

Job Search Propensity of Unemployed Women in an Era of Transition: A Case Study of Egypt

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Abstract—The present study evaluates changes in unemployed women's job search propensity (1998-2006), to examine the effect of transition towards a market-oriented economy away from the public sector employment guarantee, on their propensity to search for jobs. The study examines determinants of job search propensity of unemployed women in Egypt, focusing on young unemployed women. The results point out that women have less job search propensity than men. The gender gap is wider excluding registration with public employment offices from job search methods used. Females are still mainly dependent on the government to find a job. Analyzing determinants of women's job search propensity reveals significant effect of personal, household characteristics and labor market conditions. There is an inverse U-shaped relation between age and female's job search propensity. Education and previous work experience positively affect women' job search. Women living in households with high dependency ratio and those living in areas with high unemployment rates have higher job search propensity. Young women who constitute the vast majority of unemployed women in Egypt are found to be the least active in job search. Examining determinants of young women's job search propensity, the results show that excluding registering with public employment offices from search methods used, education does not have a significant effect on young women's job search propensity, which is an important alarming sign. Household characteristics have similar effects on both all unemployed and young unemployed women, except for marital status. Improving job quality in the private sector and providing institutional support to women within their job search is needed to increase women's job search propensity.

Index Terms—Egypt, job search, labor economics, women.

I. INTRODUCTION

The transition to a market-oriented economy has significantly affected the Egyptian labor market. Women are affected more negatively than men by this transition as they used to depend mainly on the public sector employment guarantee. The unemployment rate for women is 2.5 times the unemployment rate of men. Women are more likely to suffer unemployment [1]. Moreover, women are less likely to escape vulnerable employment [2]. This leads to a decline in the labor force participation rate among educated females [3].

Manuscript received October 21, 2011; revised November 21, 2011.

Thanks are due to conference participants at the 2011 International Conference on Business and Economics Research (ICBER 2011) in Cairo, Egypt. This work was carried out with the aid of the grant from the International Development Research Center, Ottawa, Canada, to the Population Council's WANA Regional Office in Cairo.

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It is therefore important to raise job search propensity of women if unemployment in Egypt is not to become more concentrated among women.

However, there is insufficient empirical information on job search behavior in Egypt. Different studies of job search have emerged in the last two decades. The majority of these studies analyzed job search behavior in developed countries [4]-[8]. Fewer studies analyzed job search behavior in developing countries and in economies in transition [9]-[13].

Nevertheless, there is little work in the Egyptian literature that explicitly analyzes job search behavior. Wahba and Zenou [14] study the impact of the size and the quality of social networks on the probability to find a job in Egypt using the 1998 Labor Market Survey. This study responds to the gap in the empirical literature with respect to the in-depth study of women's job search behavior in Egypt by analyzing changes in women's job search propensity during 1998-2006; an important era of transition in the Egyptian labor market and examine determinants of women's job search propensity in Egypt, focusing on young unemployed women.

The study has four main objectives. The first is to evaluate women job search propensity in Egypt, and compare it with men search propensity. The second is to evaluate changes in women search propensity between 1998 and 2006. Third, the study examines determinants of women job search propensity; so as to identify main factors affecting women job search propensity in Egypt. Finally, the study examines determinants of job search propensity of young women; the most vulnerable group in the Egyptian labor market.

The paper is organized as follows: Section 1 is the introduction. Section 2 provides literature review. Section 3 describes data. Section 4 traces change in women search propensity between 1998 and 2006 and differences in search propensity among women from different socioeconomic groups are analyzed. In section 5 determinants of women's search propensity are examined. Section 6 concludes.

II. LITERATURE REVIEW

Labor economics place great emphasis on job search as a vital activity. The main purpose of this activity is to obtain employment whereas information about employment opportunities is imperfect and costly to acquire [15]-[16]. The first job search decision is whether or not to search at all; that is the job search propensity [13].

Despite the significant impact of job search on job seekers' labor market outcomes, it was found that apart from a number of rather descriptive analyses of job seekers' use of different channels of search, relatively few empirical studies attempt to explain differences in individuals' search effort; i.e. what are

the main factors determining job search?. Some notable exceptions are Barron *et al.* [17], Chirinko [18], Holzer [4], Lindeboom *et al.* [8], Eriksson *et al.* [19]. Few studies were conducted to analyze main determinants of job search behavior in developing countries, none in Egypt.

The main determinants of job search behavior may be classified in three main groups; personal characteristics, household characteristics and labor market conditions.

A. Personal Characteristics

The main personal characteristics that were found to have significant impact on job search behavior include age, education, unemployment duration, and previous work experience.

The young are usually more active in job search. The study of Eriksson *et al.* [19] shows that there is evidence that elderly workers are less likely to search. Both theoretical and empirical literature emphasizes the positive significant effect of education on job search. Theory hypothesizes that the higher the educational attainment is, the higher the individual's expected lifetime earnings and thus the higher the motivation to search for a job [13], [15], [20].

