



The Nexus of Regional Poverty and Education in Egypt: A Micro Analysis

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ABSTRACT

The poverty pattern has changed from an urban/rural pattern to a geographical/regional pattern. These changes may be explained by several aspects. The employment aspect is one of the main determinants for socioeconomic status. The inability of household members to participate in income-generating activities is considered an important explanation of poverty trends and the relationship between poverty and employment can be explained by the loss of earnings or the decline in real incomes. This can be related to several aspects, pattern of jobs and its regularity, human resource development indicators and investment indicators. The objective of this paper is to understand the changes in poverty levels in Egypt in total and by region by studying their relationship to regional composition and trends of employment and educational characteristics. The study starts a theoretical review about poverty and employment, which will constitute the basis for the micro level analysis in order to propose a framework for a pro-poor employment strategy.

Keywords: Regional Poverty, Education, Egypt, Investment in Schooling

JEL Classifications: H75, I20, I32

1. INTRODUCTION

The objective of this paper is to understand the regional changes in poverty levels by studying their relationship to regional composition and trends of employment in order to draw a pro-poor employment growth oriented policies. The study starts with a literature review about poverty and employment to be able to establish a theoretical framework, then the profile of poverty in Egypt is presented in the second part of the study, which will constitute the basis for the micro level analysis. Finally the conclusion proposes a framework for a pro-poor employment strategy.

The traditional dichotomy of urban rural divide was justified by the hypothesis of labor market segmentation, fragmentation and lack of access of the poor to employment opportunities, so that both unemployment and poverty will stem from the weak labor-absorption capacity of the modern sector in the metropolitan cities. Hence, in spite of relatively higher productivity and growth rates in metropolitan cities, poverty also exists (Squire, 1981). Moreover in the case of rural migration to urban areas, migrants may be

discriminated against, because of lower educational characteristics, different work attitudes, relatively less contacts, if compared with natives, which may reduce their chances of finding suitable employment in urban cities.

2. THE RELATIONSHIP BETWEEN POVERTY AND THE LABOR MARKET: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The existing pattern of differences in regional poverty and employment requires a different explanation. Regional divergences may be justified by the relationship between regional employment characteristics and growth pattern on one hand and poverty on the other hand.

Employment characteristics may be a significant determinant of poverty in labor markets. Lack of skills or assets and educational characteristics required for job access may lead to variations in earned income, labor productivity and rewards. Entrance in the labor market will be through low-income points and will include

horizontal shifts rather than vertical movement on the occupational ladder (Oberai and Singh, 1983).

In this respect the theoretical framework of human capital formation may be a relevant hypothesis for regional variations in poverty. Human capital formation hypothesis explains the variations in poverty levels through geographical differences in the accessibility to social services. These divergences have an impact on the qualitative dimension of human capital formation addressing issues of education, training, nourishment, equal employment opportunities, improved health, knowledge and skills formation (Briggs, 1987). These variations affect the return to employment by region and may lead to differences in the living standards.

On the other hand, poverty might arise from differences in economic growth affecting employment opportunities as well as from labor market characteristics. Differences in the overall levels of economic growth and investment lead to limited possibilities for employment generation. As indicated from numerous statistical and theoretical studies, there is a strong association between economic growth and poverty, showing that growth is as good for the poor as for the overall population. Moreover, it was found that poverty reduction could in fact be also necessary to implement stable macroeconomic policies to achieve higher growth rates. On the other hand macroeconomic instability, such as inflation, has generally been associated with growth in poverty levels, as the poor tend to hold most of their financial assets in the form of cash, rather than in interest-bearing assets. The sectorial composition of growth also can affect poverty levels. Growth in agricultural and tertiary activities reduces poverty, because it generates incomes for poor farmers and increases the demand for goods and services, which can easily be produced by them (Ames et al., 2001). Finally, labor market characteristics, such as lack of protection through legal regulations or collective organizations as well as irregularity and insecurity in work conditions may lead also to poverty.

The Egyptian labor Market is characterized by structural distortions intensified by the inability of the rate, as well as the pattern, of economic growth to generate sufficient, productive and decent job opportunities. In fact, the growing mismatch between the population growth and the labor supply, on the one hand, and the labor demand, on the other, will remain the main obstacle against eradicating unemployment and is intensified by the gender and the geographic disparities (Nassar, 2009).

The Egyptian economy has a large and growing informal sector that has been a major source of job creation for some time. However, the jobs created in this sector are not decent enough in terms of wage, sustainability and work conditions. Moreover, a lot of jobs in the formal sector lack stability due to the absence of social security coverage and work contracts, as employers refuse to enter into binding work contracts and complain of the high cost of the social security system. Informal employment can be measured using Labor Force Sample Survey (LFSS) data, in which case, it will be defined as the number of private sector workers employed outside establishments (including agriculture). Under this definition, informal employment reached 10.8 million

in 2008, representing 48.1% of total employment and it reached 11.3 million in 2013 representing 47% of total employment (CAPMAS, LFSS 2008; 2013).

