

# **Gender Wage Gap in Egypt and Determinants of Female Participation in Labour Market** **By**

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## **Introduction and literature Review**

Despite women's wages growing 140% since 1960, there is little call for celebration. Thirty years after the passage of the equal pay act , women today still earn, on average, 70 cents for every dollar earned by men.( Gray and Huang, 1993). Education has been the one focus of efforts to narrow the gender gap in wages since early 60's. Inequality in the distribution of women among all occupations may be behind that wage gap. Demographic variables such as age, marital status, and parity may be affect negatively women participation in labor force, and consequently widening the gender wage gap. Characteristics of the workplace and occupation's level and type also may have a role to play to narrow the gender wage gap. The traditional unexplained component which is attributed to discrimination may be also another factor. A brief review for some of researches that discusses the idea of gender wage gap will be displayed in the following part.

Appleton S; Hoddinott J; and Krishnan P, in 1999 examined the size and determinants of the gender wage gap in Ethiopia, Uganda, and the Ivory Coast. The analysis includes decomposition of wage differences and sector decomposition by gender. Decomposition varied widely across the 3 countries. There were substantial gender wage differences in Uganda and Ethiopia, which are attributed to wage generating characteristics. Newark interpretations suggest that favoritism of men and discrimination against women were equally important in Ethiopia, while discrimination against women was key in Uganda. Gaps by sector were wider in the private sector in Ethiopia, comparable in Uganda, and wider in the public sector in the Ivory Coast. The processes that accounted for sector wage gaps by gender varied between countries. The wage gap appears narrower in descriptive statistics, which shows that women were over represented in the better-paid public sector. The gender gaps in Ethiopia and Ivory Coast would be 17% and 20% greater, respectively, if men and women were equally allocated by sector. In Uganda, sector equity would increase the gap by 5%

Rodgers YV, in 1998 examined changes in the gender gap in women's earnings in Korea during 1971-92. Unadjusted earnings ratios remained at about 47% during 1971-83, and increased for all education groups after 1983, or 1986 for the college educated. The adjusted ratios showed similar, though smaller trends. Gender differences are attributed to observed and unobserved characteristics and returns to characteristics. Gender differences in job spells and occupational experience increased over time. Women shifted to higher paying sectors. After controlling for observed qualifications, a woman with average earnings had residual earnings at the 38th percentile of male earnings distribution. Returns to a college education dropped after 1983. Earnings inequality declined over time. Cross sectional decomposition analysis indicated that observed characteristics explained a smaller proportion of the earnings gap over time. Gender gaps in education and experience accounted for most of the falling share of the earnings gap. The losses after 1983, were due to a widening gap in unobserved characteristics. Both observed and unobserved returns to education for less-than-college-educated women helped explain the increase in women's relative earnings after 1983. Female employment and education increased over time. Changes in unobserved differences may be due to the increase in the gender earnings ratio of new entrants, or the application of legal reforms that affected women's work or wage discrimination

Duraisamy M; and Duraisamy P, in 1998 presented a study of sex discrimination in earnings, occupation, and educational attainment among educated women in the organized labor market in India. Findings indicate that more females than males were concentrated at the lower earnings levels. Average earnings of men were higher than women's earnings at all ages. The gender gap in earnings widened with age. The female-to-male earnings ratio increased from 0.68 to 0.78 during 1961-81 in S&T fields. The women's earnings ratio declined in engineering and technology, nursing, and veterinary science. Women's earnings increased and were greater than men's in traditional fields of medicine. Women's earnings were closer to men's at higher levels of education. Women with a college degree earned an average of 24% less than college-educated men. 68% of higher-educated persons had an undergraduate college degree. The gender gap in earnings was the lowest among the self-employed, but the ratio declined over time. Women faced greater inequities in the private sector. Wage discrimination accounted for 67-70% of the wage gap by gender. Wage discrimination was greatest at the point of entry and in the rewards for experience. Women were concentrated in education and in the private sector. The dissimilarity index was high in S&T fields. Occupation accounted for about 21% of the earning gap

Blau FD; and Kahn LM, in 1996 use micro data to analyze the gender pay gap in ten industrialized nations, the study focused on the role of wage structure--the prices of labour market skills--in influencing the gender gap. It was found that wage

structure enormously important in explaining why the U.S. gender gap is higher than that in most other countries. It was concluded that the U.S. gap would be similar to that in Sweden and Australia (the countries with the smallest gaps) if the United States had their levels of wage inequality. This finding reflects the larger penalty in the United States for those with low skill levels or employed in low-wage sectors.

