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HOW LITERACY AFFECTS UNEMPLOYMENT AMONG DIFFERENT AGE GROUPS IN PALESTINE

Case
Study

Keywords

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JEL Classification

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Abstract

This paper aims to examine how literacy rate affects unemployment among different ages in Palestine. Using labour force surveys and annual reports of Palestinian Central Bureau of Statistics (PCBS, 2000-2015), we analyzed 16 years (2000-2015) regarding unemployment percentage and literacy rates among different ages in both genders in Palestine. Linear regression models were used to show how literacy rate affects unemployment among the various ages. The results showed that literacy rate is significantly correlated with the percentage of unemployment among ages of (15 to 24, 25 to 34, and 35 to 44). Gender is significantly correlated with the percentage of unemployment among the ages of (15 to 24, 25 to 34, and 45 to 54). A positive relationship appears between literacy and unemployment. Females have more unemployment than males among ages of (15 to 24 and 25 to 34). On the other side, females have less unemployment than males in the (35 to 44 and 45 to 54) age categories.

INTRODUCTION

The education is changing the quality of life of every person. Employment mainly depends on education, and people are increasing their knowledge through education to go further in their careers. Establishing programmes that offer the chance to learn theoretical knowledge and practical skills would have a long term positive impact on the principal labour market (Oláh, 2014). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), adult literacy rate is defined as "Percentage of population aged 15 years and over who can both read and write with understanding a short simple statement on his/her everyday life" (UNESCO., n.d.).

It is worth understanding how the literacy among different ages affects on decreasing the unemployment of individuals. By understanding this effect, we will understand the benefits of basic education for individuals to survive unemployment. In Palestine, education among individuals is increasing continuously (Palestinian Central Bureau of Statistics (PCBS), 2016a) with 96.7 % literacy rate (Literacy Rate,(PCBS), 2015) in 2015, but unemployment still exists at 25.9% in 2015 (Palestinian Central Bureau of Statistics (PCBS), 2016b). In this paper, we will discuss how literacy among different ages can affect unemployment among different ages in Palestine.

Many studies developed in connection with education and unemployment and showed how education is most beneficial for individuals. For example, Rivera-Batiz (1992) found that literacy can have an impact on increasing the probability for a person to be employed. The unemployment can go down as literacy grows (Rahman, 2013).

Ionescu et al. (2013) mentioned that, if people get a better education, the less unemployment they will face. Magnussen (1979) mentioned that the more you increase your level of education, the less unemployment you encounter, which can be supported by (Cairo and Cajner, 2014). Biagi and Lucifora (2008) found that the relationship is negative between individuals who finished more than their mandatory education and unemployment rate. The employment opportunities for individuals increase as the level of education increases (Diaconu, 2014; Ionescu, 2012). Diawara and Mughal (2011) concluded that the people who have secondary and university education have a higher likelihood of securing a job in public sector and lower likelihood in case of self-employment. Holding an academic degree can make the probability of unemployment less (Núñez and Livanos, 2010), which is in line with Wolbers

(2000) and Riddell and Song (2011). Mirica (2014) mentioned that continuing education can help decrease unemployment which is in line with Bicakova (2010) claim about the relationship between unemployment and education. The growing in education level before university education significantly reduces the unemployment (Nickell, 1979). To summarize, most of the studies mentioned that education is negatively connected with unemployment, and literacy can be the basis of education, therefore, we will test education's connection to unemployment with the literacy rate of individuals. Our hypothesis will be as the following:

H1: literacy rate is negatively related to the percentage of unemployment among age groups.

H2: literacy rate is positively related to the percentage of unemployment among age groups.

METHOD

Depending on labour force surveys and annual reports of the Palestinian Central Bureau of Statistics (PCBS, 2000-2015), we will analyze 16 years (2000-2015) regarding unemployment percentage among different ages in both genders in Palestine. We will use a linear regression model to understand how the literacy among different ages can affect unemployment among different ages in both genders. The independent variables are gender and literacy rate among age groups of (15 to 24, 25 to 34, 35 to 44, and 45 to 54) and the dependent variables are the percentage of unemployment among age groups of (15 to 24, 25 to 34, 35 to 44, and 45 to 54). We will use the natural logarithms for both percentages (unemployment % and literacy %) to avoid collegiality (autocorrelations) before running the models. We will test each of dependent variables with the independent variables separately. The age divisions are as what Palestinian Central Bureau of Statistics (PCBS) has used in their labour force surveys and annual reports.