CAPMAS, LFSS (2013) ascertains that 13% of total labor force is illiterate or just reading and writing, however graduates of technical intermediate education represent 41% of total Egyptian labor force and university education graduate reach 31% of all graduates, both categories are facing the highest unemployment rate as will be indicated in the unemployment analysis.

The sectoral distribution of employment indicates that 27.1% of the labor force in 2012 is working in agriculture and hunting characterized by low value-added and productivity. The manufacturing sector, characterized by its forward and backward linkages, employs only 11.2% of total workers. The financial and insurance activities employ 0.8%, the construction sector is absorbing 11.8% of employment, while the public administration, defense and compulsory social solidarity absorbs 8% of total labor force (Authors' Calculations based on data from CAPMAS, LFSS, 2001, 2012).

The literature review shows that the implementation of the policy framework in support of an employment intensive growth strategy for poverty reduction requires a concerted and coordinated program of action to contribute to capacity building in Egypt (UNDP, 1997). Ali and Elbadawi (2000), indicates that the main labor market linkages to poverty are reflected on three main aspects; first, rising unemployment, especially among asset-less school graduates, contributes directly to the spread of poverty. Second, the emergence of the informal sector as a major source of employment with relatively low productivity and low wages and incomes. Finally, the decline in real wages in the formal sector.

Moreover, Wahba (2002), aimed at providing an overview of the labor force dynamics during the period from 1988 to 1998, a period of significant economic reform and structural adjustment. She showed that the net inflow to informal employment was twice as much as that into formal employment. This might be an indication for increasing vulnerability and instability in the region. With the decline in the construction boom, rural to urban migration has not picked up in the 1990s, which might have led to deterioration in living standards of workers in some regions such as Upper Egypt.

Nevertheless, the orientation of the paper on "Employment Intensive Program, ILO, 1998" in tackling poverty, concentrates also on the situation of the informal sector, indicating that in many regions of the world, millions of aspiring new entrants to the labor force face bleak job prospects and poverty.

El-Ehwany and El-Laithy (2001) questioned directly, what has Egypt done in the context of poverty, unemployment and employment? However each aspect was investigated separately, without drawing interrelationship. In this study it was indicated that causes of poverty are: Insufficient formal employment opportunities, low earning per working hour and high prices of basic goods and services. The main findings can be summarized as follows: The labor market in Egypt has been increasingly suffering

from many distortions and disequilibria during the period 1980-2000, the problems of the labor market are a natural outcome of the complete divorce between macro-economic policies and employment policies, the main challenge facing policy makers in both medium and long terms lies in the creation of sufficient, productive and permanent jobs to reduce unemployment and to enhance labor competitiveness.

The objective of the study by Assaad et al. (1999) was to understand the factors that sort individuals into various employment states. The evidence presented in this paper show that the Egyptian labor market is moving to a stage, where unemployment is increasingly concentrated among specific groups, whose access to the private sector is limited. Casual workers are highly vulnerable to underemployment rather than to unemployment. This is especially true in rural areas and even more for females.

Nassar and El-Laithy (2000) tackled directly the relationship between urban poverty and the labor market by studying employment as a determinant for poverty. The paper revealed that the classification of individuals as poor is related to individuals with higher dependency ratio, illiterate and unpaid workers in construction, manufacturing or in agricultural activities. The findings of this study concentrate on the following: Access-ability of the poor to the labor market is limited due to the selectivity of the labor market in metropolitans with respect to skilled workers, significant wage differences exist among the different welfare groups, in addition there is an increasingly concentration of the poor in the informal sector, where wages are low and formal working regulations are missing.

3. THE PROFILE OF POVERTY IN EGYPT

Poverty can be defined as an absence or a shortage of the needs required for human survival. Nevertheless, there is no agreement about what basic human requirements are or how they can be identified. Moreover, the definition of poverty can be extended to include other types of deprivation, such as non-material deficiency and social differentiation (Wratten, 1995).

In Egypt, poverty declined in 1999/2000 for the first time since the early 1980s to less than 17% of the population (World Bank Report, 2002). However, the Report shows also that the poverty pattern has changed from an urban/rural pattern to a geographical/regional pattern - as poverty has declined in the metropolitan cities and increased in Upper Egypt and was at intermediate levels in Lower Egypt. The incidence of poverty increased substantially from 10.82% to 19.27% in urban Upper Egypt and from 29.32% to 34.15% in rural Upper Egypt over the period 1995/96-1999/2000. On the other hand, poverty declined over the same period from 13.1% to 5.06% in Metropolitan cities and from 8.34% to 6.17% in urban Lower Egypt and from 21.53% to 11.83% in rural Lower Egypt.

