

THE STATUS OF WOMEN'S EDUCATION AND JOB IN IRAN

Mohammad SADEGH ALIPOUR
Statistical Research and Training Center,
Statistical Center of IRAN

ABSTRACT

According to the significance role of woman in economy as a supplier in labor market, here we study the female education in national economic activities. Based on official statistical report, despite constituting half of the world's population, women's share of the fruits of development has been very meager. This difference is more tangible in developing countries due to the limitation of resources and domination of discriminative ideas.

Based on the results and examination, this research has shown that literacy rate and education can significantly effect on job opportunities for female headed households. In other words, education can increase the probability of women headed households to be employed compared to men. Although women headed households have lower chances to be employed compared to men, if these women have high literacy rate and education, they will have more chances to find jobs than men. Jel: J12, J16 .J21 .R2

Keywords: Female Education, Women Literacy Status, Logistic Models, 2011 Census of Population and Housing.

INTRODUCTION

According to the UN Human Development Report, despite constituting half of the world's population, women's share of the fruits of development has been very meager. This difference is more tangible in the non-industrial and developing countries due to the limitation of resources and domination of discriminative ideas. Under these circumstances, if the division of labor in the household is such that women are mainly responsible for traditional tasks, the issue can be evaluated merely from the point of gender inequalities. But where, in addition to the traditional duties, women assume the role of heading the household and earning the livelihood, the aforesaid inequality besides the imposition of pressure and harsh conditions on women, causes the reduction of the level of life standards for the members of the household as well. This is why the clause 4 of the Article 21 of the Constitution of the Islamic Republic of Iran too emphasizes on the "provision of especial insurance for the widows, the elderly women and the women heading the household". Each Five-Year Development Plan too has emphasized on the same issue.

A gender approach to the developmental planning with the idea of augmenting women's efficiency, necessitates the provision of gender-based data and statistics with regard to various women groupings. The present report, which offers the available statistics about the socio-economic characteristics of female heads of household in comparison to those of men, has been prepared in line with the said approach (Eftekhari, et al 2002).

Women's literacy rate and education and female economic activity are main issues in each economy. In this paper by using the data of the latest census of population and housing in urban and rural areas, we study the education of female in Iran's economy which is based on assessment of their role in economy activities. In fact, this paper intends to answer

that, is there any relationship between education and job opportunities? Regarding that women wage is respectively lower than men wage; the share of value added of women in national economics is less than men. In other words we may state that the low share of women in gross domestic production (GDP) may occur for two reasons. First, lower share of women's employment compare to the total official employees of the country. Second reason is low wage of women compare to men. And also we can add some examples why women activities are underestimated. Production of goods and commodities that are produced in households and consumed by other households but are reflected less in GDP and national accounts because they do not pass through the markets. In addition home productions and services that are produced by households and consumed in the same households but are not considered in national accounts. Examples are production of jam, cookies, pickles which women produce and sell in different ways.

Also the women's housekeeping activities such as child care, patient care, are not considered in national accounts as a result they cause to underestimate the share of women's participation in the developing countries (Avazalipour, *et al* 2009). These activities have a big volume as family production function. Until the 60s, the individuals' consumption behavior model was designed based on commodities that were prepared from the market. In other words, in traditional model, utility is a function of those goods that prepare directly from the market. $U = U(X_1, X_2, \dots, X_n)$ where U is utility function and X_s are the commodities purchased from the market. Becker stated that in fact people and families will never directly consume the goods from the market. They directly consumed them as a compound commodity. Therefore utility function is as follows.

$$U = U(C_1, C_2, \dots, C_n).$$

In fact all of these C_s could be made of combination of several commodities. For example, a food which is cooked at home includes various goods from the market and it is converted to consumable food by consolidating them. In this way, it could be said that compound goods are produced from different goods and it could be written as follows:

$$C_i = C_i(X_1, X_2, \dots, X_n, T_i)$$

Where X is the goods in which provide from the market; and T_i is a time required for producing C_i .