The evidence on the effect of unemployment duration on job search behavior is mixed [11], [16], [19], [21]. The effect of unemployment duration was found to differ from one labor market to another. It may have a negative effect, leading the unemployed job seekers to decrease their search effort because of discouragement. In contrast, the longer unemployment duration of job seekers may result in more search effort if the job seekers rely on receiving unemployment benefits for which his/her eligibility ends after a certain period of time.

B. Household Characteristics

Household economic conditions affect job search. The lower household income implies more pressures on the unemployed to be more active in job search. In contrast, individuals from high income households have less motivation to search for work. Searching for employment requires that the expected utility of searching for employment be higher than the utility of leisure, and since leisure is a normal good and job search is a time consuming activity, wealthy people are less likely to participate to the labor market. Job seekers are those, among the non-working individuals, with a lower value of leisure [22].

Bigger households and a large number of children imply a high dependency ratio and thus put more pressure to search for work. However, the effect of the presence of children has been found to differ significantly between men and women [11]. However, some empirical studies have shown that having young children is associated with a lower probability that the person searches at all [19].

Both search theory and empirical literature suggest that urban residents are more likely to search more than rural residents. This difference reflects differences in both job search costs and benefits. On one hand, job search is more likely to pay off in urban areas, as there are more developed labor markets in which it is more likely that there are a lot of good high return jobs that are worth searching for. On the other hand, costs of search are lower in urban labor markets

due to the high density of employers and lower transportation costs [13], [23]-[24].

C. Labor Market Conditions

Job search propensity has been found to be inversely related to the unemployment rate. It is lower in labor markets with very high unemployment rate and few job opportunities available which discourage the unemployed. In contrast, it increases in labor markets where job competition declines and the probability of receiving a job offer rises as job search tends in this case to pay off [12], [16], [25]. However, one empirical study in Turkey found that increases in unemployment rate increase the job search [23].

III. DATA

The empirical analysis is based on two data sets; the Egypt Labor Market Survey of 1998 (ELMS 98) and the Egypt Labor Market Panel Survey of 2006 (ELMPS 06). Both the ELMS 98 and the ELMPS 06 are nationally representative household surveys. They were carried out by the Economic Research Forum (ERF) in cooperation with the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS).

The questionnaires for the two surveys were designed to ensure comparability of the data over time. The two surveys collected information on individual characteristics, employment characteristics, unemployment and mobility. Regarding job search behavior, the job search questions applied to all unemployed individuals whether they have worked before or not.

IV. WOMEN JOB SEARCH PROPENSITY IN EGYPT

Following job search literature (see for example: Weber and Mahringer [7], Eriksson *et al.* [19], and Boheim and Taylor [26].), job search propensity (P) is measured as the percentage of the unemployed who did a job search.

It is measured as follows:

$$P = SU / U \quad (1)$$

where: SU and U denote respectively, the unemployed who did a job search and the unemployed.

A. Job Search Propensity (1998-2006)

TABLE I reports job search propensity for both males and females.

	1998	2006	2006/1998
Males	0.8186	0.8858	1.08
Females	0.8341	0.8341	0
Male/female relative gap	0.98	1.06	(+) reversed
Total	0.8269	0.8549	1.03

* Differences between males and females, and also between 1998 and 2006 are statistically significant $p < 0.01$, except for the difference between female job search propensity in 1998 and 2006 ($p = 0.986$).

The data illustrate job search propensity, taking into

consideration registering in government office. If the unemployed worker registers only in a government employment office, he/she is still considered searching for a job. Unemployed males are more active than females in job search. Males' job search propensity is significantly higher than females' job search propensity in 2006 in spite of the fact that females' job search propensity was higher than males' in 1998. While males' job search propensity has tended to increase, females' search propensity remained the same.

TABLE II reports job search propensity for both males and females, excluding those who depend only in their job search on registering with public employment offices from job searchers. Data reveal that females are far less active in job search if registering in government office is excluded from job search methods used. Between 1998 and 2006, job search propensity excluding registering in government office tended to increase. Comparing with the gender gap in search propensity considering registering in government office (TABLE I), the gender gap in search propensity is wider.

TABLE II: JOB SEARCH PROPENSITY (P₂) - 1998-2006

	1998	2006	2006/ 1998
Males	0.797	0.854	1.07
Females	0.744	0.757	1.02
Male/female relative gap	1.07	1.13	(+)
Total 15+	0.769	0.7965	1.04

* Differences between males and females, and also between 1998 and 2006 are statistically significant p<0.01.

B. Differences in Women's Job Search Propensity

TABLE III: PERSONAL CHARACTERISTICS AND WOMEN'S JOB SEARCH PROPENSITY (P₁)

A- AGE, EDUCATION AND UNEMPLOYMENT DURATION

Age Brackets	P	Educational Level	p	Unemployment Duration	P
12-14	0.0	No School Certificate	0.34	1	0.68
15-19	0.69	Basic Education	0.61	2	0.70
20-29	0.85	Secondary Education	0.85	3	0.85
30-39	0.88	Post Secondary Education and Above	0.84	4	0.95
40-49	0.76			5	0.89
50-59	0.00				

B- Previous Work Experience

Working Before	P	Length of Work Experience	p	Formal/Informal Work	P
Worked before	0.851	1	0.871	With Contract	0.75
		2	0.753		
		3	0.735		
Did not work before	0.836	4	0.445	Without Contract	0.85
		5	0.000		

* Differences are statistically significant p<0.01.