The panel Household Income, Expenditure, and Consumption Survey (HIECS survey) 2005-2008 which is conducted by CAPMAS to trace household consumption and living standards over 2005-2008 demonstrates that due to rapid economic growth,

Egypt has achieved impressive poverty reduction, reversing the trend of worsening poverty outcomes over 2000-2005. The number of poor was reduced by 1.8 million. Real consumption has increased even despite accelerating inflation and rapidly growing food prices. However, the economic growth has not resulted in immediate and universal improvement of living conditions for all. While Egypt experienced high gross domestic product (GDP) growth rate over the period 2005-2008 poverty remained a major challenge in Egypt. In 2004/2005, it was estimated that about 19.6% were living in absolute poverty, and 21% were near poor. The global economic slowdown that began in 2008 had adversely affected growth and employment and investment in Egypt. Growth has been threatened by inflation, particularly rising food prices, which have worsened the situation of the poor. Since the events of 2011, Egypt has experienced political disturbance, which severely affected the Egyptian economy and people's livelihoods. At the present time, growth rate remains stationary, at 4.3% in the fourth quarter of 2014. However, the most dangerous situation is the growing income inequality coupled with a continued persistence of rural/urban disparities. The unemployment rate, which was around 9% in 2010, has increased to 12.9% in the fourth quarter of 2014. Unemployment rates are highest among young people and particularly among individuals in the rural areas. Moreover, Egypt's poverty rate increased over time and reached 26.3% in 2013/2014 (CAPMAS Statistical Yearbook, Different Issues).

Most of the country's poor people live in rural Upper Egypt, where there are higher rates of illiteracy, infant mortality and low rates of educational attainment and health care. Around 51% of the population living in rural areas in Upper Egypt is poor. Most individuals in Upper Egypt depend on agriculture for their living; however, agriculture does not provide them with sufficient food security and income. Most people have limited access to water, in terms of both quality and quantity. In addition, they have very small land holdings compared to those in Lower Egypt. Moreover, alternative employment opportunities are limited in Upper Egypt because of the insufficient other non-farm economic activities.

It can be said that, out of the 1000 poorest villages in Egypt, 941 are located in Upper Egypt and the remaining 59 villages are scattered across the Lower Egypt. The increasing incidence of income poverty in recent times is compounded by the prevalence of poor living conditions and inadequate access to education and health services resulting in extreme multidimensional poverty amongst 11.9% of the population in 2011. Upper Egypt shows the highest prevalence rate (18%) compared to all other regions, much higher than Lower Egypt and Urban Governorates (8.7% and 6.8% respectively) (Egypt Network for Integrated Development, 2015).

HIECS 2010-2011, ascertains that the population of rural Upper Egypt is dramatically worse off than rural Lower Egypt, and Qena governorate suffers most severely from among all Upper Egypt. The proportion of poor and near poor households is as high as 78% for Qena, which is above the average for rural Upper Egypt (75%). The incidence of poverty is also widely variable across governorates. Governorates that demonstrate the highest income poverty rates are also those with the highest rates of extreme multi-dimensional poverty; mostly Menia, Assuit, Sohag, Bani

Suef, Fayoum and Qena in Upper Egypt. The prevalence of income poverty is critically high in Assuit (69.5%), Sohag (58.6%) and Aswan (54.4%) in Upper Egypt, moderate in most governorates of Lower Egypt and negligible in Suez and Damietta (3.2%)¹.

Hence, there is strong evidence that justifies targeting of rural Egypt and especially rural Upper Egypt for social protection and economic development. Biasness in public spending in favor of the South is not only vital for differentials in poverty levels and deprivation but also can be justified in terms of comparative advantage for job creation.

The percentage of the poor in 2013/2012 is the highest since 2000 since it reached 26.3%. The percentage increased from 16.7% in 1999/2000 to 21.6% in 2008/2009 to 25.2% in 2010/2011 and then it reached 26.3% in 2012/2013 (CAPMAS, Indicators of Poverty, HIECS 2010/2011, 2012/2013).

Table 1 demonstrates that, while urban areas have seen a rise in the indicators of poverty between 2011 and 2013, the rural areas have not experienced any change statistically significant. The urban governorates have seen the biggest rise in the poverty indicators (becoming more deteriorated). Moreover, the poverty rate has fallen in Upper Egypt, whether in urban or rural areas, and the difference was statistically significant. About half of the population in rural Upper Egypt (49.44%) cannot meet their basic needs in 2012/2013. This percentage decreased to 26.70% in the urban Upper Egypt, while that percentage reached the lowest level in the urban Lower Egypt (11.71%).

HIECS, 2012/2013 ascertains that the poorest governorates were Asyout (61.7%), Qena (59.8%), Suhag (55.8%), North Sinai (47.7%), Aswan (44.3%), Luxor (43%) and Bani Sweif (38.5%).

