

## The Structural Changes to the Employment of Egyptian Women In Light of the Free Market Mechanisms

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**Abstract: Introduction:** The Egyptian economy has gone through a number of economic and structural transformations that has affected employment in general and employment for women in particular, where the Ministry of Manpower has seized control of the labor market, but to leave the labor market to the forces of supply and demand and free market mechanisms in the early nineties, and the application of economic reform and structural adjustment program, through a number of economic crises and social revolutions that have swept the Egyptian economy and impacted seriously on a lot of economic sectors including the Egyptian labor sector, which draws attention to the need to analyze these developments on the Egyptian women's employment in terms of gains or losses, specially in light of the evolution of investment and educational policies, and legislations and laws in Egypt.

**Research problem: *The research is an attempt to answer a number of questions, namely:*** What is the impact of economic and policies changes on Egyptian women's employment. (1) The direct foreign investment impact on the Egyptian women's employment. (2) Legislation and laws and their impact on women's employment in Egypt. (3) The determinants of women's employment in Egypt. **Research methodology:** The research is based on the inductive and analytical approach in showing the structural developments of the Egyptian women's employment in the light of the free market mechanisms through local and international data and reports, periodicals, and theses of master and doctoral degrees. As well as, using quantitative approach to analyze the factors affecting the employment of women through the SPSS program. **Research importance:** The research importance is due to that it sheds light on the most important determinants that affected the Egyptian women's employment and the impact of economic, investment and educational policies on the solution of the problem of unemployment in such sector. **Research plan: *The research consists of five main sections:*** (1) **Section One:** The Evolution of Egyptian women's employment at the sectorial level. (2) **Section Two:** The economic impact of investment policies (Local - foreign) on Egyptian women's employment. (3) **Section Three:** The distributional effects of educational policies on Egyptian women's employment. (4) **Section Four:** Legislations and laws, and the Egyptian work market. (5) **Section Five:** Determinants of employment of women in Egypt. **Research hypotheses:** The research is based on testing a number of hypotheses of the employment of Egyptian women and the factors influencing them; including: (1) The increase in women's unemployment rates is due to poor implementation of economic policies. (2) The direct foreign investment helped to increase Egyptian women's employment. (3) The educational policies contributed in opening employment areas to the Egyptian women. (4) The laws and regulations have an important role in the treatment of the Egyptian labor market problems.

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### Section One

The evolution of women's employment in Egypt at the sectorial level (1995- 2014).

Regarding the employment of women in Egypt, we find that it is still suffering from decline, as, according to reports of the Ministry of Planning, total employees by the end of March 2015 stood at about 24.2 million, where male and female employment represented the value of (19.3 and 4.9 million persons, respectively, that is of percentages of (79.75, 20.25%) of the total employment, which reflects the great disparity in employment opportunities for females compared to males (Ministry of planning, 2015)<sup>1</sup>.

The above table refers to a number of points including:

1. At the level of the developing and developed world states, the proportion of male participation in the workforce is higher compared with the participation of women.
2. Participation rates vary between the developing and developed countries (males- females), while they decline in Arab countries dramatically, where in Egypt are estimated at about 23.6% for females compared to a rate of 76.6% for males of the total workforce.

**First;** The sectorial distribution of employment of Egyptian women

Study of the Egyptian women's employment in various sectors of national economy for the period 1995- 2014 shows that the bulk of the laboris led by

the services sector, followed by agriculture and then industry, which is also shown in the table 2.

Table (1): The labor force participation rate as a percentage of the age group 15 years and above for the year 2012

STATE	MALE	FEMALE	STATE	MALE	FEMALE
North America	69.3	56.8	Tunisia	70.6	25.1
Israel	69.5	58.1	Morocco	57.4	43.0
France	61.8	50.9	Algeria	71.9	15.0
Britain	68.8	55.7	Jordan	66.2	15.3
Germany	66.4	53.5	Iran	73.1	16.4
Singapore	77.5	59.0	Saudi Arabia	75.5	18.2
China	78.1	63.8	Oman	81.8	28.6
Malaysia	75.3	44.3	Emirates	91.0	46.6
Egypt	76.6	23.6			

**Source:** United Nations Development Program, Human Development Report, 2015, different pages.

Table (2): Some employment indicators by gender and by economic sector, for the period (2014 - 1995)

Period in years	Annual percentage for employees of Service of total operation		Annual percentage for employees of Industry of total operation		Annual percentage for employees of Agriculture of total operation	
	Female	Male	Female	Male	Female	Male
1995-1999	57.5	44.2	9.9	25.2	32.3	30.32
2000-2004	55.02	48.7	7.9	23.5	36.9	27.7
Change rate % (95-1999 to 2000-2004)	- 4.31	10.3	- 20.2	-6.74	14.24	- 8.64
2005 - 2009	48.8	45.7	5.6	26.7	45.6	27.3
Change rate % (2000-2004 to 2005-2009)	- 11.3	- 6.2	- 29.6	13.6	23.6	- 1.4
2010 - 2014	52.9	46.0	6.9	29.2	41.7	24.8
Change rate % (2005-2009 to 2010-2014)	8.4	0.7	23.2	9.4	- 8.6	- 10.5

**Source:** The table is configured by the researcher from the World Bank data on employment by region. [Http://albankadawli.org](http://albankadawli.org).

The above table refers to a number of points, namely:

1. The rate of change of the annual average for female employees of the total female employment has recorded a negative value in (industry and services) sectors, for the period (1999/95 - 2004/2000), (2009/2005- 2004/2000), while recording a positive value in the agricultural sector compared to a negative value for males in (industry, agriculture) sectors for the same period.
2. The rate of change recorded a negative value in the agricultural sector (male and female) for the period (2005/2009- 2010/2014) while turning to decline in the sector of industry for males.

In fact, the negative and low indicators of the rates of change in employment for males and females during

the nineties and beyond are due to a number of reasons, including:

1. The first and second Gulf Wars and the demobilization of many Egyptian workers in these countries has resulted in a surplus in the supply, a part of its results was replacing the females with males, particularly in industry and services sectors.
2. The application of the economic reform program in the early nineties and the liberalization of the Egyptian labor market as a result, in addition to that the implementation of the privatization program and the sale of many of the public sector companies, causing demobilization of a large number of male and female employees.