RESULTS

Figure 1 show that the two genders unemployment rates were close to each other in 2000, but in 2001, the gap started to increase by more than 10% compared to a previous year. In 2000, males' unemployment rate was 14.6% compared to 12.4% of females' unemployment rate and both sexes were 14.3%. In 2001, males' unemployment rate increased to 27.1% and females' unemployment rate 13.8%. Females' unemployment rate increase year by year to reach 39.2% in 2015 compared to only 22.5 % of males unemployment rate in 2015. The difference of males' unemployment rate

between 2000 and 2015 is 7.9%, but in the case of females, it is 26.8% and for both sexes is 11.6%.

Table 1 shows the percentage of unemployment and rate of literacy among different age group for both genders in Palestine between 2000 and 2015. In 2000, percentage of unemployment among males aged between 15 and 24 years old was 19.6%. On the other hand, the percentage of unemployment among males of 25 to 34 years old with unemployment percentage of 14.3% in 2000 compared to 12% of males between 35 to 44 years old and 10.5% of males aged between 45 and 54 years old. In the period of 16 years (2000 to 2015), the percentage of unemployment among males aged between 15 and 24 years of age increased to 36.4% in 2015. The percentage of unemployment among males of 25 to 34 years old increased to 23.1% comparing to 13% of males between 35 to 44 years old and increase to 13.6% of males aged between 45 and 54 years old during the same period (Table 1).

In 2000, the percentage of unemployment among females aged between 15 to 24 years old was 22.9%. The Percentage of unemployment among females of 25 and 34 years old was 17.1% in 2000 compared to 6.2% of females between 35 to 44 years old and 2.4% of females aged between 45 and 54 years old. In the period of 16 years (2000 to 2015), unemployment percentage among females aged between 15 to 24 years old increased to 60.8%. Unemployment percentage among females of 25 and 34 years old increased to 51.6% comparing to 19.3% of females between 35 to 44 years old and to 9.2% of females aged between 45 and 54 years old during the same period (Table 1).

Among ages of 15 to 24, the literacy rate of males was 98.45% compared to 98.9% for females in 2000. In 2015, the literacy rate of males reached 99.45 % and 99.25 for females for the same age group (Table 1). In the case of ages of 25 to 34, the literacy rate of males was 98.3% and 96.7% for females in 2000 and it increased to 99% for males and 99.2% for females in 2015 (Table 1). On another hand, the literacy rate among ages of 35 to 44 was 97% for males and 90.3% females in 2000 (Table 1). In 2015, literacy rate increased to 99% in case of males and 98.6% in case of females for the same age group (Table 1). Among ages of 45 to 54, the literacy rate of males was 95.7% and 70% for females in 2000, and it went up to 96 % for males and 80.9% for females in 2015 (Table 1).

Using a linear regression model, the independent variables are gender and literacy rate among ages groups of (15 to 24, 25 to 34, 35 to 44, 45 to 54) and the dependent variables are the percentage of unemployment among ages groups of (15 to 24, 25 to 34, 35 to 44, 45 to 54). We used the natural logarithms for both percentages (unemployment % and literacy %) to avoid collegiality (autocorrelations) before running the models.

Model I

Dependent variable: the percentage of unemployment among ages of 15 to 24 .

Independent variables: gender and literacy rate among ages of 15 to 24.

In this model, we found that gender and literacy rate among ages of 15 to 24 is significantly correlated with the percentage of unemployment among age of 15 to 24. If there is one unit increase in the percentage of literacy among ages of 15 to 24, it will increase the percentage of unemployment among ages of 15 to 24. It appears that females have more unemployment than males in this age category (Table 2).

Model II

Dependent variable: the percentage of unemployment among ages of 25 to 34.

Independent variables: gender and literacy rate among ages of 25 to 34.