Catanzarite L in 1992 argues that economic theory must be changed and that improvement in women's economic status is dependent upon improvement in wages and the creation of more stable employment for women. This study is devoted to a discussion of the relationship between education and work in Central America. The suggested relationship between work and education is curvilinear, and the reasons for work differ between well-educated women and poorly educated women working for survival reasons. Women's participation in the labor force is greater than men's, and work in the informal sector is increasing and increasing for women. Wages for women in informal work are less than wages for men in informal work. The author posits that education is more relevant to stable labor force participation for women than for men in Central America. Theoretical research obscures the reality faced by poorly educated, Third World women. Census reports indicate that few poorly educated women are engaged in stable economic activity. Many poorly educated women work as domestics in unstable employment or agriculture or other informal sector activity that is undercounted by the census. The general pattern suggests that most urban migrant women, who generally are poorly educated, are employed as low-wage domestics. This relationship between labor market status and migration status holds mainly for migrant women. Women migrate from rural to urban areas due to the severe seasonal unemployment in paid work in rural areas, particularly in Costa Rica, El Salvador, and Nicaragua. Studies indicate that women's wages in rural agricultural work are also lower than men's. Economic theory should account for social class background and family structure and for individual economic need. Most current models emphasize individual aspirations and opportunity costs as major reasons for women's economic participation.

Mendiola HM, in 1992 discusses the gender differences in the educational and employment outcomes of educational reform in Costa Rica. It was expected that the shift from elite university education to mass university education would increase female access to higher education. Findings from interviews with students who attended before (1972) and after educational reform (1979) and a follow-up study in 1986 reveal that freshman enrollment rates were 56% for males and 44% for females in both years. However, women had higher retention rates. Among the new institutions created, one had predominantly male enrollment and the others were more evenly distributed by gender. Differences were apparent only in choice of specialization. Women remained dominant in the fields of social work, education, nursing, and arts and letters, were over represented in the social sciences and law, and underrepresented in architecture, engineering, and agricultural sciences.

Socioeconomic differences appeared in 1979 to affect field of choice. More women in the upper classes entered the fields of architecture, engineering, health sciences, law, and basic sciences. Lower class men graduated in higher numbers in nursing, education, social work, and other technical fields. Among 1972 graduates, unemployment or inactivity was 16.22% among females and 1.71% among males. Among the 1979 graduates, there were few differences in activity rates. No association was found between labor force status and socioeconomic status. Women in the 1979 cohort were hired in the public sector at higher rates than in the private sector. The private sector's hiring of more men remained unchanged between cohorts. Higher class women were more likely to work in the private sector, and middle-class women tended to work in the public sector. Women's income was not affected by socioeconomic background, but men's was. Findings suggest that a woman's professional degree allows a woman greater access to the labor market and stable full-time employment. The author concludes that women's opportunities did not necessarily improve after reform.

### **Objectives of the Study:**

The main objectives of the present study are:

- \* To identify the pattern, trend, and the magnitude of the gender wage gap in Egypt.
- \* To discuss reasons behind that gap which is mainly defined through the identifications of the determinants of females' working for cash. The role of higher levels of education reached by females, the role of the characteristics of the workplace and the type and the level of occupations females usually prefer, the role of the demographic variables such as females marital status, parity, and their age, and the role of the traditional unexpected component which is attributed to discrimination may be some of those determinants.
- \* To identify and analyze determinants affect females' work for cash and consequently to identify the role of each variable in narrowing the gender wage gap.