3. The financial crisis of Southeast Asian countries in the year 1997 and the ensuing global recession that hit the emerging economies, including the Egyptian economy in addition to the slowdown in the real growth GDP rates of (6.3, 5.1, 3.5, 2%) in the years (1999, 2000, 2001, 2002) due to the outbreak of the crisis in the Egyptian real estate sector and the stagnation of many related industries in addition to the government's delay in reimbursing company dues, causing deepening of the economic recession during the period, has contributed to the depth of the crisis, and the events of September 11TH, 2001 and its global economic repercussions had contributed therein (Adam Z. Rose, 2010)<sup>ii</sup> (2), in addition to the global crisis of 2008.
4. The Egyptian economy had gone through a number of crises beginning of the year 2011 and beyond. These events have affected the productive sectors of the factories to decline or stop as a result of the problems of energy (Doaa S., 2013)<sup>iii</sup> and other economic turmoil represented in the workers' demonstrations in demand of higher wages, as well as the labor power (male and female) in the agricultural sector has been affected, and the rate of change recorded negative rates as a result of razing agricultural land and construction of housing

units in contravention of the law in this period (Gehan AG, 2014)<sup>iv</sup> (4).

**Second;** women's employment at the level of economic activities (15 and above)

According to reports by the Central Agency for Public Mobilization and Statistics, showing high females participation in activities (T, R, A, P, Q) including Health/ Education/ Agriculture/ Amusement & Arts Activities and strongly decrease in activities (I, H, F, E, D, C, B) including Mining/ Manufactures/ Electric/ gas/ Water support/ Constructions/ Transportation/ Food residence Service, as highlighted in Table (3), in reference to the following:

**First:** The sector of (agriculture/ paid home services) a large proportion of female employment, particularly in countryside where the educational level declines, and illiteracy rate significantly gets higher<sup>v</sup> (5) (Ghada, 2014).

**Second,** The activities attractive for the employment of women, especially in the government sector (health/ education) correspond with the nature of Egyptian women where working hours decreases as compared to the private sector, and periods of leave to care for a child also increase, as well as it is also compatible with muscular and physical structure of women, and do not require a lot of experience and skills other activities may require (Shireen, 2014)<sup>vi</sup> (6).

**Table (3): Estimates Of Employed Persons (15 Years Old and Over) By Sex, Industry and Governorates 2014**

Symbol of Economic Activity		V	U	T	S	R	Q	P	O	N	M	L	K	J
Governorates														
Total %	242985	7	37	1193	6015	1206	6664	22632	19130	1442	4141	319	1576	1200
Males	192637	7	29	856	5755	996	2767	11679	14600	1293	3577	293	1195	1496
Females	50348	0	8	337	260	210	3897	11253	4530	156	564	26	381	404
Total %	% 100	100	100	100	100	100	100	100	100	100	100	100	100	100
Males	79.3	100	78.4	71.8	95.7	82.6	41.5	50.9	76.3	89.2	86.4	91.8	75.8	78.7
Females	20.7	-	21.6	28.2	4.3	17.4	58.5	49.1	23.7	23.7	13.6	8.2	24.2	21.3
Symbol of Economic Activity		I	H	G	F	E	D	C	B	A				
Governorates														
Total %	5487	17557	27132	27419	2105	2225	27073	483	66935					
Males	5198	17276	23666	27259	1940	2074	25030	475	45176					
Females	289	281	3466	160	165	151	2043	8	21759					
Total %	100 %	100	100	100	100	100	100	100	100					
Males	94.7	98.7	87.2	29.4	92.2	93.2	92.5	98.3	67.5					
Females	5.3	1.6	12.8	0.6	7.8	6.8	7.5	1.7	32.5					

**Source:** CAPMAS, statistical year Book-Labor 2015/2016 Table (4-4)

In fact, the poor female participation in the labor market is a reflection of the failure of investment policies (domestic and foreign), education and legislation in the face of the requirements of modern production in the factories and the progress of productive art, as well as social customs and traditions, and low wages in the formal work sector, and scant employment opportunities, made a lot of women labor prefer to work at home (labor without

pay) (State information service, 2016)<sup>vii</sup>, while the bulk heads for work in the informal sector, the activities of which represent 40% of GDP, produced by about 2.7 million facilities accommodating about five million workers, estimated at 66% of total non-agricultural employment in private sector, for the year 2014, and legalization of the situations of this huge sector would lead to an additional economic growth amounts to 2% a year, which may correct many of the

structural institutional problems in the Egyptian economy (Eces, 2014)<sup>viii</sup>. Table 4 presents some

indicators of labor in the informal labor market.

Table (4): Percent Distribution of Employed Persons in informal Sector (12-64) By Employment Sex& Place of Residence in 2002- 2014

Employment status	2002		2014		Rate of change%	
	Urban	Rural	Urban	Rural	Urban	Rural
Employees	27.9	5.5	14.9	4.1	- 46.6	- 25.5
Employer	26.0	12.7	13.9	18.3	- 46.5	44.1
Self-Employed	18.1	18.7	13.4	10.8	- 26	- 42.2
Unpaid Family Workers	27.4	63.6	41.3	62.6	50.7	- 1.5

Source: CAPMAS. Labor force sample survey 2002, 2014.different pages.

The above table refers to the deterioration of the indicators of employment in the informal sector at (rural and urban) level, where rates of change recorded negative values for the years 2002, 2014 while recording positive indicators of labor by household without pay, especially in the city, recording a rate of 0.7%. The women make up a large proportion of such employment where is estimated at 62.6% by countryside, and 41.3% by the city for the year 2014. The deterioration of economic indicators in this sector is due to the difficult conditions that swept the Egyptian economy, especially for the period from 2011 to 2014 and beyond<sup>9</sup> (9) (Khalifa, 2011), and

strongly influenced the business activities in the informal sector<sup>10</sup> (10) (Fayez, 2014).

That highlights the importance of investment policies addressing imbalances suffered by the Egyptian labor market.

### Section Two

#### Economic Impact of Investment Policies (local-foreign) on Egyptian Women's Employment

First; domestic investment impact on Egyptian women's employment

Table No. (5) refers to a number of indicators of average annual gross domestic investment and the rate of output growth and its relationship to the employment of Egyptian women.

Table (5): Some indicators of the Egyptian economy and its relationship to the labor market for the period (1995- 2014)

Year	Annual average of total domestic investment (Billion pounds)	Rate of change in gross domestic investment%	Annual average rate of real GDP growth%	Annual average unemployment rate of females out of the total workforce%	Annual average unemployment rate for males of the labor force%
1995-1999	56.6	-	5.05	21.9	5.5
2000-2004	77.0	36.04	3.72	24.6	6.1
2005-2009	177.4	130.4	6.14	23.2	4.78
2010-2014	197.8	11.5	2.1	26.1	7.5

Source: The table is configured by a researcher from the World Bank data

[Http://www.albankaldawly.org](http://www.albankaldawly.org). And statements of National Bank of Egypt, Economic Bulletin, various issues.