In this model, we found that gender and literacy rate among ages of 25 to 34 is significantly correlated with the percentage of unemployment among age of 25 to 34. If there is one unit increase in the percentage of literacy among ages of 25 to 34, it will increase the percentage of unemployment among ages of 25 to 34. It appears that females have more unemployment than males in this age category (Table 3).

Model III

Dependent variable: the percentage of unemployment among ages of 35 to 44.

Independent variables: gender and literacy rate among ages of 35 to 44.

In this model, we found that literacy rate among ages of 35 to 44 is significantly correlated with the percentage of unemployment among age of 35 to 44. If there is one unit increase in the percentage of literacy among ages of 35 to 44, it will increase the percentage of unemployment among ages of 35 to 44. It appears that females have less unemployment than males in this age category (Table 4).

Model IV

Dependent variable: the percentage of unemployment among ages of 45 to 54.

Independent variables: gender and literacy rate among ages of 45 to 54.

In this model, we found that gender is significantly correlated with the percentage of unemployment individuals among ages of 45 to 54. It appears that females have less unemployment than males in this age category (Table 5).

DISCUSSION

We analyzed 16 years (2000-2015) to understand how the literacy among different age groups can affect unemployment among different age groups. This study is one of the valuable studies to examine how literacy can have an impact on decreasing unemployment. The results showed that literacy rate is significantly correlated with the percentage of unemployment among ages of (15 to 24, 25 to 34, and 35 to 44). Gender is significantly correlated with the percentage of unemployment among ages of (15 to 24, 25 to 34, and 45 to 54). The literacy rate is positively related to the percentage of unemployment among age groups of (15 to 24, 25 to 34, and 35 to 44). It appears that females have more unemployment than males among age groups of (15 to 24 and 25 to 34). On the other hand, females have less unemployment than males in the age categories (35 to 44 and 45 to 54).

We can reject the first hypothesis (H1) for the cases of (15 to 24, 25 to 34, and 35 to 44) age groups. The second hypothesis (H2) is accepted among (15 to 24, 25 to 34, and 35 to 44) age groups. The results that we got among ages (15 to 24, 25 to 34, and 35 to 44) are contrary to Rivera-Batiz (1992) and Rahman (2013) findings. In the case of gender, females have more unemployment than males among age groups (15 to 24 and 25 to 34) which may be supported by Azmat et al. (2006). On other hand, females have less unemployment than males (35 to 44 and 45 to 54) in age category which may be supported by Morley (1922). We think that there is no significant relationship among ages of 45 to 54. This is not because the literacy rate has not affect on the unemployment, but maybe other factors affecting this age group between 2000 and 2015. On another side, Literacy rate is positively related to percentage of unemployment among age groups among age of (15 to 24, 25 to 34, and 35 to 44). This could be due to the more graduates in these ages compared to limited labour market absorption, wherein the graduates numbers increased three times between 2000 and 2015 (PCBS, 2016a). In these age groups (15 to 24, 25 to 34, and 35 to 44) interval, more pressure was on the economy and more graduates were struggling to get a job. Unemployment rose especially in the south part (Gaza Strip) with an unemployment rate of 41%, compared to another part of Palestine (West Bank) which has an unemployment rate of 17.3% in 2015(PCBS, 2016b). In addition to that,

maybe the low wages offer by the private sectors especially after public sector stop hiring in Gaza Strip since 2006. These individuals were not motivated by this offer and prefer to stay unemployed, particularly if they are highly educated, and this can be supported by Iqbal and Khaleek (2013). The limitation of this study is not only genders and Literacy rate can affect unemployment, but other factors can affect on unemployment as well.

CONCLUSIONS

We analyzed 16 years (2000-2015) regarding the unemployment percentage among different ages in both genders in Palestine. We used linear regression models to understand how the literacy among different ages can affect unemployment among different ages in both genders. The independent variables are gender and literacy rate among age groups of (15 to 24, 25 to 34, 35 to 44, 45 to 54) and the dependent variable is the percentage of unemployment among ages groups (15 to 24, 25 to 34, 35 to 44, 45 to 54). We found that literacy rate is significantly correlated with the percentage of unemployment among the ages of (15 to 24, 25 to 34, and 35 to 44). Gender is significantly correlated with the percentage of unemployment among ages of (15 to 24, 25 to 34, and 45 to 54). We found that females have more unemployment than males among age groups (15 to 24 and 25 to 34). On other hand, females have less unemployment than males in (35 to 44 and 45 to 54) age groups. To conclude, literacy rate is positively related to percentage of unemployment among (15 to 24, 25 to 34, and 35 to 44) age groups, but this does not mean that literacy has no effect on unemployment, but rather that unemployment age groups are affected by other factors, which can be a good direction for future research.