LITERATURE REVIEW

The study on actual and potential role of the women in Iran's economy needs to Understanding the age structure, education status, marital status, and their distribution in economic activities. On the other hand, Awareness of the women situation can help us to better understand the importance of their activities and effective factors of their economic activities. In this regard we can use time series or cross sectional data. So we apply the Household Income and Expenditure Survey in which has included lots of useful variables. In addition the Logistic regression models are mainly applied as a very efficient tool. Becker (1991) and Cherlin (2000) have shown that Changes occurred in the socio-economic status of female labor in the society and it has an effectiveness role in their economies. Yurovich (2010) by using a logistic model is trying to show that how much the tendency of first marriage of young men and women depends on economic situation. He shows that the rate of economic participation of women depends on education. Losindilo *et al* (2010) have examined the relationship between education status of women, religion, and economic participation in Tanzania. They have also applied logistic model and they suggest that there is positive and significant effect between their residencies

situation and the chance of being employed for women. Kavand et al (2011) have applied logistic model and they suggest that there is positive relationship between women's education and economic activities.

Though the rate of women participation in South Africa is yet lower than the men, Yakubu (2010) by using logistic regression model shows that it has considerably increased due to the highly improvement of their socioeconomic characteristics, of which women educational degree plays a critical role in increasing rate of their participation. Economically, Yakubu prefers to introduce it as an increase in human capital of women, playing the main role in employment and increase in the economic activities of women in South Africa.

OBJECTIVES

The main objective of the present research is to study socioeconomic characteristics of the women heads of households in the country. This study relies on the available statistics in order to prepare the necessary statistical base for the protection and consolidation of this group of households, if necessary.

The Status of Female Literacy

The issue of literacy comes to the fore when individual completes his or her sixth year. Despite the fact that due to the decline in the population growth rate since few years ago, the enormosity of primary students has been reduced, and the concentration of the students in the guidance program has declined compared to twenty years ago. The study of the literacy status of population (6-year-old and over), as indicated in the Tables 1, shows that there is a considerable change between two censuses as well as between urban and rural areas. In 2006, 52.8 percent of male in urban areas were literate while the corresponding figure for the rural areas stood at 54.8 percent.

In contrast, in 2011 in both urban and rural areas the literacy rate have decreased. The literacy rate of the female in urban areas has increased from 47.2% to 48.1%. Among the people in rural areas literacy rate of women has increased from 45.2 to 45.7.

Table 1.
The Literacy Status by Sex: (+ 6 Year old)

Literacy status	Total		Male		Female	
	Urban	Rural	Urban	Rural	Urban	Rural
2006	100	100	52.8	54.8	47.2	45.2
2011	100	100	51.9	54.3	48.1	45.7
2006	39096165	14938943	20624831	8183348	18471334	6755595
2011	43047971	14286733	22358196	77522447	20689775	6534286

Source: Statistical Center of Iran, Census of Population and Housing, 2011

The Status of Female Education

In this subsection, the process of change in the ratio of the population with regard to their education will be studied.

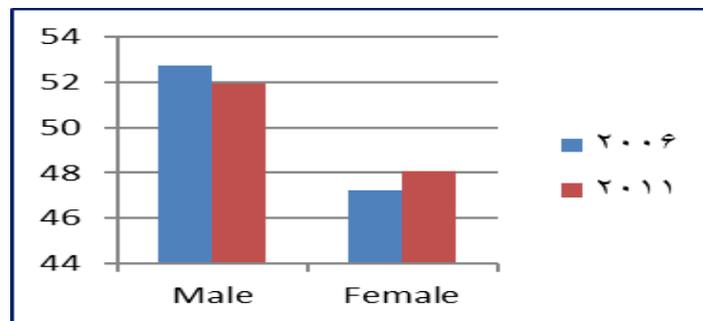


Figure 1.
The literacy Rate in Urban Areas

A study of the ratio education female to the total population of the country shows that the highest rate belonged to the 2011 census (18.4 percent) while the lowest figure belonged to the 1976 census (2.6 percent).

As in Table 1. and Figure 3. have been shown a considerable change in educational level have had happened since 1996.

It is to note that the percentage of female educated is more than male educated as well.