- It may be noticed from the above table the high rates of unemployment (male and female) for the period (1999/95- 2004/2000) as a result of lower growth rates for GDP and the economic recession that hit the Gulf region because of the Iraq War (Desert Storm) and the wars that followed, resulting in the destruction of Iraqi economy and the impact on the Egyptian labor market, and Central Agency for Public Mobilization and Statistics reports suggest that the Egyptian labor force that have been dispensed, which estimated at 1.9 million from Saudi Arabia, Jordan and Kuwait because of the war (Ayman, 2003)<sup>11</sup> (11).
- The labor market has recovered for the period (2005-2009) due to higher growth rates because of the oil boom and the increase in oil prices and the increase in Arab intra-flow investments in Egypt and the recovery of the Gulf economy resulting in the decline in the annual average unemployment rates (males - females).
- Unemployment rates tended to increase for the period from 2010 to 2014 because of the Egyptian revolutions and economic turmoil, especially with the decline in tourism revenues and disorders of the exchange rates of foreign currency (en. Wikipedia. Org.)<sup>12</sup> (12) and decline of the direct foreign investment flows, which had the greatest impact in inflicting the Egyptian

economy with recession, which influenced labor market, specially females (Khaled, 2013)<sup>13</sup> (13). The annual average of unemployment rate recorded (26.1, 7.5%) for females and males (Table 5).

**Second;** direct foreign investment and women employment in Egypt

In an attempt to measure the relationship between foreign direct investment (X1 refers to item X6 (FDI LE Billions) Table (1) Annexes), and female labor (over the age of 15 years) as a percentage of the total population (y) for the period from 1991 to 2014 (Table 1 Annexes), using SPSS program following conclusions have been drawn (method *Enter* Annexure No. 2):

1. The analysis demonstrated the significance of relationship between  $x_1, y$  where foreign direct

investment influences the employment of women in Egypt. And also Durbin-Watson test proved there is no self-correlation between the variables.

2. The value of the coefficient of determination  $R^2$  was estimated at approximately of 0.259, which is a weak relationship, where foreign direct investment explains 0.259 of changes in the Egyptian Women's labor market, as the correlation coefficient came of about 0.50 (intermediate correlation), and according to *Stepwise* method, the variable  $x_1$  (FDI) has been introduced, as an influential factor to  $y$  (employment of women in Egypt), (Annex 3).

Sectorial distribution of foreign direct investment in Egypt and the employment of women:

**Table (6): The annual average of the sectorial distribution of the percentage contribution of each sector in the total flows of Foreign direct investment in Egypt (million dollars for the period (2009- 2014/2015))**

Sector	Industrial	Agricultural	Construction	Financial	Service	Tourism	Telecommunication & information technology	Real estate	Oil	Un distributed	Total
2013-2014	1021	114	168	370	365	110	23.0	158	7418	1387	11134
Percent of the total	%9.2	1.02	1.5	3.32	3.3	0.98	0.21	1.42	66.62	12.46	%100

**Source:** The table is configured from the Central Bank of Egypt data, the annual report, various issues, and various years

The above table refers to the following:

1. The sectors of industry and oil acquire 75.8% of the total foreign investments, as they are sectors rely on modern productive art and the saving of labor (male and female).
2. The sectors of (agriculture, tourism, telecommunications and service) recorded very low rates in terms of total foreign investment, whereas they are sectors attractive for female employment, and recorded ratios of (1.02, 0.98, 0.21 and 3.3 %), which may draw attention to the presence of imbalances in the sectorial distribution structure of foreign direct investment, and the economic, monetary and fiscal policies may constitute attractive tools and incentives, especially in the sectors that constitute low contribution in foreign direct investment, conditionally that one of its goals is to solve the problem of unemployment on a qualitative level (male and female).

### Section Three

#### The distributional effects of educational policies on Egyptian women's employment

In the context of discourse about educational policies and its role in the Egyptian women's employment, the studies and recommendations provided by the World Bank, topped by giving more attention to the primary and basic education at the expense of higher education, especially with regard to the methods of funding and the degree of free education, and allocation of government investment among the different levels of education, where some studies regard that rates of return on education goes down with a higher level of education.

The results of these studies used the method of Mincer earning function in estimating the personal return of education, whether at the international or regional level (Abdel Kader, 2003)<sup>14</sup>, (El-Araby-2004)<sup>15</sup>. Table (7) points out to some infrastructure characteristics of pre-university education and its economic effects on the Egyptian women's employment, including:

- The high rate of girls enrollment in the Commercial Secondary schooling (Urban- Rural) as it fits more with the economic conditions for poor families which cannot afford the burden and

costs of secondary education and university<sup>16</sup> (Heba: 2015), as it also represents an end of education atage (Diploma of Commerce).

- It is noticed that the registration rates in the various stages of education were less than 50%, as well as the rates of change for the various stages of education recorded negative rates for the most part, reflecting the high dropout rate during the period of basic education that was estimated at 6% in the prep stage, concentrated in Upper Egypt governorates, as well as the illiteracy rate of about 28% in the age group (15-35 years old) with a total of 17 million people, concentrated among females, for the year 2014- 2015<sup>17</sup> (Ministry of planning,

Five-year plan in 2015, p. 104), adding to that, the low level of the rates of absorption of kindergarten in the age group (4-5 years), where the percentage was estimated at 33.5%.

- This is a reflection of the poor spending allocations on pre-university education and the deteriorated state of educational buildings and the poor investment that does not commensurate the growing demand for educational services as a result of population growth, which leads to depriving many areas of efficient educational services, and low pre-university education outcomes, that does not commensurate the requirements of the work market.

**Table (7): The annual average for the development of the enrollment of girls in the levels of education Urban-Countryside- Total (2010- 2014/2015)**

Stage	2010- 2012/2013			2013-2014/2015			Rate of change Urban%	Rate of change Countryside%	Rate of change Total%
	Urban	Countryside	Total	Urban	Countryside	Total			
Pre-school	48.1	47.23	47.74	48.2	47.7	48.0	0.20	1.0	0.54
Primary	48.4	48.11	48.22	48.5	48.3	48.4	0.21	0.37	0.37
Total societal education	72.4	87.3	85.01	64.8	80.9	78.3	- 10.5	- 7.9	- 7.9
Total preparatory	49.62	49.9	49.3	48.6	49.9	49.3	- 0.04	-	-
Total general secondary	53.74	54.25	53.9	53.5	53.79	53.6	- 0.45	-0.51	0.6
Total technical secondary	35.91	39.4	36.6	35.2	40.2	36.2	- 1.95	2.03	- 1.1
Total agricultural secondary	20.11	17.8	19.6	19.3	15.8	18.4	- 4.03	- 11.23	- 6.12
Total commercial secondary	66.03	56.2	63.4	64.6	54.7	61.7	- 2.2	- 2.7	- 2.68
Total hotel secondary	29.33	27.2	28.9	31.8	29.95	31.4	8.42	10.11	0.65
Total special secondary	37.45	32.5	36.9	37.5	33.8	37.0	0.13	- 8.4	0.27

**Source:** The table is configured by the researcher from the annual statistical report of the education from the Ministry of Education 2015 data, different pages.