The main socioeconomic characteristics that affect job

search following the insights provided by recent job search empirical literature as previously mentioned may be divided into three main groups:

First: personal characteristics that affect job search incentive include age, education, unemployment duration and previous work experience.

There is an inverse-U shaped relation between age and female's job search propensity (Fig. 1). Up till the beginning of the forties, old aged female unemployed job searchers are more active. After that, females become less active as they get older.

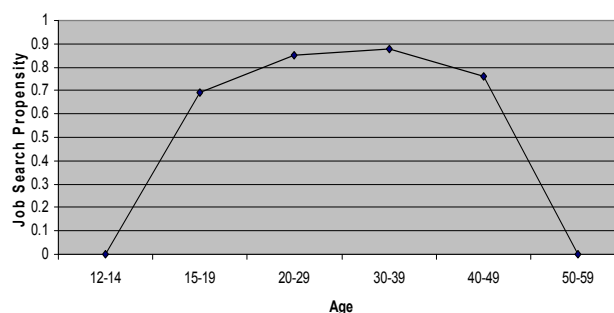


Fig. 1. Age and women's job search propensity.

Higher educated females have higher job search propensity than lower educated females. The first group has higher incentive to search for work; they have better opportunities in the labor market, thus job search is expected to pay them off more than lower educated workers. It is estimated using the Egypt Labor Market Panel Survey 2006 that earnings of females (15+) with post secondary education and above are 3.5, 28.2, 68.4 times higher than earnings of females with secondary education, basic education and no school certificate respectively.

The unemployed were classified in five quintiles according to unemployment duration. The unemployed in the first quintile have been unemployed for ten months or less, while those in the fifth quintile have been unemployed for more than 96 months (8 years). Women who are unemployed for longer periods have higher job search propensity.

Females with previous working experience have higher job search propensity. Concerning length of working experience, an index is developed to measure length of working experience = 2006-year of entering the labor market. Depending on this measure, females were grouped in 5 quintiles. The length of experience is less than 7 years for first quintile; it ranges from 8-13 years for second quintile; 14-22 years for third quintile; 23-36 years for fourth quintile and 37+ years for fifth quintile. The higher the length of work experience is, the lower the job search propensity. Those with longer work experience are usually older, and as previously mentioned, older females have lower job search propensity. Those who previously were working informally are more active in job search than those who were previously working formally. The first group is usually poorer and they are not supported by the social security system.

Household Characteristics: Household characteristics that affect job search propensity include household economic conditions; dependency ratio; marital status; and presence of

children. The wealth index is a composite index constructed of several indicators using factor analysis. It measures the economic level of the household. Those surveyed were grouped into five quintiles according to the wealth index. It is found that contrary to expectations, the higher the household economic level, the higher the job search propensity is. Females from middle class and from relatively wealthy households have higher career aspirations and are usually higher educated while females from poor households are more likely to be less educated and hence have less incentive to search for jobs and are less informed about search methods.

TABLE IV: HOUSEHOLD CHARACTERISTICS AND WOMEN'S JOB SEARCH PROPENSITY (P₁)

Wealth Quintiles	P	Dependency Ratio	P	Presence of Children	P	Marital Status and Children	P
1	0.72					Not married, no children	0.82
2	0.77	High Dependency ratio	0.86	Do not have children (in HH)	0.88	Married, no children	0.89
3	0.85					Not married, with children	0.95
4	0.88	Low Dependency Ratio	0.79	Having Children (in HH)	0.85	Married with children	0.84
5	0.86						

* Differences are statistically significant p<0.01.

Households surveyed were divided into two main groups according to dependency ratio.

The first group has a dependency ratio greater than the average dependency ratio of all households surveyed; the second has a dependency ratio lower than the average dependency ratio. Females living in households where the dependency ratio is higher have higher job search propensity as high dependency ratio puts more pressure to search for work.

Women with children are generally less active in job search. Classifying women in four groups according to both marital status and presence of children in the household; it is found that women who are not married and have children have the highest job search propensity, followed by married women with no children.

The first group needs to work to support their children while the second has no children to take care for and have enough time to search for work.

The other two groups are less active in job search. Married women with children have other responsibilities which are time consuming and they traditionally expect their husbands to work to support their households; the other group is those unmarried with no children; they are usually supported by their families.

Labor Market Conditions: Women living in areas where unemployment rate is higher than the national average have higher job search propensity than those living in areas, where

unemployment rate is lower than the national average.

Unemployment pressures make the unemployed more active in job search. Regions with highest unemployment rate and female unemployment rate; Alex and Suez Canal, Urban Lower Egypt in urban areas, Rural Lower Egypt in rural areas¹, have the highest job search propensity.