Our study showed how it is important for the government of Palestine to play its vital role to offer more jobs to decrease the pressure on graduate's unemployment among individuals of age groups (15 to 24, 25 to 34, and 35 to 44). On another hand, more jobs are needed to be offered by the government of Palestine for females to decrease their unemployment.

The future research should include more factors related to unemployment in order to discover the causes of unemployment in Palestine.

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ANNEXES

Tables

Table No.1:
Percentage of unemployment and literacy rate among different age groups

Year	Age groups															
	15-24				25-34				35-44				45-54			
	% of unemployment		% of literacy		% of unemployment		% of literacy		% of unemployment		% of literacy		% of unemployment		% of literacy	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2000	19.6	22.9	98.45	98.9	14.3	17.1	98.3	96.7	12	6.2	97	90.3	10.5	2.4	95.7	70
2001	36.2	30.7	99	98.7	26.4	15.4	98.8	96.9	24.7	7.5	98	91.9	21.3	3.7	96.3	72.6
2002	43.4	36.7	99.1	98.6	33.3	18	98.7	97.6	30.9	9	98.4	93	26.7	5.5	96.8	77
2003	38.3	39.1	98.95	98.75	25.1	19.4	98.9	97.8	23.6	10.8	98.5	93.4	21.3	6.5	87.7	52.5
2004	38.9	44.8	99.25	98.85	26.1	20.6	99.1	98.3	24.4	11.5	98.7	95	25.4	5	88	53.7
2005	34.8	46.1	99.45	99.05	21.3	25.5	99.2	98.4	19.7	13.2	98.9	95.1	21.9	4.2	88.5	57.2
2006	34.4	43.2	99.2	99.35	22.9	23.1	99.1	98.3	20.1	12.2	99	95.6	21.5	5.2	90.2	60.4
2007	34	42.5	99.15	99.05	19.8	22.1	99	98.7	17.4	10.3	99.1	96.2	18.9	4.5	90.3	63.2
2008	38.8	47.3	99.25	99.1	25.1	27.2	99.2	98.9	21.3	11	99.2	96.1	20.8	6.1	89.3	65.3
2009	37.2	46.9	99.2	99.45	22.7	33.4	99.2	99.1	18.1	11.6	99.2	96.8	19.1	5.7	91.2	67.3
2010	36.8	49.6	99.2	99.25	21.7	34	99	99.2	15.5	13.2	99	97.1	19	3.5	92.2	69.7
2011	32.1	53.5	99.25	99.35	17.5	37	98.9	99.1	12.2	11.1	98.9	97.6	14.9	4.2	93.5	71.4
2012	34.5	62.2	99.3	99.25	19.2	43.3	99.4	99.1	12	12.8	99	98.5	14.9	6	94.3	75.3
2013	36.9	64.7	99.4	99.3	18.1	48	99.2	99.1	11.9	13.1	99.2	97.9	13.6	5.3	95.2	78.2
2014	39.9	62.8	99.4	99.3	23	53	99.2	99	13.9	18.2	99.3	98	16.4	9.2	95.3	79.5
2015	36.4	60.8	99.45	99.25	23.1	51.6	99	99.2	13	19.3	99	98.6	13.6	9.2	96	80.9

Source: author development depends on Labour Force Surveys and Annual Reports: (2005-2015) of
Palestinian Central Bureau of Statistics (PCBS)

and

PCBS Data that available at http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2016-11E1.htm

Table No.2:
The results of model I

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-273.531	57.086		-4.792	.000
	gender	.312	.063	.606	4.967	.000
	literacy rate	60.277	12.418	.592	4.854	.000

a. Dependent Variable: % of unemployment among age group of 15 to 24.