University education influence on Egyptian women's employment

University education in Egypt faces a number of challenges that stand as an obstacle in the way of development of this sector<sup>18</sup>, (ibid, Pp. 114-116) including:

- Low proportion of students enrolled in higher education to 26% in age group (18-22 years) for the year 2011-2012, where it amounts in third of Egypt's governorates, to about 15%, while this percentage exceeds 50% in many countries of the world.
- Poor geographical distribution of universities and the lack of fairness in access to educational opportunities for university education, male and female, where the proportion is 50% in Cairo,

Giza, and less than 10% in the other provinces such as El Fayyoum, El Buheira and Minya in addition to the border provinces.

Adding to that, the severe shortage in government spending directed to scientific research, (Tarek-2014)<sup>19</sup> as percentage (0.54, 0.68%, 0.71%) of gross national income for the years from 2013 to 2015 including the higher education sector (universities) spending and government sectors (ministries) beside the private sector, which is a very low percentage compared to its counterparts at the level of the developing and the developed world the like, which explains the decline in educational quality in Egypt, as out of 799 educational institutions, 60 institutions, representing 7.5% of the total, gained accreditation, for the year 2014/2015.

According to the Global Competitiveness Index, Egypt was ranked 118 out of 148 on the Axis of higher education and training, and Cairo University was ranked 401 on the list of the top 500 universities worldwide.

In fact, the poor government spending on higher education sector, represented in the deterioration of buildings, libraries and laboratories, and the small capacity of the Egyptian universities compared to the growing demand for services of this sector as a result of the increase in population and poor infrastructure

for theoretical and applied research, and the separation of scientific research from the applied field and society problems, disproportionate to the needs of the Egyptian labor market, which means that the educational policies in Egypt dedicated to the policy of unemployment rather than employment in the light of the events of administration corruption prevailing in labor market, particularly Nepotism and favoritism, which would negatively impact on productivity (male and female) and decline of wages (Radwan: 2009)<sup>20</sup> as it is highlighted by the following table:

**Table (8): Unemployment Rate & Annual estimates by Education AI status And sex in 2014**

Educational status	Total	University & above university	Upper than intermediate Lower than university	Intermediate	General&azhar secondary	Lower than intermediate	Read & write	Illiterate
<b>Unemployment Rate %</b>								
<b>Total</b>	13	20	11.5	16.4	14.5	11.6	8.7	5.8
<b>Males</b>	9.6	13.7	7.7	11.1	13.1	11.4	8.4	4.2
<b>Females</b>	24	31.6	23.1	34.5	28.1	13.0	12.2	9.6

Intermediate includes (public/Technical)

Source: CAPMAS

It is noticed in the above table that there is a direct correlation between the degree of educational development of individual and the unemployment rate, and it is more increasing among females, especially in university and above university qualification, as it formed 31.6%, as well as increases in accordance with the qualification (intermediate, general and Azhar secondary) due to high supply in this category of education, as the proportion amounts to (28.1%, 34.5%), respectively, for the year 2014.

According to World Bank data, the annual average of long-term unemployment for females percentage of the total female unemployment (Long-term unemployment refers to the number of people unemployed continuously for periods of a year or more expressed as a percentage of the total unemployed) reach high numbers, that were estimated at 87.1% and 78.4% for males.

For the period (2009- 2013) (data, albankadawli.org)<sup>21</sup>, and where the Central Agency for Public Mobilization and Statistics reports point out to the unemployment concentration according to the geographical regions in urban provinces and the Lower and Upper Egypt urbanized areas, where it formed percentages (17.1, 15.4, 15.5%), while the total in rural Upper and Lower Egypt reached the ratios of (10.3, 10.4%) (Ministry of planning 0.2015, p. 74)<sup>22</sup> and unemployment prevail among women in cities of Upper Egypt, as a result of diminishing

educational opportunities and illiteracy insemination, where the ratio is 56%, which explains the prevalence of poverty and its concentration in that region (Nassar, H.2015)<sup>23</sup> 23, as Upper Egypt includes the proportion of 88.3% of the permanent poor compared to 6.7% in rural Delta, and 1.8% in urban delta, where recent developments have led to the emergence of a new category of poor, that is the middle and lower classes (Ministry of planning 0.2015, p. 73)<sup>24</sup>.

#### Productivity

According to reports by Central Agency for Public Mobilization and Statistics on the Egyptian labor productivity, and its share thereof, as highlighted in the following table.

The table points out to the growing indicators in the annual average of worker's share of the (value added/ production supplies/ production at the market price) for years (2011.2012), but the performance of the Egyptian labor market showed a significant decline in the global competitiveness report 2015/2016, where Egypt got (-7) in evaluating the efficiency of the labor market and according to this assessment, Egypt occupied rank 140 among the report 144 states, but in regard of the competitiveness of Egyptian market in attracting investment, Egypt got (-42), and occupied the rank 126 of the total countries the report monitored, as well as labor productivity has declined to reach 0.46% for the same year (www.eces.org)<sup>25</sup>.

**Table (9): Some indicators of productivity of Egyptian labor and its share thereof in (Public business sector- Public sector) for the years (2011-2012 - 2012/2013) (Value in thousand pounds)**

statement	Public business sector			Public sector		
	2011	2012	Rate of change%	2011	2012	Rate of change%
Annual average of worker's share of the value added.	50.2	56.7	13.1	79.4	89.8	13.2
Annual average worker's share of production supplies.	91.5	112.2	22.7	89.6	94.3	5.3
Worker's share of the gross annual average market price.	153.4	165.7	% 8	181.4	196.2	8.2

Source: Capmas data

The low productivity of the Egyptian labor is due to a number of drawbacks related to the unfavorable work environment obsolescence of machinery in the factories, bureaucratic administrative regulations and

poor training and skill development programs for employees, in addition to low wages, as is highlighted in the following table.