TABLE V: LABOR MARKET CONDITIONS AND WOMEN'S JOB SEARCH PROPENSITY (P₁)

Region	Greater Cairo	Alex and Suez Canal	Urban Lower Egypt	Urban Upper Egypt	Rural Lower Egypt	Rural Upper Egypt
p	0.75	0.99	0.88	0.75	0.88	0.73

* Differences are statistically significant p<0.01.

V. DETERMINANTS OF WOMEN'S JOB SEARCH PROPENSITY

A. Economic Model to Estimate Determinants of Women's Job Search Propensity

Because As previously mentioned, relatively few empirical studies attempted to analyze main determinants of job search. Few studies were conducted to analyze these determinants in developing countries, none in Egypt. The main determinants of job search are classified in three main groups; personal characteristics, household characteristics, and labor market conditions. The model used here to estimate determinants of women's job search propensity in Egypt follows the methodology of Sminrova [13], Eriksson *et al.* [19], and Boheim and Taylor [26].

The job search propensity is concerned with the decision whether to search or not. This decision may be described as follows:

$$P_{it} = P(R_{it}, H_{it}, L_{it}) \tag{2}$$

where P_{it} is the job search propensity of the ith individual, R_{it} is a set of personal characteristics, H_{it} is a set of characteristics of individual's household, L_{it} is specific labor market characteristics.

In this study, two more equations are estimated:

$$P_{1it} = \alpha_0 + \alpha_1 R_{it} + \alpha_2 H_{it} + \alpha_3 L_{it} + \epsilon_{it} \tag{3}$$

$$P_{2it} = \alpha_0 + \alpha_1 R_{it} + \alpha_2 H_{it} + \alpha_3 L_{it} + \epsilon_{it} \tag{4}$$

where: P_{it} = 1 if individual i is searching for a job and P_{it} = 0 if she is not searching. P_{2it} indicates job search propensity excluding those who depend only on registering in a government employment office from job searchers. The dependent variable (P_{it}) is a dichotomous indicator. Thus, the binary logistic model is used for estimation.

These equations include personal, household characteristics and Labor market conditions as linear independent variables. R_{it} is a vector of personal characteristics that includes age, education, unemployment duration, and previous work experience; H_{it} is a vector of

¹ Unemployment rates are: 10.2%, 13.1% and 9.3%, female unemployment rates are: 19.1%, 31.1%, and 25.6% respectively [27].

individual's household characteristics that includes economic conditions, household size, dependency ratio, marital status, and being a head of the household. L_{it} is a vector of labor market characteristics.

However, in the ELMPS06, the questions related to job search behavior are asked only to unemployed individuals. Thus, there is a sample selection problem. Since the estimations based only on unemployment criterion, i.e. ignoring the selection bias, may lead to biased and inconsistent results, there is a need to tackle this problem. The most common approach used in the literature to solve this issue is Heckman's two-step procedure [28], in which, we jointly model selection into the sample, i.e. unemployment, and the final outcome, i.e. job-search propensity. Hence, the effects of individual and labor market properties on the job search propensity are estimated by employing "selectivity corrected" logistic models. There are two stages in this approach. In the first stage of the model, we estimate the unemployment choice of the survey respondents, where the independent variable is "unemployed"; it is a dummy variable taking the value of 1 if the respondent is unemployed, and zero otherwise. In the second stage, the determinants of job search propensity are estimated. This approach follows the methodology of other job search literature [19], [23]. The list of variables used in the first stage of the model "unemployment choice" includes: age, education, previous working experience, wealth, household size, 1/dependency ratio, marriage, and region. The Heckman model requires that the selection equation; unemployment choice equation here, contains at least one variable that is not related to the dependent variable in the substantial equation [29]; the job search measure equation here. This variable affects unemployment but does not directly affect the outcome studied; which is job search propensity, except through its effect on unemployment. Macroeconomic conditions as shown in different literature significantly affect unemployment [23], [30]-[32]. Economic development measured by GDP per capita in the province/state level have been used as a determinant of the probability of being unemployed as shown in different economic literature [23], [30], [32]. Focusing on women, a higher per capita GDP is generally accompanied by a higher female participation and employment rates [33].

B. Determinants of Women's Job Search Propensity

Table VI shows the results of binary logistic regression of the job search propensity two equations. The likelihood ratio chi-square shows that the overall model fit is good, a p-value of 0.0001. All coefficient estimates are significant at the 1% level.

Concerning personal characteristics, the results show that parameter estimates for females younger than 40 is positive, except for those younger than 15, suggesting that job search propensity increases for females (15-39). The relationship between age and job search propensity is inverse u shaped. Unemployed people, in their prime work age, males or females, are expected to be most active in job search [13]. However, it is worth mentioning that the odds of doing a job search for females (30-39) are *ceteris paribus* 3.6 times as likely as for females (40+), while the odds of doing a job

search for female unemployed youth (15-29) are *ceteris paribus* 2.1 times as likely as for females (40+). Young females are less active than females (30-39). Consistent with both literature and empirical evidence, females' education positively affects their job search activity. The odds of doing a job search for females below secondary education are *ceteris paribus* 0.76 times as likely as for females with secondary education and above. Unemployed females who have completed secondary education tend to search for work more actively than those unemployed females without such education. Previous work experience significantly affects job search, the odds that a female with a previous work experience search for a job is *ceteris paribus* 0.988 times as likely as for females with no previous work experience. The difference seems relatively small, indicating higher job search propensity for new entrants. However, excluding registering in a government employment office, it is found that those females with previous work experience have a higher job search propensity than new entrants; the odds that a female with a previous work experience is *ceteris paribus* 1.43 times as likely as for females with no previous work experience.