### **Methodology of the Study:**

Both descriptive and statistical analysis approach will be followed. Cross tabulations describe the gender wage gap by different background characteristics will be used to realize the first objective. The logistic regression analysis technique will be applied in the present study to enhance it's descriptive part and to realize the second objective in identifying the effect of each explanatory demographic and the socioeconomic variable mentioned in the second objective on female's work for cash.

### **Data Sources:**

Data obtained from Egypt Demographic and Health Survey 2000 are used to analyze the determinants of female participation of labor market.

### Organization of the study:

- \*Introduction, review of literature, objectives of the study, methodology and data sources will be presented in section I.
- \*Gender wage gap in Egypt will be handled in section II.
- \*Determinants of female's work for cash will be presented in section III.
- \*Conclusion, recommendations, and will be presented in section v.

### Section II: Gender Wage Gap in Egypt

In this section a distribution of wages by economic activity and sex during the period 1990 – 1997 will be examined. The gender wage gap will be figured. The economic activities are classified as follow:

1. Agriculture, Hunting, Forestry and Fishing
2. Mining and Quarrying
3. Manufacturing
4. Electricity, Gas and Water
5. Construction
6. Wholesale and Retail Trade and Restaurants and Hotels
7. Transports, Storage and communication
8. Financing, Insurance, Real Estate and Business Services
9. Community, Social and personal Services

Wage distribution by economic activities is presented in table (2-1).

Table (2-1) Wage Distribution by Economic Activities and Sex during the period 1990-1997

	1990		1991		1992		1993		1994	
	F	M	F	M	F	M	F	M	F	M
1	32	34	39	40	41	41	45	52	51	55
2	105	114	123	127	187	127	148	163	162	166
3	38	56	41	57	48	64	54	72	57	80
4	46	39	54	57	45	47	63	70	61	65
5	50	55	59	61	65	62	77	74	86	88
6	42	51	53	59	57	61	66	74	72	78
7	55	53	71	56	82	63	125	91	113	85
8	85	75	89	84	102	94	119	113	125	119
9	34	55	37	58	45	55	44	60	53	73
T	487	532	566	599	672	614	741	769	780	809
	91		94		109		96		96	

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1995		1996		1997		Total		Gap
F	M	F	M	F	M	F	M	
57	59	57	68	65	67	387	416	93
186	159	169	182	211	210	1291	1248	103
64	87	87	97	80	107	469	620	76
72	69	90	88	85	81	516	516	100
96	91	108	99	118	92	659	622	105
78	87	89	99	103	103	560	612	92
121	89	117	111	116	100	800	648	123
140	129	141	201	171	292	972	1107	88
59	96	71	74	59	75	402	546	74
816	807	929	1019	1008	1127	-	-	-
101		91		89				

*Source: ILO Yearbook of Labour Statistics 2000*

Data presented in table (2-1) indicate the following results:

The gender wage gap in 1997 is the largest. The gender gap index in this year is 89 (1008/1127) while it is 91 in 1996 and 1991.

The gender wage gap index among workers in the community, Social and Personal Services (74), Manufacturing (76), and Financing, Insurance, Real Estate and Business Services (88) is the largest during the interval 1990-1997. Wholesale and Retail Trade and Restaurants and Hotels; and Agriculture come later (92 and 93).

It is also indicated that there is no gap among workers in Electricity, Gas and Water. Gender wage gap indices among workers in Transports, Storage and Communication; Constructions; and Mining and Quarrying indicate higher wages for Females than males. The indices are 123, 105 and 103 respectively. That may be due to bigger numbers of female workers in these type of economic activities. Also because workers in these activities usually with the highest levels of education and consequently with very high salaries.

To differentiate between reasons behind the gender wage gaps indices appeared recently between 1995(101) and 1997(89) is needed. Are these gaps due to lower female participation rates in labour market than males; or due to the wage differentials between females and males; or due to female preference to occupy lower wage levels occupations.