**Table (10): Average of weekly wages in public& private sectors& industry(2002/2007 – 2009/2014 ) (L.E/week)**

Sections		2002-2007		2009 - 2014		(2002-2007)	(2002-2007)	State	Estimated national income per capita of business purchasing power of the dollar in 2011	
		Employment wage Average		Employment wage Average		(2009-2014)	(2009-2014)		Males 2013	Females 2013
		Males	Females	Males	Females	Males	Females			
Total	Pub	246	251	737	833	% 200	% 232	North America	63163	41792
	Pri	179	133	405	315	126	137	Israel	35402	24636
Agricultural, Hunting & Fishing, Forestry	Pub	183	187	405	373	121	99	France	44139	29580
	Pri	144	111	335	273	133	146	Britain	42632	27589
Fishing	Pub	121	127	-	-	-	-	Germany	53445	33028
	Pri	121	130	-	-	-	-	Singapore	95329	50001
Mining & quarrying	Pub	378	339	712	891	88	163	China	13512	9288
	Pri	500	459	1002	881	100	92	Malaysia	30984	13181
Manufactures	Pub	239	206	572	472	139	129	Egypt	16522	4225
	Pri	155	102	351	256	127	151	Tunisia	16226	4751
Electricity gas & water supplies	Pub	255	283	718	734	182	159	Morocco	10692	3215
	Pri	325	322	715	808	120	151	Algeria	21219	3695
Constructions & Building	Pub	233	278	524	586	125	111	Jordan	19459	2875
	Pri	188	222	438	376	133	69	Iran	22631	4195
Whole sale & retail trade Repairing motor vehicles	Pub	246	223	559	33	127	49	Saudi Arabia	78689	16197
	Pri	177	149	429	307	142	106	Oman	56424	17346
Hotels & restaurants	Pub	179	304	751	875	327	188	Emirates	72659	23903
	Pri	140	146	318	287	127	97			
Transport, storage & Communications	Pub	217	311	829	976	282	156			
	Pri	210	258	478	564	128	119			
financial intermediation	Pub	275	269	1763	1785	541	564			
	Pri	505	593	1631	1590	222	168			
Real-estate activity ending & Business serves	Pub	189	188	286	396	51	111			
	Pri	306	257	307	315	0.33	33			
Education	Pub	61	65	241	194	123	111			
	Pri	108	92	797	633	343	514			
Health	Pub	362	213	797	632	120	197			
	Pri	157	155	297	236	89	57			

Source: Capmas statistical year book, different numbers

**Table (11): Commodities & Services Consumer Price Index by Main Group (2001-2014) (Jan.2010=100)**

Main sections	Annual Average	2013-2014	purchasing power	purchasing power	Rate of change% for the period (2011-2012)		Annual inflation Rate coordinal to consigner price indices
	2011-2012		2011-2012	2013-2014	(2013-2014)	Year	Inflation Rate %
All Items	121	145	0.83	0.69	19.8	2002	2.7
Food and non Alcoholic beverages	132	166	0.76	0.60	25.8	2003	4.2
Alcoholic beverages Tobacco and narcotizes	186	237	54	0.37	27.4	2004	16.5
Clothing & footwear	106	115	0.94	0.87	8.5	2005	4.8
Housing, water, electricity gas and other fuels	107	117	0.93	0.85	9.3	2006	7.7
Furniture, household equipment	109	127	0.92	0.79	16.5	2007	9.5
Health	103	123	0.97	0.81	19.4	2008	18.3
Transport & Transportation	102	117	0.98	0.85	14.7	2009	11.8
Communication	97	97	103	0.97	-	2010	11.1
Entertainment and culture	114	141	0.88	0.71	23.7	2011	10.1
Education	134	161	0.75	0.62	20.1	2012	7.1
Restaurants & hotels	115	152	0.87	0.66	32.2	2013	9.5
Miscellaneous goods & services	104	107	0.96	0.93	2.9	2014	10.1

Source: Capmas Statistical year Book, Egypt in figures, 2015.

*The above table points out to a number of points most important of which:*

1. The average weekly cash wages for the public and private sectors employees increased, according to economic activity guide (males and females) during the periods from (2002/2007-2009/2014), where confirmed by the rates of change, since they came all with positive signal (Table 10) as it is due to the increase of private, particularly during the period (2011 - 2014) as a result of popular claims that followed the revolutions of January 25TH, and June 30TH and modifying financial conditions to many employees in the states economic sectors.
2. It is in spite of the increase in cash wages, they remain at very low levels compared to real income, especially in the face of rising inflation rates and levels of rates for the period of (2007-2014), Table (11), as well as it remains low when measured against its counterparts in middle-income

countries, both at the level of Arab countries or developing countries (table 10).

3. Regarding the estimated per capita gross income for the year 2013 (equivalent to purchasing power in US Dollars, fro 2011) for females in Egypt, it came low as compared to their counterparts in the developed world and developing countries, and the states of the Gulf Cooperation Council, but they came close with their counterpart in a number of Arab countries in north Africa (table 10), as well as the estimated share of males in Egypt came at about four times the value for females, reflecting the deteriorating economic situation of the employment of women in Egypt, worsening their living and economic conditions especially with regard to health and social status in light of the high subsidy rates<sup>26</sup> (Roksana: 2016) and it is also illustrated by the following table (Table 11):

**Table (11): Some social indicators for women at international level**

State Statement	USA	ISRAEL	FRANCE	BRITAIN	GERMANY	SINGAPORE	CHINA	MALAYSIA	EGYPT	TUNISIA	MOROCCO	ALGERIA	JORDAN	IRAN	SAUDI ARABIA	OMAN	EMIRATES
Number of maternal deaths per 100,000 live births	21	7	8	12	7	3	37	29	66	56	100	97	63	21	24	32	12
The number of births per woman 2000-2005	2	2.9	1.9	1.7	1.4	1.3	1.6	2.5	3.2	2.0	2.5	2.4	3.9	2.0	3.5	3.2	1.4
2010-2015	2	2.9	2.0	1.9	1.4	1.3	1.6	2.0	22.8	2.0	2.8	2.8	3.3	1.9	2.7	2.9	-
Pregnant women infected with HIV do not receive treatment for the prevention of transmission of the virus to the baby% in 2011	-	-	-	-	-	-	33% 9	5%	85% 7	18% 2	70%	24% 7	-	75% 4	-	-	-
Child labor as a percentage of age group 5-14 years	-	-	-	-	-	-	-	-	9.3%	2.1%	8.3%	4.7%	1.9%	11.4%	-	-	-
Dependency ratio per 100 of the population of young people from 0-14 years and elderly more than 65.	29.4 22.2	45.8 17.8	28.6 22.6	27.4 28.1	19.7 32.7	20.8 15.2	25.1 13.1	36.6 8.3	48.2 9.4	33.4 10.8	41.7 7.6	42.4 7.0	53 5.8	34.2 7.8	41.2 4.4	29.2 4.0	19.4 0.6
Birth rate for every 1,000 teen (15-19 years) 2010-2015	31	7.8	5.7	25.8	3.8	0.6	8.6	5.7	4.3	4.6	35.8	10.0	26.5	31.6	10.2	10.6	27.6
Elderly beneficiaries of pensions as a % of the population in retirement age	-	-	100	100	100	-	-	-	8.0	-	-	-	11.8	-	-	-	-
Female 2013- 2014	-	-	100	100	100	-	-	-	61.7	-	-	-	82.3	-	-	-	-
Male 2013- 2014	-	-	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-
	92.5	-	100	100	100	-	74.4	19.8	32.7	68.8	39.8	63.6	42.2	26.4	-	24.7	-

