage between the skilled and unskilled people are more than the case that $\frac{w^H}{w^L}$ is higher; these are closely related to rise in $\emptyset$ . The following part is analyzed based on suggestion number 2. In this context, the changes in wage will be considered. An exact study of this suggestion shows that this suggestion consists of three components. When $\emptyset$ Increases, more companies employ the skilled workers and as a result, the profit in these companies is more than those where employ unskilled workers. Therefore, the request for the skilled workers increases and they earn much than unskilled workers. This condition has been happening throughout 25 years ago. If it continues constantly in the future, the condition will be suitable to apply the suggestion.
The second component shows that the relation between high skill levels and high income increase when f increases. The main reason is that basically increase in natural output of skills means the relation between skill levels and increasing income. The third component shows that much increase in $\emptyset$ results in greater gaps between high wage of the skilled and unskilled regions. The main reason is that higher $\emptyset$ means that the number of the skilled entrepreneurs in the specialized cities is more and increases the wage in general and the skilled workers' wage in particular. Generally, increase in $\emptyset$ shows a kind of supplementary process. This means that it is more likely that the skilled people employ the other skilled people.

**Ending the regional convergence**

In this part, we will show that convergence and symmetry in the mother cities has ended. The basic regression of this convergence is:

$$\log\left(\frac{MSAIncome_t}{MSAIncome_{t+1}}\right) = \alpha + \beta \times (MSAIncome_{t-1} + Other\ Controls) \quad (11)$$

In some significant researches, such as (Barro and Sala-i-Martin, 1992), it has been emphasized on existing a kind of regional convergence pattern. Studying convergence patterns in 1976, 1986, 1996 by two different income criteria, i.e. average income and annual income and considering the computation of the related regression on the primary income, it is recognized that both types of income have similar patterns. In this context, there is an outstanding fall I convergence in 1976. The coefficient of the primary income has been increased from -0.05 in 1970s to 0.017 in 1990s. In other words, it has been increased from extremely negative to positive. The regression on income shows that convergence in 1970s was completely considerable and the basic coefficient is -0.09. in 1990s, the computed coefficient is positive but is not statistically significant. The changes in the income coefficient are greater than wage. In 1970s, the poorer mother cities earned much more income than the richer ones. In 1990s, development and income in the rich areas were more than the poor areas. This condition can be explained by this main reason that the skilled workers' output has increased and as the concentration of these workers in the mother cities is increased, this process seems natural. In the control convergence regression is studied in order to change the rate of adults with academic education in the mother cities, it is obvious that this control can eliminate all asymmetrical signals. When the wage logarithm is used in the first three regressions, there also can be observed significant decrease in the convergence level through last 30 years. Applying

  

income logarithm in three last regressions, the changes on convergence seem to be milder, and controlling the changes in the rate of population with academic degree can illustrate decrease in regional convergence. It can be claimed that convergence through last 30 years has decreased devastatingly. One of the potential reasons is high income and necessary skills in the places where absorbed more skilled workers increasingly. The reason is that by controlling the changes on skill combination in areas, the convergence can be seen again, even though it seems that there are some changes between 1970s and 1990s'.

**Conclusion**

This paper shows that the gap between the developed areas and underdeveloped areas will be increasing until the concentrating process of the specialized labor force will continue toward the metropolitans; and even the condition may be deteriorated. As studied in this paper, the places enjoying more professional and skillful levels, throughout last 3 years, have absorbed more skilled and professional workers. The correlation between primary rate of the adult population with academic degree in metropolitans, and change in the given variable in 1990s is great. Considerable number of academic educated live in the same areas. However, by continuing this process, it is likely that skill separation-selecting procedure is increasing over time. One of the reasons is that the labor force is requested by the local investors who try to establish companies and factories in the cities where they live. The willingness to settle companies and organizations to employ professional people and experts by the skilled and professional people is the reason why the primary level of skills combination directs the population to move to the mother cities; it is advantageous for the skilled workers. The people who have lived in the mother cities settle some new organizations and employ new skilled workers. In this context, the basic change in the last 30 years has happened is that the more skilled investors created some innovative actions; hence, it led to employing more skilled people. There are enough evidence and documents to prove this process. For instance, the correlation between the managers' skill level and the employed workers in industries has been increased over time. The wage for the skilled people has been increased greatly in comparison with the wage for the unskilled people in the same city. In this context, this paper can be used as predictor. Accordingly, the skill level in each place can be considered as a factor for any rise in demand for the labor force, especially the skilled workers.

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ISSN: 2319–4731 (p); 2319–5037 (e)

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