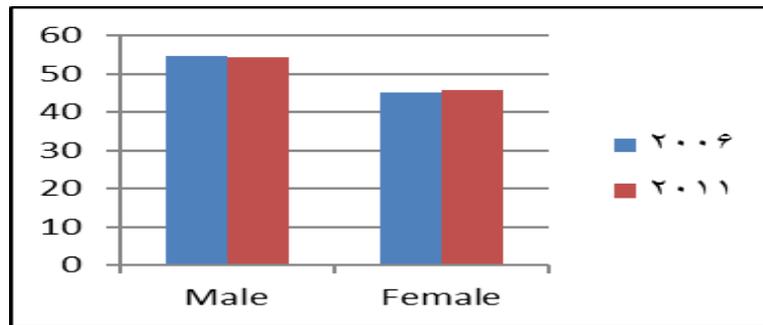


Figure 2.
The literacy Rate in Rural Areas

Table 3
Percentage and Number of higher education of Population by Sex

Year	Male		Female	
	Number	%	Number	%
1976	310638	3.8	122753	2.6
1986	621525	7.1	223436	3.3
1996	1657699	7.4	900895	4.7
2006	3769741	13.1	3116392	12.3
2011	5474683	18.2	5023992	18.4

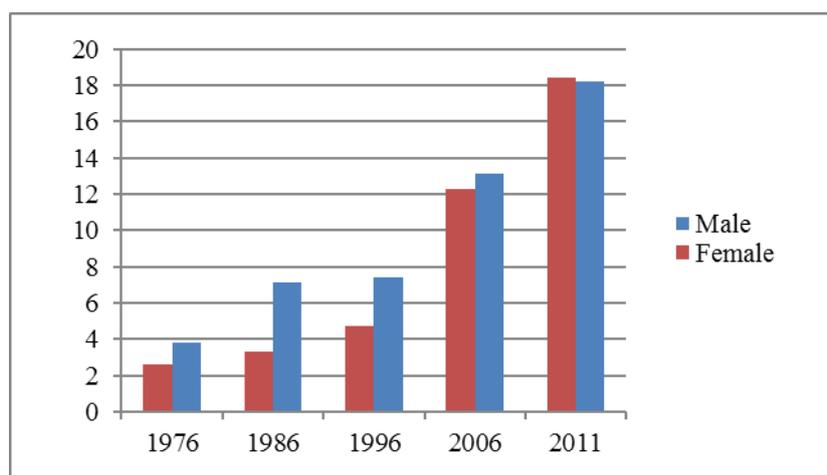


Figure 3
Percentage of Higher Education of Population by Sex
 Source: Statistical Center of Iran, Census of Population and Housing, 2011

METHODOLOGY

In order to understanding the situation of gender literacy and education, this paper has examined the impact of literacy and educational status in Iran's economy.

But the main question here is that, increasing in educational level in female side can increase their job. In fact, is there any positive relationship between education and job finding? So the main objective in this study is to answer this question. For this purpose the Logistic model has been applied.

Farrar and Martha (2001) have reported that emphasis on income from formal sector is not enough and we have to look at women labor in informal sector such as in rural areas, agricultural section, production of goods and services at home and so we need to define new measures. For this purpose we apply the Logistic model by using the Household Income and Expenditure survey in 2006.

In this model dependent variable can only take values of zero or one, and other independent variables can be employment, unemployment, religious travels, literacy and so on(Gujarati, 2004). And also we have to mention when dependent variable only take values at zero or one, we may show that value of dependent variable representing as follows:

$$E(Y | X) = P(Y = 1 | X)$$

Thus, using normal least squares method cannot warranty that estimated value for $Y, (Y \hat{I}X)$, is between zero and one. In addition other problems will take place such as heteroscedasticity, autocorrelation, collinearity. Therefore, for solving these kinds of problems, logistic distribution function will get used .The logistic distribution function is:

$$P_Z(Z < z) = \frac{1}{1+e^{-z}} = \frac{e^z}{1+e^z} \quad (1) P_Z$$

When $Z \rightarrow \infty$, probability will be one and when $Z \rightarrow -\infty$, probability will be zero.