Source: albankeldawl human development report different pages

***The above table refers to a number of observations including:***

1. The number of births per woman recorded for the periods from ((2000/2005), (2010/2015) a high value in the Arab countries compared to their counterparts in developed and developing countries alike, where in Egypt are estimated at about (3.2, 2.8).
2. The ratio of pregnant women with HIV virus, not administering therapy for the prevention of transmission of the virus to the baby is very high percentage in Egypt, that was estimated at 85.7% followed by (Iran, Morocco, Algeria, Tunisia) where percentages recorded were (75.4, 70.0, 24.7, 18.2%), where this has reflected on the number of maternal deaths per 100,000 live births, as it reached 66 women in Egypt for the year 2010, while the value in Morocco and Algeria rose and stood at (79, 100) women, as well as the birth rate in the teen age recorded high rate in Egypt than the rest of the sample, as the figure was 35.8% for the period from 2010 to 2015.
3. It is noticed the high ratio of dependency per 100 of population in the Arab countries, especially the young people in the age group (zero to 14 years) compared to their counterparts in developed countries, as the ratio amounted to 48.8% in Egypt, a ratio approaching the half, increasing the dependency burden, as well as child labor percentage in the age group of (5-14 years), especially in the Arab countries in North Africa, while it disappears into most of the GCC countries and the developed countries, where the figure was in Egypt, about 9.3%, while were (11.4, 8.3, 4.7%) in Iran, Morocco and Algeria, for the period (2010-2015).
4. Regarding the elderly beneficiaries of pensions as a percentage of the population in retirement age, it has a very low rate in Egypt, especially females, as the ratio was 8% versus 61.7% for males, reflecting the deterioration of the insurance situation for Egyptian worker, especially women, and reflects in the same situation the deficiency of laws and legislation of social protection for Egyptian workers Egypt (males - females).

**Section Four**

***Legislation and laws, and the Egyptian work market***  
**First; Social Security System**

The system of social protection for state employees and others, is subjected to Law No. 47 of 1978, in regulation of the civilian employees affairs in the state, and law No. 79 of 1975 of workers with third parties, and Law No. 108 of 1976 of the employers and insurance on them, and Law No. 50 of 1978 for

workers abroad, and Law No. 112 of 1980 on irregular employment, and Law No. 71 of 64 for exceptional pensions. The social insurance law regulating social protection and pensions for state employees and others, suffer from a number of negatives including:

1. The evasion of the private sector, in whole or in part, to participate in the system for the benefit of the workers.
2. Failure of a lot of units of public sector, the government and press organizations to transfer the value of employees subscriptions.
3. Subordination of labor to supply and demand in the labor market after the abolition of the Ministry of Manpower, as well as the privatization system and the demobilization of many labor (early retirement) has led to decline in the outcome of subscriptions and a significant reduction in the number of insured and the low pensions due to the low periods and pay.
4. The control of the government, represented by the Ministry of Finance, and the National Investment Bank on insurance funds since the inception of the system in accordance with law No. 119 of 1980, which required the Social Insurance to deposit surplus annual funds at the bank, and not allowing it to invest any part of the surplus in any other area without the consent of the bank. The National Investment Bank, does invest the insurance funds at very interest determined by the competent minister, where the Bank does not repay, but post it to outstanding balances for insurance, which reduces the resources available for the insured and worsen the physical level and living conditions for them.
5. The decline of the minimum limit of subscription with the disruption of the structure of wages in Egypt and the basic wages remaining low with the increase of the variable wages in unbalanced way.
6. Reduction of the maximum limit of subscription fee, with ministerial decrees promulgated to increase this limit as of January 2013 up to 2292 pounds, and the Presidential Decree No. 117 of 2015 was issued in amendment of some provisions of the social security laws promulgated by Law No. 79 of 1975.

**Second; Civil Service Act**

Due to the issuance of Presidential Decree by Law No. 18 of 2015 promulgating the Civil Service Act to replace the civilian state employees system law, but this law was rejected by the Egyptian People's Assembly, and the Council recommended the introduction of amendments thereto for approval as some articles of the law are contrary to efficiency considerations in the selection of state public staff, including:

- Article 26 of the law gives the right of an employee to appeal of self-sufficiency within 60 days and is considered refusing to complain after this date.
- Article 29 of the law makes the upgrade system is not subject to seniority only, but there is a percentage by choice starting from 25% at the lowest levels up to 100% in higher job levels following senior management levels in the first level and this percentage was accounted for 60% in Law No. 47, meaning that promotions are subject to the whims, nepotism and open the door for the compliments in the selection of administrative cadres.
- Article No. 32 has approved non secondment of employee for more than four years, which leads to lack of family stability and dispersion if the secondment includes the wife or the husband in the workplace where both of them work in.
- The law recognizes the annual increment of 5% of the job pay and other bonuses of 2.5%, but the law 71 has transformed the incentives to percentages linked to the job wage to financial categories lump sums, do not increase annually in accordance with the increase in job pay, which

reduces the actual value by inflation over the years.

**Section Five**

**Women's Employment Determinants in Egypt**

Within the framework of identifying the most important factors affecting the employment of women in Egypt a multi-linear regression equation has been formulated as follows:

$$y = a_0 + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4 + a_5 x_5$$

Where

y refers to employment of women in Egypt (over 15 years) as a percentage of the total population.

a<sub>0</sub>Constant equation a<sub>0</sub>.

a<sub>1</sub>, a<sub>2</sub>, a<sub>3</sub>, a<sub>4</sub>, a<sub>5</sub>refer to regression coefficients.

x<sub>1</sub>total population in million.

x<sub>2</sub>gross domestic investment (LE billion).

x<sub>3</sub>spending on education in Egypt (LE million).

x<sub>4</sub>GNP growth rate.

x<sub>5</sub>female state workers' salaries (\$ millions The ref x<sub>5</sub> from the World Bank data on the salaries of workers in the light of the variable y)

using the statistical package SPSS program, the following conclusions were reached:

First; using the Enter Method:

The results were as follows:

Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	X5,X4,X1 X2,X3 <sup>b</sup>		Enter

a. Dependent Variable: Y

b. All requested variables entered.