With respect to household characteristics, unemployed females from wealthier households are more active in doing a job search; for every one unit increase in the wealth index, the odds of doing a job search increase by a factor of 1.34. Those females usually have higher aspirations. Household size negatively affects women' job search propensity. Women living in larger households tend to have more domestic responsibilities than those living in smaller households. These domestic responsibilities usually are time consuming.

Higher dependency ratio results in more pressures on females to do a job search. Married females are more active in job search than unmarried females. This is mainly due to the economic circumstances in Egypt; high inflation rates and high poverty rates that make it necessary for married women to help their husbands to support their families.

Being the head of the household raises the need to look for additional income, this in turn results in a higher job search propensity for females who are head of their households. The odds of doing a job search for a female who is not a head of the household is *ceteris paribus* 0.002 times as likely as for a female who is a head of the household. However, excluding registering in a government employment office, females who are not head of their families have higher job search propensity.

Concerning labor market conditions; females in labor markets where the unemployment rate is higher are more likely to do a job search. The odds ratio is highest for Alexandria and Suez Canal; the odds of doing a job search for unemployed females in this region are 23.3 times as likely as for females in rural Upper Egypt. In Upper Egypt, less job opportunities are available for women, in addition considering payment levels and job quality; these limited job opportunities do not provide incentives for doing a job search considering search benefits and costs contrary to Alexandria and Suez Canal governorates where women' job search is more likely to pay off.

TABLE VI: DETERMINANTS OF JOB SEARCH PROPENSITY

Explanatory Variable	P ₁		P ₂			
	Estimate (B)	S.E.	Odds Ratio	Estimate (B)	S.E.	Odds Ratio
Intercept	8.6	0.23		1.39	0.022	
Age (reference category: 40+)						
Age (1) <15	-6.3	1.3	0.002	-3.98	0.290	0.019
Age (2) 15-29	0.75	0.02	2.118	0.64	0.016	1.89
Age (3) 30-39	1.28	0.02	3.608	0.65	0.017	1.92
Education (reference category: secondary and above)						
Educational Level: below secondary	-0.27	0.018	0.760	-0.233	0.016	0.793
Ever Worked Before (reference category: never worked before)	-0.12	0.010	0.988	0.357	0.009	1.43
Wealth	0.30	0.003	1.344	0.174	0.003	1.19
Household Size	-0.064	0.001	0.938	-0.004	0.001	0.996
1/dependency ratio	-1.46	0.017	0.233	-1.522	0.015	0.218
Head (reference category: head)						
Not head	-6.05	0.230	0.002	0.278	0.011	1.320
Region: Reference Category (Rural Upper Egypt)						
Region (1)-Greater Cairo	-0.51	0.009	0.600	-0.34	0.008	0.71
Region (2) – Alex and Suez Canal	3.15	0.031	23.254	2.31	0.019	10.104
Region (3) – Urban Lower Egypt	0.21	0.009	1.24	0.34	0.008	1.408
Region (4) –Urban Upper Egypt	-0.36	0.010	0.70	-0.59	0.008	0.557
Region (5) – Rural Lower Egypt	0.50	0.008	1.641	0.06	0.008	1.059
Marriage (reference category: married)						
Not married	-0.238	0.006	0.788	-0.02	0.005	0.978
Selection term	-0.762	0.009	0.467	-0.580	0.007	0.560
N	725		725			
Likelihood Ratio Chi-square	1428489.2		103251.6			
DF	16		16			
Pr>Chi-square	<0.0001		<0.0001			

C. Determinants of Young Women's Job Search Propensity

Young women constitute the vast majority of unemployed women in Egypt. In addition, they increased as a percentage of unemployed women from 88.7 percent to 90.1 percent in 2008 [34]. Moreover, they are the least active in job search. Measures of Job search propensity (P₁ and P₂) are lower among young women than among all unemployed youth in both 1998 and 2006 (TABLE VII).

This leads to more deterioration in women's labor force participation and threatens Egypt achievements in women's economic participation and thus their economic empowerment.

This raises worries about women future labor market outcomes in Egypt and thus raises questions about main determinants of young women's job search propensity. What makes young women more active in their job search? Are young women affected by the same factors as all unemployed women (15-64)?

To answer these questions, the effect of different personal characteristics, household characteristics and labor market conditions should be examined.

TABLE VII: JOB SEARCH PROPENSITY- YOUNG UNEMPLOYED WORKERS 1998-2006

	1998		2006	
	P ₁	Odds Ratio	P ₂	Odds Ratio
Young unemployed women	P ₁ 0.831		P ₂ 0.7571	0.8290
Unemployed Youth (males and females)	P ₁ 0.8416		P ₂ 0.7895	0.8546

* Differences are statistically significant p<0.01.