In order to measure the effects of explanatory variables on probability with specific variable the regression function is defined specify as follows:

$$p_i = E(Y = 1 | X_i) = \frac{1}{1+e^{-(\beta_1 + \beta_2 x_i)}} = \frac{e^{(\beta_1 + \beta_2 x_i)}}{1+e^{(\beta_1 + \beta_2 x_i)}} \quad (2) p_i$$

Where p_i represents probability respect to value of Y. and Y is one if Y has specific description for i^{th} household.

x_i Indicates explanatory variable. If numbers of explanatory variables are more than one, we can expand above equation by adding indices of explanatory variables. For explaining above regression result we provide the following equation.

$$1 - p_i = \frac{1}{1 + e^{(\beta_1 + \beta_2 x_i)}}$$

Where, $1 - p_i$ presents probability at not having specific description for i^{th} household.

$$\frac{p_i}{1 - p_i} = e^{(\beta_1 + \beta_2 x_i)}$$

Above ratio, presents the chance ratio. In the other word, this ratio is the chance of i^{th} household for having Y specific description against at not having it. The equation 3 is made by taking natural logarithm from both sides of the above equation.

$$L_i = \ln\left(\frac{p_i}{1 - p_i}\right) = (\beta_1 + \beta_2 x_i) \quad (3)$$

Where β_2 indicates changes in logarithm of chance for i^{th} Household how has Y specific description. If this coefficient is positive we generally can conclude that the i^{th} family has increasable chance to having Y specific description.

RESULTS AND FINDINGS

As it was mentioned in the previous section, by using the logistic model we can show the effect of socio-economic characteristics on employment and other issues. One of the most important characteristics in economic status of Iranian female headed households is to considering the factors affecting on women household employment status. In other words, by studying these factors one can analyze the structure of an economy and understanding about the procedure of attracting the workforce and also get to know the composition of the workforce in the specified economy the effective variables which can effect on employment status of a household are gender. Awareness about the significant role of gender over employment of households may indicate that, for instance, can women headed households have the same opportunity of employment as men headed households have? In addition, Household size, age, education, marital status and their economic status are important which may effect on opportunity of employment. Since it's not possible to access the household's income, we will apply the logarithm of total expenditure of household. Ownership of flat or house and having own car can be used as a measure of households economic abilities. By applying these variables as explanatory variables we can estimate the value of dependent variables in formula 2. In this equation, dependent variable can take one if headed household has job, otherwise it will take zero.

All independent variables that can effect on household's employment as below:

Where: Log (Texp): logarithm of total household expenditure

Sex: household's gender (man=1, woman=0)

Age: Households age

Degree: Education status (diploma and below=0, university degree and above=1)

Marital: Marital status (married=1, single=0)

C-or-M: household owns a motorbike or vehicle = 1, otherwise=0

RESIDENCE: possession of home

Table 4. shows the results of the logistic model for data of household income and expenditure.

Table 4.
The Effective Factors on Employment of Heads of Households

variable	coefficient evaluation	significance level
C	-2.7	0.0
LOG(TEXP)	0.22	0.0
SEX	1.5	0.0
Size	0.06	0.0
RESIDENCE	-0.03	0.6
AGE	0.04	0.01
AGE^2	-0.0004	0.0
DEGREE	0.28	0.3
SEX*DEGREE	-0.61	0.04
SEX*MARRITAL	1.6	0.0
MARRITAL	0.05	0.8
C-or-M	0.02	0.0

Calculated by authors Households the Effective Factors on Employment

Finally the results indicate that the kind of house ownership (Residence) does not affect on opportunity of employment among urban household heads (Avazalipour, et al 2012).

CONCLUSION AND REMARKS

In this paper, the results of examination, has shown that academic education can significantly effect on job opportunities for women headed households. It means that academic education can increase the probability of women headed households to be employed compared to men because sex degree coefficient is negative. As a result, although women headed households have lower chances to be employed compared to men, if these women have academic education, they will have more chances to find jobs than men. Similarly those households' head that has got married compared to those who are single have more opportunities to be employed.

Consequently, since employment is considered the most important factor for reducing poverty and other social disorders, policy makers must be focused to increase facilities of education to their people.

BIODATA and CONTACT ADDRESSES of the AUTHOR



Mohammad SADEGH ALIPOOR, graduated from Ph.D Program in Economics at Pune University of India, is currently the economic deputy in Iran Statistics Center of Iran and assistant professor of Statistics Research and Training Center. He received his master degree in economics from Shahid Beheshti University.

He has authored a articles mostly about economics, and especially family economy. He has conducted researches in subjects such as household-headed women, household's income and expenses, household's consumption patterns, and price indexes.