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.990 <sup>a</sup>	.979	.973	504735.5600	.979	169.021	5

a. Predictors: (Constant), X5,X4,X1, X2, X3

b. Dependent Variable: Y

ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.153E+14	5	4.306E+13	169.021	.000 <sup>b</sup>
Residual	4.586E+12	18	2.548E+11		
Total	2.199E+14	23			

a. Dependent Variable: Y

b. Predictors: (Constant), X5,X4,X1, X2, X3

Coefficients\*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	18064684.14	2797163.067		6.458	.000
	X1	-124077.010	49587.334	-.382	-2.502	.002
	X2	22412.742	5839.188	.634	3.838	.001
	X3	108.053	32.828	.742	3.291	.004
	X4	75493.970	92783.859	.043	.814	.426
	X5	9.014E-6	.000	.005	.089	.930

**Comment on the results**

- The equation constant  $a_0$  signal came positive, reflecting the direct relationship between the variables.
- The signal of the coefficient of regression for the independent variable  $x_1$  (total population in million) came negative in relation to women's employment in Egypt, which explains that the stagnation of wages and the poor productive energies that accommodate the increase in the labor supply resulting from the increased population has reflected on the employment of women by the increase in size of unemployment reaching 24.2% in the year 2014. While the bulk thereof had transformed into labor without pay (family service) (Capmas).

- The signal of the coefficients of regression  $x_2$ ,  $x_3$ ,  $x_4$ ,  $x_5$  that is (gross domestic investment, spending on education, the rate of output growth, wages of state employees females) came positive, reflecting the significant impact of these variables on the employment of women in Egypt.
- The relationship as a whole came significant, in respect of test F and the amount of selection coefficient R with a value of almost 98%, that is, independent changes explain 98% of the variables that occur on the dependent variable y (employment of women in Egypt).
  - (Durbin - Watson) test proved the lack of self-correlation between variables.

Second: Stepwise way:

The results were as follows

Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	X2		Stepwise (Criteria: Probability-of- F-to-enter<= .050, Probability-of- F-to-remove <=.100)
2	X3		Stepwise (Criteria: Probability-of- F-to-enter<= .050, Probability-of- F-to-remove <=.100)
3	X1		Stepwise (Criteria: Probability-of- F-to-enter<= .050, Probability-of- F-to-remove <=.100)

a. Dependent Variable: Y

**Model Summary<sup>d</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df.1
1	.976 <sup>a</sup>	.953	.951	685310.0114	.953	446.185	1
2	.985 <sup>b</sup>	.971	.968	550057.4127	.018	13.149	1
3	.989 <sup>c</sup>	.978	.975	488433.4651	.007	6.633	1

**Model Summary<sup>d</sup>**

Model	Change Statistics		Durbin-Watson
	df.2	Sig. F Change	
1	22	.000	1.377
2	21	.002	
3	20	.018	

a. Predictors: (Constant), X2,

b. Predictors: (Constant), X2, X3

d. Predictors: (Constant), X2, X3,X1

c. Dependent Variable: Y

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.096E+14	1	2.096E+14	446.185	.000 <sup>b</sup>
Residual	4.033E+13	22	4.696E+11		
Total	2.199E+14	23			
2 Regression	2.135E+14	2	1.068E+14	352.867	.000 <sup>c</sup>
Residual	4.354E+12	21	3.026E+11		
Total	2.199E+14	23			
3 Regression	2.151E+14	3	7.170E+13	300.560	.000 <sup>d</sup>
Residual	4.771E+12	20	2.386E+11		
Total	2.199E+14	23			

a. Dependent Variable: Y

b. Predictors: (Constant), X2,

d. Predictors: (Constant), X2, X3

c. Predictors: (Constant), X2, X3,X1

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11156138.96	242865.447		45.935	.000
	X2	34534.220	1634.904	.976	21.123	.000
2	(Constant)	11064316.73	196571.379		56.287	.000
	X2	18344.201	4653.599	.519	3.942	.001
	X3	69.421	19.144	.477	3.626	.004
3	(Constant)	17561766.75	2528809.426		6.975	.000
	X2	24809.048	4834.891	.701	5.131	.000
	X3	90.894	18.934	.625	4.801	.000
	X1	-109642.924	42571.282	-.338	-2.576	.018

**Comment on the results**

1. Applying *Stepwise* method to demonstrate the independent variables most influential on the dependent variable y (Egyptian women's employment) the variables ( $x_1$ ,  $x_2$ ,  $x_3$ ) (gross domestic investment, spending on education,

number of population), respectively, as the factors of the most impact on the women employment, reflecting the importance of investment policies and expenditure on education in creating job opportunities and the elimination of unemployment (male and female).

2. The relationship between the variables as a whole came significant in terms of  $f$  selection, and selection coefficient  $R$  has been estimated of about 0.9, reflecting the large explanatory power of the independent variables on the dependent variable  $y$ .
3. The test (Durbin-Watson) proved the lack of self-correlation between variables.

### Results

Reviewing the structural evolution of the employment of Egyptian women in the light of the free market mechanisms, the researcher has arrived at a number of findings, including:

- The policies followed for the Liberation of Egyptian labor market, especially, the economic reform and privatization program contributed to the increase in the volume of unemployment, especially among women, during the period of economic openness and the application of the reform program during the nineties, have contributed to liberation of the Egyptian labor market, and resulted in more women's unemployment.
- The weak relationship between foreign direct investment and employment for women in Egypt has been established, where most of the investments are directed to the extractive sectors and high-tech sectors.
- The educational policies were not sufficient to prepare the Egyptian woman for the job market, according to its requirements, but the educational policies have produced a number of drawbacks particularly high rate of illiteracy among women in Upper Egypt, and the low levels of education and high drop-out rates in the stage of basic education, reflecting on the increase of women's birth and the low level of living conditions for low wages.
- Analysis has proven that the economic sectors attractive to women's employment are agriculture, health, education, home service and entertainment. These sectors suffer of underinvestment and lack of state interest in spreading a culture of agricultural cottage industries, which explains why women prefer to work in the government sector, as it is commensurate with the social conditions of Egyptian women in terms of the leave to care for a child and family and no great skills are required, and commensurate with the muscular and physical structure of Egyptian women.
- The high unemployment rates among females, particularly in university/ middle secondary school education/ Commercial/ Azhar classes, because of the oversupply and poor educational and skill level required by the labor market.

- It is noticed that legislation and laws especially labor law and social security system suffer from a lot of negatives for the provision of full social care, especially for women, where retirement pensions covering the population in the retirement age by percentage of 8% for females versus 61.7% for males.
- Examining the most important determinants influential on the employment of women in Egypt for the period 1991-2014 using the *SPSS* statistical package program, and formulating a multiple regression equation including a number of independent variables influential on women's employment, including  $x_1, x_2, x_3, x_4, x_5$  (total population/ gross domestic investment, GNP growth rate of spending on education/ salaries of state employees, females) and using the *Enter* way, has proved the significance of the relationship as a whole, and the great influence of independent variables on the dependent variable  $y$  (employment of women in Egypt) was apparent, as they explain 98%, according to the selection coefficient  $R$ , and using the *Stepwise* method the variables ( $x_1, x_2, x_3$ ) (gross domestic investment, spending on education, the number of the population), respectively, have been introduced, as the most important determinants affecting the employment of women.
- The significance of the relationship as a whole has been proven, in terms of  $F$  test, and the large explanatory strength of the selection coefficient  $R$  97% has established that the independent variables ( $x_1, x_2, x_3, x_4, x_5$ ) with a significant impact on the dependent variable  $y$ , which reinforces the importance of interest in investing and spending on education to create certain opportunities for women employment in Egypt.