Table (2-2) Economically Active Population by Age and Sex  
Egypt 1998

Age	Activity rates		
	Males	Females	Total
15-19	30.2	11.2	21.1
20-24	59.0	25.3	42.9
25-29	75.6	24.7	49.2
30-39	94.3	25.5	57.4
40-49	98.5	23.6	63.6
50-59	98.3	15.4	60.3
60-64	61.8	6.5	34.4
65+	33.4	2.1	18.6
Total(15+)	71.5	19.6	46.0
Total	44.3	12.3	28.7

Source: *ILO Yearbook of Labour Statistics 2000*

Female activity rate is about 20% of the total female population aged 15+ and about 12% of the total population. The corresponding values to males are 71.5%, and 44.3% respectively. It is also indicated that the activity rate for Egypt is 46% as a percent of all population aged 15+ in 1998. Table (2-2).

Number of female employees in government and public sector increases during the period 1986-1996. They are 35.7%, 39.7%, 42.5%, and 49% in the years 1986, 1993, 1995, and 1996 respectively. That increasing trend has started to decrease sharply since 1997 when it reaches 41% in 1997 and 38.5% in the year 2000. Percent of female employees in the private sector increases sharply during the period 1986 to 1997 (from 3.7% to 17%) when it starts to decrease to reach 15.6% in the year 2000. Investment sector also has decreased. It decreases by 40% during the period 1997-2000. The decrease reaches 32% in the other sectors during the same period. Where the female employees percent reaches 26 in 1997 and 17.8 in the year 2000. The increase of the percent of female employees in Agriculture, Hunting, Forestry, and Fishing sector is the largest. It increases more than 3 times from 8% in 1997 to 25% in the year 2000. Mining and Quarrying comes later, it increases by 80% during the same period. It is also indicated that Clerical, Financing, Insurance, Real Estate, and Business Services Sector has the largest percent of female employees in 1986, 1997, and 2000 (35% of the total employees).

It is also indicated that female employees in 1986 the professional sector comes later it is 28% of the total employees. Most of those females are nurses, teachers, doctors, and they are mostly working in the government sector while Accountants are distributed in all sectors. Tables (2-3) to (2-6).

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Table (2-3) Female and Total Employment By Occupation and Employer 1986 ( in 1000's).

	Govern.	%	Public Sector.	%	Private Sector	%	Total	%
<b>1- Professional</b>								
Female	361	35	23	10.7	37	14.8	422	28
Total	1032		214		250		1496	
<b>2- Administration &amp; Management</b>								
Females	7	14.3	3	25.5	1	6.7	11	12.0
Total	49		28		15		92	
<b>3- Clerical</b>								
Females	251	37.3	59	25.5	29	30.5	339	34.0
Total	673		231		95		999	
<b>4- Sales</b>								
Females	-	-	5	14.3	31	5.3	37	6.0
Total	2		35		58.5		621	
<b>5- Services</b>								
Females	19	4.0	4	4.9	26	10.5	49	6.0
Total	480		81		247		808	
<b>6- Agriculture</b>								
Females	1	2.3	1	5.0	62	1.2	64	1.5
Total	44		20		4237		4302	
<b>7, 8, 9 Others</b>								
Females	3	1.5	29	4.5	36	1.9	68	2.5
Total	195		648		1926		2769	
<b>10- Total Egypt</b>								
Females	659	25.7	128	10.0	254	3.7	1042	9.2
Total	2561		1288		7537		11386	

Source: Soliman, A., 1995

Table (2-4) Female and Total Employment by Occupation Sector, 1993, 95, and 96

	Government & Public Sector as a percent of total Employment 12-64 1993		Government & Public Sector as a percent of total Employment 15-64 1995		Government & Public Sector as a percent of total Employment 15+ 1996	
	Total	Females	Total	Females	Total	Females
Egypt	34.5	39.7	35.3	42.5	30.5	49.0
Urban	49.2	76.8	48.5	77.1	39.2	59.6
Rural	23.3	15.9	24.8	18.6	23.0	32.7