REFERENCES

- Avazalipour, M. S., Kavand, H. and Zandi, F. (2009). An Analysis of Labor Force Economic Participation of Women in Iran, Based on 1996 and 2006 Censuses, *Journal of Population Association*, Vol, 4, No: 7, Summer.
- Avazalipour, M. S., Zandi, F., Damankeshideh, M., Hakimipour, N., and Faramarzi, A. (2012). The Role of Women in Economic Participation and Employment: A Logistic Model for Iran, *International Journal of Contemporary Mathematical Sciences*, Vol. 6, 2012, No: 11, 545-556.
- Becker G. S. (1979). *The Economic Approach to Human Behavior*, The University of Chicago Press.
- Becker, G.S. (1991). *A Treatise on The Family*. Cambridge, Mass.: Harvard University Press
- Cherlin, A. J. (2000). Toward A New Home Socioeconomics of Union Formation. In: Waite, L. J., Bachrach, C., Hindin, M., Thomson, E. and Thornton, A. (eds.). *The Ties That Bind-Perspectives on Marriage and Cohabitation*. Hawthorne, NY: Aldine De Gruyter, 126-144.
- Eftekhari. N., Avazalipour, M. S., Shams, H., Peyman. H., Ehsani, S., Ghosuri, S. (2002). *Women Heads of households, Socio-Economic characteristics.*, UNFPA and Statistical Center of Iran.
- Farrar and Martha (2001). *Women's Contributions to the Workforce: Are New Measures Needed?*, United States, Department of Agricultural Statistics Service.
- Gujarati, (2004). *Basic Econometrics*, Fourth Edition, The McGraw–Hill Companies.
- Kavand, H., Avazalipour, M.S., Zandi, F. and Damankeshideh, M. (2011). The Role of Gender in Economic Participation and the Key Women Employment Factors: A Case of Iran, *The Journal of Economic Policy*, Vol: 3, No: 6 Yazd.
- Losindilo E., Mussa A. and Akarro R. (2010). "Some Factors That Hinder Women Participation in Social, Political and Economic Activities in Tanzania", *Arts and Social Sciences Journal*, Volume 2010, ASSJ-4.
- Yakubu A. (2010), "Factors Influencing Female Labor Force Participation in South Africa in 2008", *The African Statistical Journal*, Volume 11, November.
- Yurovich L. (2010). "Men's and Women's Economic Activity and First Marriage: Jews in Israel, 1987-1995", *Demographic Research*: Volume 22, Article: 29.

ANNEX

Dependent Variable: ACTIVITY
 Method: ML - Binary Logit (Quadratic hill climbing)
 Date: 02/05/12 Time: 10:21
 Sample: 1 14175
 Included observations: 14175
 Convergence achieved after 6 iterations
 Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.796751	0.700008	-3.995314	0.0001
LOGEXP	0.223366	0.039449	5.662194	0.0000
SEX	1.483505	0.164499	9.018307	0.0000
SIZE	0.056508	0.015244	3.706778	0.0002
RESIDENCE	-0.033989	0.068364	-0.497173	0.6191
AGE	0.042400	0.012925	-3.280390	0.0010
AGE^2	-0.000409	0.000123	-3.315387	0.0009
DEGREE	0.283213	0.293076	0.966347	0.3339
SEX*DEGREE	-0.615457	0.299464	-2.055195	0.0399
SEX*MARITAL	1.648972	0.254211	6.486626	0.0000
MARITAL	0.052505	0.216184	0.242872	0.8081
C_OR_M	0.197015	0.054676	3.603315	0.0003
McFadden R-squared	0.339703		Mean dependent var	0.737566
S.D. dependent var	0.439973		S.E. of regression	0.342881
Akaike info criterion	0.761810		Sum squared resid	1665.110
Schwarz criterion	0.768210		Log likelihood	-5387.331
Hannan-Quinn criter.	0.763939		Deviance	10774.66
Restr. deviance	16317.90		Restr. log likelihood	-8158.950
LR statistic	5543.238		Avg. log likelihood	-0.380059
Prob(LR statistic)	0.000000			
Obs with Dep=0	3720		Total obs	14175
Obs with Dep=1	10455			