TABLE VIII: DETERMINANTS OF JOB SEARCH PROPENSITY

Explanatory Variable	P ₁		P ₂			
	Estimate (B)	S.E.	Odds Ratio	Estimate (B)	S.E.	Odds Ratio
Intercept	8.932	0.292	7572.408	2.383	0.021	10.839
Age (reference category: 25-29)						
Age (1) 15-19	-1.514	0.012	0.220	-0.142	0.010	0.868
Age (2) 20-24	-0.945	0.009	0.389	0.147	0.007	1.158
Education (reference category: secondary and above)						
Educational Level: below secondary	-0.830	0.020	0.436	0.009*	0.018	1.009
Ever Worked Before (reference category: never worked before)	1.482	0.021	4.402	1.550	0.017	4.712
Wealth	0.189	0.004	1.208	0.057	0.003	1.059
Household Size	-0.067	0.001	0.935	-0.011	0.001	0.989
1/dependency ratio	-1.714	0.018	0.180	-1.534	0.016	0.216
Head (reference category: head)						
Not head	-5.965	0.292	0.003	0.073	0.014	1.076
Region: Reference Category (Rural Upper Egypt)						
Region (1)-Greater Cairo	-0.807	0.010	0.446	-0.482	0.009	0.617
Region (2) – Alex and Suez Canal	2.261	0.030	9.596	1.637	0.019	5.140
Region (3) – Urban Lower Egypt	0.128	0.010	1.136	0.263	0.009	1.301
Region (4) –Urban Upper Egypt	-0.455	0.010	0.634	-0.788	0.009	0.455
Region (5) – Rural Lower Egypt	0.561	0.009	1.753	0.052	0.007	1.053
Marriage (reference category: married)						
Not married	0.500	0.010	1.648	0.003*	0.008	1.003
Selection term	-0.127	0.011	0.880	-0.603	0.010	0.547
N	600		600			
Likelihood Ratio Chi-square	143980.9		87615.1			
DF	15		15			
Pr>Chi-square	<0.0001		<0.0001			

* Not statistically significant at 0.1, otherwise significant at 0.01.

TABLE VIII shows the results of binary logistic regression of the job search propensity two equations for young unemployed women (15-29).

For the two models, the likelihood ratio chi-square shows that the overall model fit is good, a p-value of 0.0001. The majority of coefficient estimates are significant at the 1% level.

Concerning personal characteristics, the results show that younger women are less active; the odds of doing a job search for females (20-24) are *ceteris paribus* only 0.39 times as likely as for females (25-29). However, excluding registering with public employment offices, very young females (15-19) are still less active while the odds of doing a job search for females (20-24) are *ceteris paribus* 1.2 times as likely as for females (25-29). The older among young women depend more on the government in their job search than those between 20 and 24 years old. However, very young females (15-19) are far less active in job search than other young females.

In contrast to all unemployed women (15-64), excluding registering with public employment offices from search methods used, education does not have a significant effect on young women's job search propensity. This is an alarming sign for young educated women's search activity. Women, especially educated women, depended for decades on the public sector employment guarantee. They do not trust working in the private sector, due to weak enforcement of labor rights in the private sector.

As among all unemployed women, previous work experience positively affects young women's job search, the odds of doing a job search for females with a previous work experience are *ceteris paribus* 4.4 times as likely as for females with no previous work experience. Excluding registering with public employment offices, the effect of previous work experience is larger. Those with previous work experience have stronger incentive to search for jobs to compensate for their loss. In addition, they usually have larger social networks that are useful in finding jobs. They managed to build these networks during their previous work.

Household characteristics have nearly the same effect on young unemployed women's search propensity as on all unemployed women's search propensity, except for marital status.

Unemployed young females from wealthier households have higher search propensity; for every one unit increase in the wealth index, the odds of doing a job search increase by a factor of 1.2 and excluding registering with public employment offices, the odds increase by 1.1.

Household size negatively affects also young women's job search propensity due to more domestic responsibilities. Increasing household size raises the burden of domestic responsibilities on female members, including young female members, leaving only little time for job search. Increasing the household size by one individual leads to decreasing the odds of doing a job search by a factor of 0.935. Higher dependency ratio results in more pressures on females to do a job search.

Economic pressures result in higher job search propensity. The higher the dependency ratio, the higher is young unemployed women's job search propensity. Being the head of the household raises the need to look for additional income for young women as for all women. The odds of doing a job search for a young unemployed female who is not a head of the household is *ceteris paribus* 0.003 times as likely as for a female who is a head of the household. However, excluding registering with public employment offices, young females who are not head of their families have higher job search

propensity; the same as among all unemployed females. The first group of young unemployed females who are heads of their households may only register with public employment offices. They are less likely to search using other non-government methods than the other group. Young females who are heads of their households have very time consuming domestic responsibilities.

While married unemployed females are more active in job search than unmarried females, unmarried young females are more active in job search than married young females. Married young females usually have very young children. Taking care of those very young children is usually very time consuming leaving only very little time for job search.