Source: Egypt Human Development Reports 1995, 1997, and 1998

Table (2-5) Female and Total Employment by Occupation Sector, 1997, and 2000

	Government				Public Sector				Private Sector				Investment			
	97	%	2000	%	97	%	2000	%	97	%	2000	%	97	%	2000	%
Female	12311	28	13727	29	1041	13	1031	9.5	16554	17	17467	15.6	143	18	127	10.8
Total	44279		47720		12935		10880		99837		111719		790		1178	

	Others				Total			
	97	%	2000	%	97	%	2000	%
Female	121	26	95	17.8	30170	19	32447	19
Total	458		533		158299		172020	

Source: CAPMAS, Labour Force Survey 1997, 2000



Table (2-6) Female and Total Employment By Occupation in 1997 and 2000

Occupation	1997	%	2000	%
1-Female	953	8	12780	25
Total	11290		50972	
2-Female	8	2	17	3.6
Total	412		474	
3-Female	143	8.5	1780	8.7
Total	16815		20482	
4-Female	156	8.3	179	8.6
Total	1884		2092	
5-Female	175	2	264	2
Total	8417		13586	
6-Female	723	10	2153	9.5
Total	6920		22759	
7-Female	417	6	597	5.3
Total	6473		11260	
8-Female	12583	32	14306	31
Total	39587		46467	
9-Female	315	10	371	9.4
Total	3128		3938	

Source: CAPMAS, Labour Force Survey 1997, 2000

### Section III: Determinants of Females Work

Data obtained from Egypt Demographic and Health Survey 2000 are used. Multivariate analysis is applied to assess the relative influence of each demographic and socio-economic characteristic on women participation in labour market. Work is defined by a dichotomous variable. The independent demographic and socio-economic variables are displayed in table (3-1). The multivariate analysis will be conducted using the Logistic Regression Model. The results obtained from this model are displayed in table (3-2). It is clear that among the different levels of education, women who have completed primary school, the chance of working is 1.5 times the chance of working among women with no education. While women with secondary school and above are not likely to work as much as the uneducated women. The relationship between female participation in labour force and educational level of respondents is statistically significant.

Those women whose husbands completed secondary school and above are less likely to work compared to women with uneducated husbands. Where the chance of women with husbands completed secondary and above is only 70% times those with uneducated husbands. The relationship between female participation in labour force and educational level of respondent's husband is statistically significant.

The coefficient of number of living children is not statistically significant. The chance of women whose husbands are working in Agriculture is only 50% times the chance of those women whose husbands are not working.

Concerning the region of residence, there is a negative association between living in urban lower areas and the chance of participation in labour market. The relationship is statistically significant. On the other hand there is a statistically significant positive association between living in urban upper, rural upper areas and the chance of working. The chance of working to women live in rural upper Egypt is 1.6 times the chance of working to women live in urban governorates.

Age is positively associated with female participation in labour market. The coefficients of age groups 25-34 and 35-49 are statistically significant. Female participation in labour market is increasing with age.

It is clear from the above findings that Women's level of education, the husband's work in Agriculture, the region of residence, and age of woman are important determinants of female participation in labour market.

Table (3-1) Definition of the variables in the analysis

Variables	Definition
A –Dependent variable	
Women work	0 working 1 not working
Independent variables	
1- Respondent Education	0 not educated 1 primary 2 Secondary and above Uneducated is the reference category
2- Partner Education	0 not educated 1 Primary 2 Secondary and above Uneducated is the reference category
3- Number of living children	0 less than 3children 1 3 children and more Less than 3 children is the reference category
4- Partner Occupation	0 not working 1 Prof., Tech. 2 Clerical 3 Sales and services 4 Agriculture Not working is the reference category
5-Region	0 Urban Governorates 1 Urban Lower 2 Urban Upper 3 Rural Lower 4 Rural Upper 5 Frontier Governorates Urban Governorates are the reference category
6- Age	0 15-24 1 25-34 2 35-49 15-24 is the reference category

Table (3-2) Logistic Regression Estimates of some of the Demographic and Socio-economic Determinants