4. THE MICRO ANALYSIS

The main question in this part addresses employment and education as two important factors among others affecting the average incomes of workers.

The data used in the analysis is Egypt Labor Market Panel Survey 2012 (ELMPS 2012). The size of the total sample is 9723 individuals. The sample contains waged workers whose ages range from 15 to 64 years. The empirical model specifies the different factors affecting the average income of workers, including employment and job stability.

Table 2 presents the regression results of estimating the earnings function of the total sample. It is estimated that, the private rate of return to education is 3.6%. Moreover, the rate of return to the number of years of experience is 2.6%. Moreover, at 5% significance level, the individual who lives in urban areas gains more earnings than the one who lives in rural areas by 11.2%.

¹ HIECS 2012/2013, which is a new HIECS panel survey conducted by CAPMAS illustrates that the average poverty line is 3920 Egyptian pounds per individual per year, or 327 pounds per person per month and the average abject poverty line is 2750 Egyptian pounds per individual per year.

Gender has a significant effect on the earnings of an individual i.e., males get more monthly earnings than females by 24.8% on average. There is a negative relationship between the household size and the earnings of an individual. The married individual gets more earnings than the single by 4.9%. In addition, working in government or public sectors guarantees more earnings (by 5.3%) if compared to private, investment or international sectors. If the work is permanent then, the earnings will be higher by 11.1% compared to casual, seasonal or temporary work. The variable of the number of hours per day is insignificant while working for long hours per day is associated with higher levels of earnings for an individual.

The estimation results prove the importance of human capital formation factors in determining the earnings function of workers. As seen from Tables 2-6, education and experience

Table 1: The development of the poverty rate in Urban and Rural areas, 2010/2011-2012/2013

Region	2010/2011	2012/2013	The difference
Total	25.18	26.29	1.11
Urban	15.27	17.59	2.32
Rural	32.35	32.38	0.04
Urban governorates	9.58	15.68	6.10
Urban lower Egypt	10.32	11.71	1.39
Rural lower Egypt	16.99	17.41	0.42
Urban upper Egypt	29.41	26.70	-2.72
Rural upper Egypt	51.48	49.44	-2.04

Source: El-Laithy, poverty and inequality metrics, Unpublished memo, 2014

Table 2: The regression results of estimating the earnings function (the total sample)

lnw	Coefficient	Standard error	t	P>t
Educlvl	0.03,51,668	0.00,15,062	23.35	0.000
Calculatedexp	0.02,59,615	0.00,19,467	13.34	0.000
Expsquared	-0.00,03,135	0.00,00,381	-8.23	0.000
Urban	0.10,57,918	0.01,22,855	8.61	0.000
Sex	0.22,17,201	0.01,68,013	13.20	0.000
Hhsize	-0.00,726	0.00,30,234	-2.40	0.016
Marital	0.04,79,905	0.01,59,628	3.01	0.003
Ussectrp	0.05,17,714	0.00,72,898	7.10	0.000
Usstabl	0.10,54,888	0.01,45,555	7.25	0.000
Ushrsday	0.0,00,978	0.0,02,608	0.37	0.708
Usnumdys	0.01,18,318	0.00,57,548	2.06	0.040
_Cons	5.6,74,954	0.05,16,849	109.80	0.000

Source: Authors' calculations based on ELMPS 2012

Table 3: The regression results of estimating the earnings function (rural lower)

lnw	Coefficient	Standard error	t	P>t
Educlvl	0.02,15,366	0.00,26,962	7.99	0.000
Calculatedexp	0.02,59,015	0.00,35,293	7.34	0.000
Expsquared	-0.0,00,388	0.00,00,673	-5.76	0.000
Sex	0.21,67,997	0.03,15,521	6.87	0.000
Hhsize	-0.01,29,127	0.00,61,205	-2.11	0.035
Marital	0.04,03,514	0.03,13,135	1.29	0.198
Ussectrp	0.01,35,711	0.01,33,485	1.02	0.309
Usstabl	0.09,38,667	0.02,57,319	3.65	0.000
Ushrsday	0.00,14,724	0.00,41,254	0.36	0.721
Usnumdys	0.02,23,404	0.00,95,622	2.34	0.020
_Cons	5.8,35,065	0.08,99,274	64.89	0.000

Source: Authors' calculations based on ELMPS 2012

Table 4: The regression results of estimating the earnings function (urban lower)

Lnw	Coefficient	Standard error	t	P>t
Educlvl	0.03,27,382	0.00,40,267	8.13	0.000
Calculatedexp	0.02,75,731	0.00,51,333	5.37	0.000
Expsquared	-0.00,03,308	0.00,01,041	-3.18	0.002
Sex	0.25,76,658	0.03,93,698	6.54	0.000
Hhsize	-0.00,37,001	0.01,00,795	-0.37	0.714
Marital	0.06,00,585	0.04,05,863	1.48	0.139
Uzssectrp	0.00,71,136	0.02,00,689	0.35	0.723
Usstabl	0.20,33,283	0.04,07,791	4.99	0.000
Ushrsday	0.01,15,137	0.00,76,441	1.51	0.132
Usnumdys	0.00,86,118	0.01,66,392	0.52	0.605
_Cons	5.5,42,955	0.14,26,049	38.87	0.000