Note: significant level are reported with p- values and R square of this model is (R square= 0.583)

Source: author development depends on Labour Force Surveys and Annual Reports: (2005-2015) of
Palestinian Central Bureau of Statistics (PCBS)

and

PCBS Data that available at http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2016-11E1.htm

Table No.3:
The results of model II

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-176.541	29.395		-6.006	.000
	gender	.464	.085	.692	5.484	.000
	literacy rate	39.092	6.397	.771	6.111	.000

a. Dependent Variable: % of unemployment among age group of 25 to 34.

Note: significant level are reported with p- values and R square of this model is strong (R square= 0.621)

Source: author development depends on Labour Force Surveys and Annual Reports: (2005-2015) of
Palestinian Central Bureau of Statistics (PCBS)

and

PCBS Data that available at http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2016-11E1.htm

Table No.4:
The results of model III

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-36.496	11.242		-3.246	.003
	gender	-.137	.119	-.194	-1.155	.257
	literacy rate	8.568	2.448	.589	3.500	.002

a. Dependent Variable: % of unemployment among age group of 35 to 44.

Note: significant level are reported with p- values and R square of this model is (R square= 0.536)

Source: author development depends on Labour Force Surveys and Annual Reports: (2005-2015) of
Palestinian Central Bureau of Statistics (PCBS)

and

PCBS Data that available at http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2016-11E1.htm

Table No.5:
The results of model IV

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.826	2.512		.727	.473
	gender	-1.197	.203	-.857	-5.901	.000
	literacy rate	.238	.555	.062	.429	.671

a. Dependent Variable: % of unemployment among age group of 45 to 54.

Note: significant level are reported with p- values and R square of this model is strong enough (R square= 0.829)

Source: author development depends on Labour Force Surveys and Annual Reports: (2005-2015) of
Palestinian Central Bureau of Statistics (PCBS)

and

PCBS Data that available at http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2016-11E1.htm

Figures

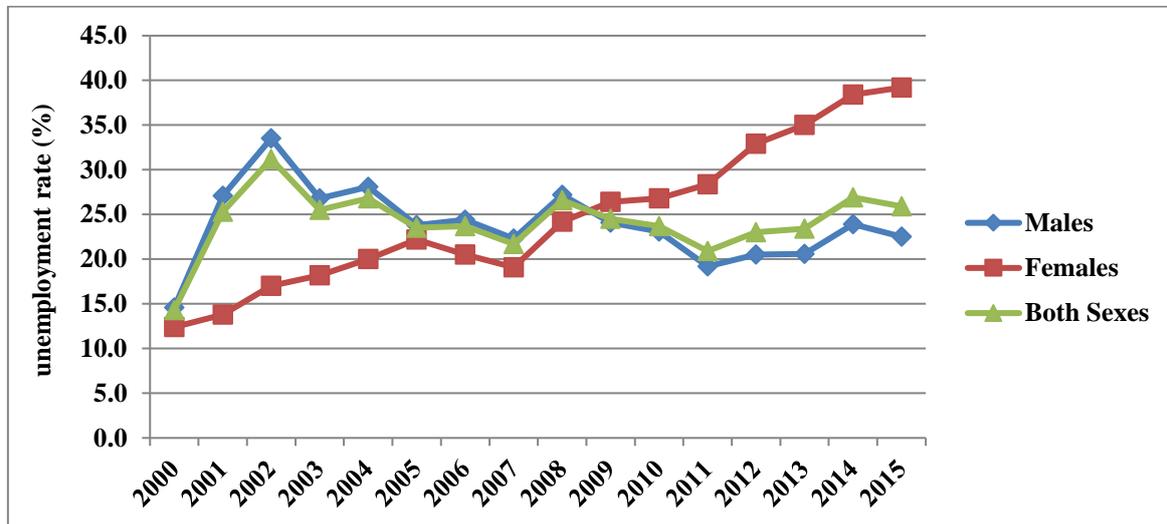


Figure No.1: Unemployment rate(%) among genders in Palestine

Source: author development depends on Labour Force Survey, Annual Report: (2015) of Palestinian Central Bureau of Statistics (PCBS)