Labor market pressures make unemployed young women as all unemployed women more active in their job search. The odds ratio is still highest for Alexandria and Suez Canal governorates; the odds of doing a job search for unemployed females in this region are 9.6 times as likely as for females in rural Upper Egypt. Excluding registering with public employment offices from job search methods used, the odds of doing a job search for unemployed females leaving in Alexandria and Suez Canal governorates are 5.1 times as likely as for females in rural Upper Egypt is . In addition women's job search is also more likely to pay off, in Alexandria and Suez Canal governorates than in Upper Egypt governorates.

VI. CONCLUSION

The transition to a market-oriented economy has significantly affected the Egyptian labor market. Women are affected more negatively than men by this transition as they used to depend mainly on the public sector employment guarantee. This leads to a decline in the labor force participation rate among educated females. It is therefore important to raise job search propensity of women especially young women if unemployment in Egypt is not to become more concentrated among women.

This study responds to the gap in the empirical literature with respect to the in-depth study of women's job search activity in Egypt by analyzing changes in women's job search propensity during 1998-2006; an important era of transition in the Egyptian labor market and examine determinants of women's job search propensity in Egypt, focusing on young unemployed women. The study gives more focus to young women as they are the most vulnerable to unemployment and meanwhile are the least active in job search.

The results show that between 1998 and 2006, job search propensity tended to increase. However, women's search propensity is lower than men's search propensity. Moreover, this gender gap is wider excluding registration with public employment offices from job search methods used. Females are still mainly dependent on the government to find work.

The gender gap in search propensity is negatively affecting women's position in the Egyptian labor market. However, it is expected to continue widening due to the transformation in the labor market and the lack of work opportunities in both the government and the public sector, where females especially educated females used for decades to find work of what they consider of a relatively good quality.

Analyzing determinants of women's job search propensity reveals a significant effect of personal, household characteristics and labor market conditions on both all unemployed women search propensity and also young women's job search propensity.

Among all unemployed women, personal characteristics that determine job search propensity include age, education, and previous work experience. There is an inverse U-shaped relation between age and female's job search. Females aged 15-39 are more active in job search than younger and older females. Among females aged 15-39, the youth (15-29) are less active than those aged 30-39. This raises concerns about the future position of women in the Egyptian labor market. Education and previous work experience positively affect women's job search. Raising women's educational levels in Egypt is necessary to close the gender gap in job search propensity in the long run.

With respect to household characteristics, the results show that females who are heads of their households and those living in households with high dependency ratio have higher job search propensity. Not only economic pressures on the household but also unemployment pressures lead to an increase in women's job search propensity. Higher unemployment rates in the labor market result in higher job search propensity.

Young women who constitute the vast majority of unemployed women in Egypt are found to be the least active in job search.

Examining determinants of young women's job search propensity, the results show that very young women tend to be less active. Excluding registering with public employment offices from search methods used, education does not have a significant effect on young women's job search propensity. This is an alarming sign for young educated women search activity. Women, especially educated women, depended for decades on the public sector employment guarantee. They do not trust working in the private sector, especially with weak enforcement of labor rights in the private sector.

Household characteristics have similar effects on both all unemployed and young unemployed women, except for marital status. While married unemployed females are more active in job search than unmarried females, unmarried young females are more active in job search than married young females. Married young females usually have very young children. Taking care of those very young children is usually very little time consuming leaving only very little time for job search.

Labor market pressures make unemployed young women as all unemployed women more active in their job search. Women in labor markets where unemployment rates are higher are more likely to be active in job search.

Improving job quality in the private sector, ensuring enforcement of the labor law, forcing contracts and strong supervision is needed to make females, especially new entrants, more optimistic about jobs in the labor market and hence increase their search propensity.

It is also necessary to provide institutional support to women within their job search. This raises questions about labor market institutions in Egypt, especially labor market intermediaries which still have a very limited role in the

Egyptian labor market. Providing such support especially for young educated females through schools and universities may be very helpful in increasing women's job search propensity.