Source: Authors' calculations based on ELMPS 2012

Table 5: The regression results of estimating the earnings function (rural upper)

Lnw	Coefficient	Standard error	T	P>t
Educlvl	0.02,38,262	0.00,29,753	8.01	0.000
Calculatedexp	0.01,97,793	0.00,40,848	4.84	0.000
Expsquared	-0.00,02,642	0.00,00,738	-3.58	0.000
Sex	0.17,13,541	0.05,14,604	3.33	0.001
Hhsize	-0.00,06,141	0.00,47,368	-0.13	0.897
Marital	0.02,38,913	0.0,34,321	0.70	0.486
Ussectrp	0.0,52,849	0.01,75,633	3.01	0.003
Usstabl	-0.03,11,784	0.03,17,379	-0.98	0.326
Ushrsday	-0.00,28,927	0.00,54,955	-0.53	0.599
Usnumdys	0.05,35,009	0.01,05,699	5.06	0.000
_Cons	5.8,07,341	0.10,61,467	54.71	0.000

Source: Authors' calculations based on ELMPS 2012

Table 6: The regression results of estimating the earnings function (urban upper)

Lnw	Coefficient	Standard error	t	P>t
Educlvl	0.0449447	0.00,44,235	10.16	0.000
Calculatedexp	0.02,73,504	0.00,53,192	5.14	0.000
Expsquared	-0.00,03,016	0.0,00,111	-2.72	0.007
Sex	0.22,44,871	0.04,13,708	5.43	0.000
Hhsize	-0.00,54,914	0.00,81,724	-0.67	0.502
Marital	0.05,13,865	0.04,33,714	1.18	0.236
Ussectrp	0.0,64,218	0.02,00,839	3.20	0.001
Usstabl	0.14,94,897	0.04,12,557	3.62	0.000
Ushrsday	-0.00,44,858	0.00,75,894	-0.59	0.555
Usnumdys	-0.03,44,196	0.01,60,964	-2.14	0.033
_cons	5.8,07,934	0.14,65,615	39.63	0.000

Source: Authors' calculations based on ELMPS 2012

variables are playing the most important role in increasing earnings for all regions. However, despite the fact that the educational variable increases earnings, higher levels of education are the main determinant of a significant increase in the income levels.

The low educational attainment levels of the labor force in Upper Egypt (especially in rural areas) in comparison to other regions, can explain the concentration of workers in Upper Egypt in primary activities and in the work status self-employed without hiring others, which do not need high educational characteristics. These results suggest a reallocation of social spending to deprived areas such as Upper Egypt. Geographical variations in per capita expenditure on education and training explain differences in educational attainment and the concentration of labor in low earning activities in Upper Egypt.

Regarding rural Lower sample, the results show that the marital status, the economic sector of employment and the number of working hours per day are insignificant variables at 5% significance level.

According to the sample of urban Lower region, the results ascertain that the household size, marital status, the number of working hours per day and the sector of employment are insignificant variables at 5% significance level.

In rural Upper Egypt, the results ascertain that the household size variable is not significant and this result is consistent with the culture of this region. Moreover, the job stability variable is insignificant at 5% significance level. Working in private, investment or international sectors guarantees more earnings (by 5.4%) if compared to the government or public sectors. It can be said that, in rural Upper Egypt, the rate of absorption of workers in the private sector is higher than in other regions; however most workers are in the informal sector.

According to the sample of urban Upper Region, the results demonstrate that the household size, the marital status and the number of working hours per day variables are insignificant at 5% significance level. Working in private, investment or international sectors guarantees more earnings (by 6.6%), if compared to the government or public sectors².

To sum up, the estimation results prove the importance of human capital resources in determining the earnings function of workers i.e., education and experience variables are playing the most important role in increasing earnings for all regions. Moreover, characteristics of the labor market have a significant effect on the earnings function. The results show that in Upper Egypt (rural and urban) and rural Lower Egypt, the probability of being non poor decreases with the increase in the number of working days per week. This might be explained by the fact that those who are working more days are those, who do not have permanent jobs in regions with large rural areas and for whom the probability to be poor is higher. Alternatively, this fact is not valid in urban governorates and in urban Lower Egypt³ because permanent work is concentrated more in these regions. Job stability⁴ is important as a factor reducing the probability of being poor. This variable is significant in the total sample, urban governorates, Lower Egypt (rural and urban) and urban Upper Egypt. Furthermore, the estimation results show that rural Upper Egypt has the highest ratio of unstable work.