		Odds Ratios	Significant
1-Women Level of Education.			
No education	-	-	-
Primary	0.4026**	1.4957	0.000
Secondary and above	-1.6891**	0.1847	0.000
2-Partner Level of Education.			
No education	-	-	-
Primary	0.1240	1.1320	0.1657
Secondary and above	-0.3197*	0.7263	0.000
3-Number of living children			
Less than 3	-	-	-
3 and more	0.1028	1.1082	0.053
4- Partner occupation			
Not working	-	-	-
Prof., Tech.	0.1582	0.8507	0.6940
Clerical	-0.2802	0.7556	0.4902
Sales and Services	0.0510	1.0523	0.9011
Agriculture	-0.7127**	0.4903	0.0517
5- Region			
Urban Governorates	-	-	-
Urban Lower	-0.2877*	0.7500	0.000
Urban Upper	0.3572*	0.6997	0.000
Rural Lower	-0.1205	0.8865	0.149
Rural Upper	0.5006**	1.6497	0.000
Frontier Governorates	-0.2937	0.7455	0.139
6- Age			
15-24	-	-	-
25-34	0.0766**	0.9263	0.000
35-49	0.6453**	1.9066	0.000

P < 0.05

## Section V: Summary and Policy Recommendations

Results obtained from this work indicate that

- the gender wage gap in Egypt started in 1996 where the gender gap index reaches 91 and 89 in 1996 and 1997.
- The gender wage gap index among workers in Community, Social and Personal Services is the largest (74). That followed by Manufacturing Sector (76) and Financing, Insurance, Real Estate and Business Services (88), and Agriculture, Hunting, Forestry and Fishing (93).

- The gender wage gap is affected mainly by different factors. These factors are:
- The lower activity rates for females (20) than males (70) where the gap index is 30 for population aged 15+.
- Percent of female workers in the government and public sectors - where small salaries provided compared to other sectors and no gender wage gap - is increasing. It is 40% in 1993, 43% in 1995, 50% in 1996 when it started to decrease to be 41% in 1997, 38.5% in the year 2000.
- Percent of the female workers in the private and investment Sectors – where higher wages provided- decreases to 90% and 44% in the two sectors respectively during the period 1997- 2000.
- Percent of female workers also decreases in the other sectors sharply by 30 % during the same period 1997-2000.
- There is great tendency for female workers to work in agriculture- where female workers salaries are remarkably lower than males and the majority is uneducated- it reaches 300% from 8% in 1997 to 25% in the year 2000.
- Percent of female workers in Mining and Quarrying field is very small but increases by 150% from 2% in 1997 to 3.6% in the year 2000 and it is occupied by females with higher levels of education.
- Percent of female workers in Financing, Insurance, and Business Services and Clericals is the largest (34%) in 1986 and (30%) in 1997 and 2000.
- Percent of female Professional workers –where higher salaries- is only 28%. They are working as Nurses, Teachers, Doctors, Accountants and Engineers
- Lower female participation in Labour market as indicated from the logistic regression analysis is due to some important determinants. These determinants are Women's level of education, The husband's work, the region of residence, and age of woman.

Results obtained from the previous work indicate that the gender wage gap in Egypt started in 1996. It is the largest among workers in Community, Social and Personal Services. That followed by Manufacturing Sector and Financing, Insurance, Real Estate and Business Services , and Agriculture, Hunting, Forestry and Fishing.

Because the gender wage gap is affected mainly by lower activity rate for females than males the policy makers should encourage women to participate in the labor market. Also they should keep the balance of female workers in the government and public sectors where no gender wage gap despite their small salaries provided compared to other sectors.

To encourage female work in the private and investment Sectors as well as other sectors with higher qualifications and higher wages provided.

To keep the great tendency for uneducated female workers to work in agriculture despite their remarkable lower salaries than males to absorb large numbers of illiterate females.

To encourage increasing the percent of female workers in Financing, Insurance, and Business Services and Clericals. Also to encourage female Professional workers - Nurses, Teachers, Doctors, Accountants and Engineers-where higher salaries.

To encourage females to reach higher levels of education in all regions and among women in the work age.

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