REFERENCES

- [1] CAPMAS, Census 2006, Cairo: CAPMAS, 2008.
- [2] S. Abdel-Mowla, "Vulnerable employment in Egypt," presented at the ECES Conference on Human Capital in Egypt: The Road to Sustainable Development, Cairo, the Egyptian Center for Economic Studies, June 14, 2011.
- [3] R. Assaad, "Labor supply, employment and unemployment in the Egyptian economy, 1998-2006," *ERF Working Paper Series*, No.0701, 2007.
- [4] H. Holzer, "Search method use by unemployed youth," *Journal of Econometric Literature*, vol. 26, pp. 1-20, 1988.
- [5] M. Hashimoto, Unemployed workers and job search methods in the United States. Tokyo: Research Institute of Economy, Trade & Industry, 2004.
- [6] P. Gregg and J. Wadsworth, "How effective are state employment agencies? Job centre Use and job matching in Britain," *Oxford Bulletin of Economics and Statistics*, vol. 58, pp. 443-467, 1996.
- [7] A. Weber and H. Mahringer, "Choice and success of job search methods," *Institute for Advanced Studies Economic Series*, no. 125, pp.13-37, November 2002.
- [8] M. Lindeboom, J. C. van Ours, and G. Renes, "Matching employers and workers: An empirical analysis of the effectiveness of search," *Oxford Economic Papers*, vol. 46 (1), pp.45-67, January 1994.
- [9] J. Addison and P. Portugal, "Job search methods and outcomes," *IZA Discussion paper*, no. 349, pp. 1-53, August 2001.
- [10] S. Woltermann, "Job-search methods and labor market transitions in a segmented economy: some empirical evidence from Brazil," *Ibero-America Institute for Economic Research working paper*, no. 88, pp. 1-23, July 2002.
- [11] A. Masagué, "Gender gaps in unemployment rates in Argentina," presented at the 9th IZA European Summer School in Labor Economics Conference., Bonn, IZA, April 3-9, 2006.
- [12] M. Hinnoosaar, "Reservation wage, job search intensity and unemployment benefits," in *Proc. of Labor Market Research in Estonia Seminar*, Tallinn, 2004, pp. 95-111.
- [13] N. Smirnova, "Job search behavior of unemployed in Russia," *Bank of Finland Discussion Paper*, no. 13, pp. 1-36, 2003.
- [14] J. Wahba and Y. Zenou, "Density, social networks and job search methods: theory and application to Egypt," *Journal of Development Economics*, vol. 78(2), pp.443-473, 2005.
- [15] S. Smith, *Labor Economics*, Oxford: Routledge, 2003.
- [16] G. Márquez and C. Tagle, "Search methods and outcomes in developing countries: The case of Venezuela," *Inter-American Development Bank Working Paper*, no. 519, pp. 1-42, December 2004.
- [17] J. Barron and O. Gilley, "Job search and vacancy contacts: A Note," *American Economic Review*, vol. 71 (4), pp. 747-752, September 1981.
- [18] R. Chirinko, "An empirical investigation of the returns to job search," *American Economic Review*, vol. 72, no. 3, pp.498-501, June 1982.
- [19] T. Eriksson, R. Lilja, and H. Torp, "Determinants of job search intensity: some evidence from the Nordic countries," *Labor Institute for Economic Research Discussion Papers*, no. 185, pp. 1-38, 2002.
- [20] A. Bergin, "Job mobility in Ireland," *National University of Ireland Economics, Finance and Accounting Department Working Paper Series*, N1940708, pp. 1-24, July 2008.
- [21] R. Konle-Seidl, W. Eichhorst, and M. Grienberger-Zingerle, "Activation policies in Germany from status protection to basic income Support," *IAB Discussion Paper*, no.6, pp. 1-76, 2007.
- [22] P. Sestito and E. Viviano, "Reservation wages: explaining some puzzling regional patterns," *Bank of Italy Working Papers*, no. 696, pp. 1-40, December 2008.
- [23] H. Tasci, Job Search and Determinants of Job Search Intensity in Turkey. Balikesir: Balikesir University, 2008.
- [24] J. Yankow, "Some empirical evidence of the efficacy of job matching in urban labor markets," *International Advances in Economic Research*, vol. 15, no. 2, pp. 233-244, May 2009.
- [25] M. Salas-Velasco, "The transition from higher education to employment in Europe: the analysis of the time to obtain the first job," *Higher Education*, vol. 54, no. 3, pp. 333-360, 2007.
- [26] R. Böheim and M. Taylor, "Job search methods, intensity and success in Britain in the 1990s," *University of Linz, Department of Economics Working Papers*, no. 0206, pp. 1-39, July 2002.

- [27] R. Assaad, *The Egyptian Labor Market Revisited*, Cairo: The American University in Cairo Press, 2009.
- [28] J. Heckman, "Sample selection bias as a specification error," *Econometrica*, vol. 47 (1), pp. 153-161, January 1979.
- [29] J. Smits. (2003). Estimating the Heckman two step procedure to control for selection bias with SPSS. Available: <http://home.planet.nl/~smit9354/selbias/Heckman-SPSS.doc>.
- [30] A. Tansel, "Economic development and female labor force participation in Turkey: time-series evidence and cross-province estimates," *ERC Working Papers in Economics*, no. 01/05, pp. 1-37, May 2002.
- [31] D. Baker, A. Glyn, D. Howell, and J. Schmitt, "Unemployment and labor market institutions: The failure of the empirical case for deregulation," *The Center for Economic Policy Analysis of New School University Working Papers*, no. 4, pp. 1-44, September 2004.
- [32] H. Berument, N. Dogan, and A. Tansel, "Unemployment: evidence from an emerging Economy," *International Journal of Manpower*, vol. 27 (7), pp. 604-623, October 2006.
- [33] C. Perugini and M. Signorelli, "Determinants of unemployment differentials and dynamics across EU-15 countries and regions," presented at the European Association for Comparative Economics Studies (EACES) 9th Bi-Annual Conference: Development Strategies - A Comparative View. Brighton, the University of Brighton, 7 September, 2006.
- [34] CAPMAS, Labor force characteristics and unemployment in Egypt in the last decade (1997, 2008), Cairo: CAPMAS, 2011.

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