Over the period 1996/1997-2000/2001, investment policies in Egypt tend to be biased against Upper Egypt especially in rural

- 2 Tadele (2004) studied the causes of poverty in urban areas in Ethiopia. Kedir (2005) confirmed that, the study by Tadele (2004) dealt more with methods for data collection than with the techniques of poverty analysis. The reasons of poverty as mentioned by Tadele (2004), include urban displacement, unemployment, high food prices, bad health services, HIV/AIDS and discrimination against women in employment opportunities.
- 3 The estimation results ascertain that the variable of the number of working days per week is not significant in urban governorates and urban Lower Egypt.
- 4 The categories of this variable include: Permanent, temporary, seasonal and casual work.

areas, while the distribution of public investments by region in 2012/13 shows an opposite case, in which investment was higher in Upper Egypt especially in the southern areas (Ministry of Planning, 2012). Actually, this trend of investment can explain the situation of poverty by region in Egypt over years. Over the period 1995/96-1999/2000, poverty has declined in the Metropolitan cities and increased in Upper Egypt and was at intermediate levels in Lower Egypt. The incidence of poverty increased substantially from 10.82% to 19.27% in urban Upper Egypt and from 29.32% to 34.15% in rural Upper Egypt. On the contrary, over the period 2010/11-2012/13, the urban governorates have seen the biggest rise in the poverty indicators (becoming more deteriorated). Moreover, the poverty rate has fallen in Upper Egypt, whether in urban or rural areas, and the difference was statistically significant.

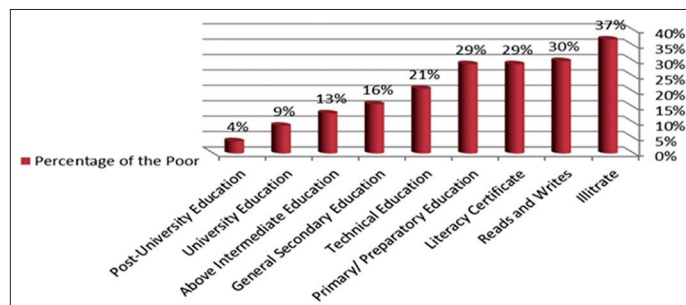
One of the main findings of the micro analysis is that improving educational levels in all regions will reduce the probability of being poor because of the positive relationship between the number of years of schooling and the earnings of an individual. Accordingly, it is important to present a general outlook on the public expenditure on education in Egypt. The percentage of public expenditure on education to the total public expenditure was 11.7% in 2010/11 and 2013/14. However, the percentage of public expenditure on pre-university education to the total expenditure on education has increased from 66.4% in 2010/11 to 68.1% in 2013/14, while the percentage of public expenditure on university education to the total expenditure on education has remained constant in 2011/12-2012/13 (21.4%) and reached 22.4% in 2013/14. As a percentage of GDP, the public expenditure on education was 3.4% in 2010/11 and 4.1% in 2013/14 (CAPMAS, Egypt in Figures, 2012, 2013, 2014 and 2015).

Regarding regional expenditure on education, it can be said that, the lowest allocations directed to the educational directorates located in Upper Egypt especially, Assiut, El-Minya, Suhag and Qena while the highest allocations directed to educational directorates in the Lower Egypt, for example, Damietta and Dakahlia (Ministry of Finance, Administrative Machinery Budget, 2014).

As mentioned above, low level of education is one of the most crucial factors linked to poverty in Egypt, where the indicators of poverty decrease with higher levels of education. Regarding the percentage of the poor according to the educational status in 2012/2013, it can be said that, an individual is more likely to be poor if he is illiterate. Figure 1 illustrates that 37% of illiterate individuals are poor, compared to 9% for those with university education in the same year. Despite the high unemployment rates among the university and post university education, just 4% of post university education counted as poor over the same period.

Table 7 illustrates the regional distribution of investments directed to the education sector in Egypt. The data shows that the total investments directed to the education sector in Lower Egypt in the fiscal year 2013/2014 was 6,023 million Egyptian pounds; while the total investments directed to the education sector in Upper Egypt in the same fiscal year was 2,074 million Egyptian pounds. In turn, this explains the reasons of achieving very low levels of education in Upper Egypt (Table 8).

Figure 1: The percentage of the poor according to the educational status in 2012/2013



Source: Drawn by the Authors based on CAPMAS, Indicators of Poverty, HIECS 2012/2013

Table 7: Regional distribution of investments directed to the education sector (in million Egyptian pounds)

Region	Total investments	Investments directed to the education sector
Urban Governorates	19.088	1.405
Lower Egypt	25.028	6.023
Upper Egypt	15.082	2.074
Total	59.198	9.502

Source: Authors' calculations based on data of Ministry of Planning and Follow-Up and Administrative reform 2013/2014

Table 8 ascertains that, the highest percentage of illiterates (39.6%) live in Upper Egypt. Moreover, 35.1% of the total individuals who can only read and write are located also in Upper Egypt. Consequently, this explains the nexus among poverty, employment, investment and education i.e., individuals live in Upper Egypt (the poorest areas) are severely educationally deprived since the total investments directed to the education sector in Upper Egypt are very low compared to Lower Egypt. Furthermore, the low educational attainment levels of the labor force in Upper Egypt in comparison to other regions, can explain the concentration of workers in primary activities and in the work status self-employed. Again, improving educational levels in Upper Egypt region will reduce the probability of being poor because of the positive relationship between the number of years of schooling and the earnings of an individual.