### Recommendations

After the review of the structural evolution of the employment of Egyptian women and the factors influencing it the research recommends the following:

1. The importance of increasing investment in sectors attractive for employment of women, especially in agriculture/ Education/ Health/ agribusiness/ Communications and Technology), where they are among the most attractive sectors for employment of women.
2. Despite of the poor relationship between foreign direct investment and employment of women in Egypt, where it is concentrated in sectors with high technology as extractive industries and industry, however, giving more incentives to the such variable, especially in the sectors of agriculture and the areas of education and health

- would create more opportunities for women in Egypt.
3. Taking into account the changing educational policies and restructuring of the curriculum to keep pace with the needs of the Egyptian labor market, especially in the field of technical and university education. It also recommends the need to develop sophisticated training programs in order to support the efficiency, capacity and skills of Egyptian workers, male and female.
  4. The concentration of unemployment among women, in particular in the area of Upper Egypt, where the educational services deteriorate, and the illiteracy rate escalates up to 56% of the total, imposing on the state the need to pay attention to this area and directing the bulk of the investments thereto in all fields.
  5. The analysis proved the significant impact of the global economic crises on the Egyptian labor market, which confirms the need for developing of programs and plans on the economic level to accommodate the Egyptian labor power (male and female) taking into account (short, medium and long term) and developing of investment plans in proportion to annual increases in the work market.
  6. The need to amend the Social Security Act to include social protection programs of all state employees, males and females, and to remove the aspects of deficiency so that the pension system has to provide security and stability of living of the Egyptian workers.
  7. The need to focus on the area of Upper Egypt, where unemployment and illiteracy among women are high, by putting more incentives to attract investment and raising the educational competencies in this region within the framework of comprehensive development.
  8. Unemployment prevails among women, particularly at university level, reflecting poor educational expenditure management in Egypt, and requires planning agencies monitoring career opportunities in all sectors to be as guideline for job seekers, and it is recommended in this area, the need to the companies and factories attention in various sectors to provide efficient training programs to develop the skills of workers in such sectors, and increasing their productivity.

## Annexures

### Annexure (1)

Sav. 2016

	N	Y	X1	X2	X3	X4	X5	X6
1	1991	12634072.00	57.70	25.00	8099.00	1.10	887826000.00	253.00
2	1992	12962844.00	58.90	26.50	9560.00	4.40	134288000.00	457.00
3	1993	12803084.00	60.10	29.00	10872.00	2.90	120076800.00	493.00
4	1994	13480026.00	61.30	33.10	10579.00	3.90	8078400000.00	1256.00
5	1995	12923947.00	62.43	36.80	11222.00	4.60	667782000.00	598.00
6	1996	12719126.00	63.60	49.60	12077.00	5.00	621400000.00	636.00
7	1997	12432877.00	64.75	59.90	12427.00	5.50	709824000.00	891.00
8	1998	12195686.00	65.92	69.80	13527.00	4.04	623450000.00	1076.00
9	1999	12818560.00	67.11	67.00	14747.00	6.10	617942309.00	1065.00
10	2000	13188637.00	68.33	66.00	16524.00	5.40	555043600.00	1235.00
11	2001	13641589.00	69.60	69.00	19858.00	3.50	570634381.00	510.00
12	2002	12976294.00	70.90	71.00	22649.00	2.40	529437318.00	646.00
13	2003	13654801.00	72.25	82.00	23887.00	3.20	559610081.00	237.00
14	2004	14351233.00	73.60	97.00	24629.00	4.10	65436490.00	1235.00
15	2005	15138307.00	74.94	116.00	26907.00	4.50	101349460.00	5375.00
16	2006	15559954.00	76.27	135.00	30002.00	6.80	108721800.00	10042.00
17	2007	17461199.00	77.61	200.50	33938.00	7.10	172255500.00	11578.00
18	2008	17927580.00	78.98	200.00	39785.00	7.20	197353800.00	6712.00
19	2009	18501762.00	80.44	235.00	46198.00	5.10	164440800.00	6386.00
20	2010	19115552.00	82.04	215.50	52260.00	1.80	290157230.00	483.00
21	2011	19606306.00	83.79	258.00	57313.00	2.20	335188620.00	2798.00
22	2012	20215973.00	85.66	248.00	64500.00	2.20	453979040.00	5553.00
23	2013	20764496.00	87.61	266.60	74535.00	2.10	422644470.00	4783.00
24	2014	21319962.00	89.58	257.50	75332.00	2.20	465775520.00	1966.00

**Annexure (2)****Method: Enter****Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	X1 <sup>b</sup>		Enter

a. Dependent Variable: Y

b. All requested variables entered.

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.509 <sup>a</sup>	.259	.225	2721933.825	.259	7.678	1

**Model Summary<sup>d</sup>**

Model	Change Statistics		Durbin-Watson
	df.2	Sig. F Change	
1	22	.011	.217

a. Predictors: (Constant), X1

b. Dependent Variable: Y

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.689E+13	1	5.689E+13	7.678	.011 <sup>b</sup>
Residual	1.630E+14	22	7.409E+12		
Total	2.199E+14	23			

a. Dependent Variable: Y

b. Predictors: (Constant), X1

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14011173.68	736251.139		19.030	.000
	X1	484.814	174.963	.509	2.771	.011

**Annexure (3)****Stepwise method****Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	X1		Stepwise (Criteria: Probability-of- F-to-enter<=.050, Probability-of- F-to-remove <=.100)

a. Dependent Variable: Y

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.509 <sup>a</sup>	.259	.225	2721933.825	.259	7.678	1

**Model Summary<sup>d</sup>**

Model	Change Statistics		Durbin-Watson
	df.2	Sig. F Change	
1	22	.011	.217

a. Predictors: (Constant), X1    b. Dependent Variable: Y

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.689E+13	1	5.689E+13	7.678	.011 <sup>b</sup>
Residual	1.630E+14	22	7.409E+12		
Total	2.199E+14	23			

a. Dependent Variable: Y b. Predictors: (Constant), X1

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14011173.68	736251.139		19.030	.000
X1	484.814	174.963	.509	2.771	.011

**Coefficients<sup>a</sup>**

Model	95.0% Confidence Interval for B		Correlations			Collinearity Statistics
	Lower Bound	Upper Bound	Zero-order	Partial	part	Tolerance
1 (Constant)	14011173.68	736251.139				
X1	484.814	174.963	.509	.509	.509	1.000

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