5. CONCLUSION

The previous analysis at the micro level shows that differences in human capital indicators and employment characteristics may explain the variations in geographical poverty. As these factors are implemented at the sectoral level and affecting the micro level, suggested poverty reduction strategy can be divided into two sets of policies: Sectoral as well as micro level policies. The main objective of this strategy is to improve the living standard of inhabitants in Upper Egypt through expansion of productive employment opportunities. Implementation of such a strategy should be implemented by governmental, non-governmental agencies and supported by donor agencies. The private sector can play an effective role, if it believes in the benefits, it can enjoy from a more balanced regional growth.

a. Sectoral policies

Table 8: The percentage distribution of educational status by region

Region	Illiterate	Reads and Writes	Intermediate	University Education
Greater Cairo	17.6	18.3	21.7	31.9
Alexandria	4	5.6	6.35	9.11
Delta Region	36.96	2.98	3.5	3.2
Canal Region	1.9	38.1	38.05	30.9
Upper Egypt	39.6	35.1	30.4	24.9

Source: Authors' calculations based on the Population Distribution (Age 10+) According to Educational Status in Governorates, Census 2006

Sector-specific policies should focus on removing distortions that impede growth in different sectors given the large productivity differentials between agriculture and other sectors as well as formal and informal sectors in Upper Egypt (Hassan and Kandil, 2014).

1. The development of an extensive system for employment and income generation schemes in rural Upper Egypt.

The expansion of farm and non-farm activities in Upper Egypt is important to increase living standards in rural areas. This means:

- The adoption of several measures to facilitate access of the poor in rural areas to productive employment through provision of credits and institutional help. Self employment may not be a mean for alleviation poverty, if not achieving sustainability and outreach. The lack of assets is to a large extent a constraint against productive employment for the poor. Meanwhile it is important to enhance the private sector to improve the contract system.
 - In general there is a need to establish at a decentralized level a transparent and efficient tendering and bidding system to improve the living conditions workers in rural areas.
2. Increasing output and employment in formal (SME's)
This can be achieved by shifting the structure of investments and the pattern of modern sector growth to concentrate more heavily than in the past, on more labor absorbing sectors, specifically modern small- and medium-scale enterprises. A wide range of policies is needed to stimulate and support the expansion of modern small- and medium-scale enterprise such as:
 - a. Support entrepreneurship development programs.
 - b. Improve access to finance for the poor as well as non-financial services such as improvement of production methods, introduction of new technologies, skills training, business management training, and expansion of marketing channels.
 - c. Encourage linkages between enterprises of different sizes and across different sectors.

3. Upgrading the in formal economy

With the relatively high share of informal sector in rural Upper Egypt it is important to adopt several measures by the government as well as by the business sector (formal small and medium sector) for upgrading this sector. The following are the main policies suggested to improve the status of workers in this sector:

- a. Strengthening the informal information base
- b. Providing social protection (health and social) for informal workers through NGOs
- c. Increasing access to financial services and better marketing opportunities through strengthening the financial intermediaries and micro finance in Upper Egypt
- d. Promoting industrial and manufacturing activities and

encouraging the use of improved technologies as informal activities are mainly concentrated in trade and services

- e. Increasing linkages with formal economy in Upper Egypt and Cairo through subcontracting and franchising system, and with the rural economy especially through rural non-farm activities in Upper Egypt
 - f. Improving infrastructure in poor rural Upper Egypt to support informal economy (UNDP, ILO, 1997).
4. Employment intensive approaches for public investment programs

In order to introduce employment objectives into investment programs and to absorb seasonal and temporary workers in Upper Egypt, regional labor-based approaches are recommended. Cost-effectiveness, technical feasibility and quality standards, alongside economic and social sustainability, have become the criteria for the choice and application of labor-based methods.

- b. Micro level
 - Non-governmental organizations can play an important role in increasing available employment opportunities for the poor, improving returns to their returns, and enhancing the conditions of their employment. This requires multi-faceted strategies, emphasizing self-employment and micro finance through financial and non financial support.
 - NGOs can also play an important role in improving the educational skills of workers in Upper Egypt through different kinds of formal and informal training.
 - Improving entrepreneurship skills to improve the status of self-employed by achieving accessibility and outreach to their activities through micro level support.
 - Income maintenance payment by the Ministry of Social Affairs as well as non-governmental organizations for workers in agriculture can be an immediate solution for those, who lost their occasional or temporary jobs. In addition the provision of unemployment benefits as a component of an employment promotion program by providing unemployed in agriculture activities with vocational training through contracting between Ministry of Social Affairs and the Social Fund for Development can be a solution to increase incomes of the unemployed in the long run.

REFERENCES

- Ali, A., Elbadawi, I. (2000), Labor Market and Poverty in the Arab World: Some Preliminary Results, The Seventh Annual Conference of the Economic Research forum for the Arab Countries, Iran and Turkey 9ERF): Jordan, 26-29 October. 2000. p. 1-19.
- Ames, W., Brown, W., Devarajan, S., Izquierdo, A. (2001), Macroeconomic Policy and Poverty Reduction. Washington, DC: IMF - World Bank.

- Assaad, R., El Hamidi, F., Ahmed, A.U. (1999), The Determinants of Employment Status of Egypt. International Food Policy Research Institute, Discussion Paper Briefs, Discussion Paper, 88. p1-2.
- Briggs, V. (1987), Human resource development and the formulation of a national policy. *Journal of Economic Issues*, 21, 1207-1240.
- CAPMAS. Central Agency for Public Mobilization and Statistics. (2012, 2013, 2014 and 2015), Egypt in Figures, Arab Republic of Egypt.
- CAPMAS. Central Agency for Public Mobilization and Statistics. (Different Issues). *Statistical Yearbook*, Arab Republic of Egypt.
- CAPMAS. Indicators of Poverty, The Panel Household Income, Expenditure, and Consumption Survey (HIECS Survey), 2005-2008, 2010/2011, 2012/2013.
- CAPMAS. Labor Force Sample Survey, (LFSS), 2001, 2008, 2012, 2013.
- Census. (2006), Population Distribution (Age 10+) According to Educational Status in Governorates. Capmas. Central Agency for public mobilization and statistics.
- Egypt Network for Integrated Development. (2015), A Profile of Poverty Across Egypt and Recommendations, Policy Brief, 2015. p1-9.
- El-Ehwany, N., El-Laithy, H. (2001), Poverty-employment and policy – Making in Egypt, ILO, Towards Decent Work in North Africa, No. 1, Area Office in Cairo North Africa Multi-Disciplinary Advisory Team, A Country Profile. p1-66.
- El-Laithy, H. (2014), Poverty and Inequality Metrics. Unpublished Memo. p1-31.
- ELMPS. (2012), Egypt Labor Market Panel Survey. Economic Research Forum.
- Hassan, M., Kandil, M. (2014), Employment fluctuations and sectoral shifts in Egypt: Testing the public/private sectoral shifts hypothesis. *International Journal of Development Issues*, 13(2), 129-154.
- ILO. (1998), Employment Intensive Program. Geneva: International Labour Office.
- Kedir, A. (2005), Understanding urban chronic poverty: Crossing the qualitative and quantitative divide. *Environment and Urbanization*, 17(2), 43-54.
- Ministry of Finance, Administrative Machinery Budget, 2014.
- Ministry of Planning and Follow-Up and Administrative Reform, 2013/2014.
- Ministry of Planning. (2012), Socio-Economic Plan for the Fiscal Year 2012/2013.
- Nassar, H. (2009), Growth, economic policies and employment linkages. *Research Country Paper*, p1-43.
- Nassar, H., El-Laithy, H. (2000), Labor Market, Urban Poverty and Pro-Poor Employment Policies, Working Paper No. 2036. Faculty of Economics and Political Sciences, Cairo University.
- Oberai, A., Singh, H. (1983), Causes and Consequences of Internal Migration: A Study in Indian Punjab. New Delhi: Oxford University Press.
- Squire, L. (1981), Employment Policy in Developing Countries: A Survey of Issues and Evidence. New York: A World Bank Research Publication, Oxford University Press.
- Tadele, F. (2004), Urban Poverty Studies in Ethiopia – Reflection on the Methodological Approaches”, Paper Prepared for the Chronic Urban Poverty Workshop, 16-18 August 2004, Addis Ababa, Ethiopia.
- UNDP, ILO. (1997), Job Creation and Poverty Alleviation in Egypt Strategy and Programs. Geneva: UNDP, ILO.
- Wahba, J. (2002), Labor mobility in Egypt: Are the 1990s any different from the 1980s? In: Assaad, R., editor. *The Egyptian Labor Market in an Era of Reform*. Cairo: An Economic Research Forum Edition. 2002. p. 257-286.
- World Bank, ARE. (2002), Poverty Reduction in Egypt, Diagnosis and Strategy. Washington, DC: World Bank.
- Wratten, E. (1995), Conceptualizing urban poverty. *Environment and Urbanization*, 7(1), 11-38.