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Demographic and Socio-Economic Characteristics of the Population of Unplanned Areas in Greater Cairo

By

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Introduction

Unplanned housing areas have recently received great attention, of both researchers and the Egyptian government. These areas have been relatively neglected for a long time. Current studies tend to focus on the social and economic aspects of the phenomenon rather than on its demographic dimensions, and studies dwell more on the causes than on its consequences. Wherever demographic processes are considered, rural-urban migration is generally treated as the key element. Gedik, 1990, defined the unplanned housing as squatter housing, he said"It is attractive to migrants and others in low-income and insecure employment. Improvements in squatter housing locations are possible when spatial location problems are not a concern. Policies concerning squatter housing have changed over time. Most government policies accept the inevitability of squatter housing and seek to improve and upgrade housing and public service conditions. The literature on squatter housing spans a variety of forms of housing. The variety of forms is due to the variety of levels of development within countries, changes over time, and changes toward a more permanent population in the labor force rather than temporary migrants. The forms of

housing are identified as legal-formal residential housing, which excluded slums, residential slums, squatter housing, and other residential housing".

Virtually no attention is being given to the effects of differential fertility and mortality on environment in urban areas resulting from the reclassification of urban settlements. History, land tenure, household's conditions, population and their living, health, and nutrition conditions in the unplanned areas are handled by Rugh , 1979. Life patterns among households' members living in the unplanned areas were examined by Nadim et al. Nadim , Mehanna, and Nixon , 1980. Determinants that affect creation and development of unauthorized neighborhoods were identified by Fouad ,1995 using Factor analysis technique. Also life patterns among women living in squatter settlements were discussed by Erman, 1996.

The income generation and social development activities for female adolescents living in a garbage community on the outskirts of Cairo, Egypt is described by Assad et al. 1993. The activities were implemented by the Association for the Protection of the Environment (APE), a secular non-governmental organization that managed a composting plant in Moqattam and initiated a variety of social development activities. The Health and development Committee coordinates health, literacy, and income generation programs. APE aims are to ameliorate the unhealthy living conditions among the Moqattam residents and to achieve higher productivity from the traditional recycling process.

Life patterns among women living in El-Kassabgy area is examined by Metwali, 1994. Most people living in that area are rural migrant, and most houses are occupied by the lower middle class. Housing is not connected to a sewage system and its quality is low. Most women are not engaged in waged labor. High fertility

is indicated, (total fertility rate is 5.2 child per woman), The first three age groups reach the maximum level of fertility and the mortality level reach the maximum level.

the relationship between population growth, sustainable development, and the environment in Egypt is discussed by Mostafa, 1994. The rapid rate of population growth of 2.3% will create resource problems, such as population pressure on the land, higher population density around industrial areas, and maldistribution of population in urban areas

Objectives of the Study:

The main objectives of the present study are to explore the dynamics of unplanned areas not only by focussing on the social and economic aspects but also by making particular reference to the demographic components of their growth. The following sub-objectives are to be considered.

- The identification of the demographic and socio-economic characteristics of the population living in the unplanned areas as well as their housing characteristics. These will be compared with those of the planned areas in greater Cairo with the aim of reflecting the socio-economic situation of the population of the unplanned areas.
- Highlighting the negative effects of existing unplanned areas with it's housing and population characteristics in planned areas.
- The reclassification of the unplanned areas according to their population and housing characteristics. Recommendations towards removement and/ or improvements will be considered.

Methodology:

The demographic and socio-economic characteristics of the population in the unplanned and the planned areas are represented by some indicator variables

such as: the total fertility rate (TFR), the number of the children ever born (CEB), the age at first birth, the highest educational level, and the work status.

On the other hand the socio-economic level of the population is determined by housing characteristics of these areas. These characteristics are represented by some socio-economic indictor variables such as: having electricity, source of drinking water, flooring type, persons per sleeping room, in each housing unit

Variations between population in unplanned and planned housing areas of Greater Cairo are measured. ***Independent Samples T-Test*** is used as a multivariate analysis procedure to measure the degree of variability among variables.This procedure tests the null hypothesis that the data is a sample taken from a population in which the mean of a test variable is equal in two independent groups of cases. It is similar to the analysis of variance (ANOVA) procedure, but is restricted to the comparison of 2 groups. It computes t-statistics for testing the significance of a difference in means for independent samples. Both equal and unequal variance t values are provided, as well as the level in the equality of variance test.

Cluster Analysis is used to differentiate between the status of the unplanned areas in Greater Cairo in connection with the studied variables.

The Cluster routine produces hierarchical clusters of items based on distance measures of dissimilarity. The items being clustered are usually cases from the working data file, and the distance measures are computed from their values for one or more variables. The procedure attempts to identify relatively homogeneous groups of cases (or variables) based on selected characteristics, using an algorithm that starts with each case (or variable) in a separate cluster and combines clusters until only one is left. Statistics are displayed at each stage to help selecting the best clustering procedure. Also ***Multinomial Logistic***

Regression is used to classify subjects based on values of a set of predictors. This type of regression is similar to logistic regression, but it is more general because the dependent variable is not restricted to two categories. A multinomial logistic model is fitted for the full factorial model, or a user specified model. Parameter estimation is performed through an iterative maximum likelihood algorithm.

According to the data file type, the *SPSS* (Statistical Package for Social Science) and *ISSA* (Integrated System for Survey Analysis) are used. The unique work in developing tables for multiple individuals provided by ISSA was behind using such package.

Study Scope and Data Sources:

The 1995 Egypt Demographic and Health Survey (EDHS) is the main source of information for the present study. Greater Cairo governorates (Cairo, Giza and Kalyubia) with 11,10, and 9 unplanned areas respectively determine the study geographic scope. The number of unplanned areas in Greater Cairo is equal to 30 with 528 successful interviewers compared with individuals from a total of 62 areas in Greater Cairo with 2200 successful interviewers.

II: Characteristics of the Household Population

Studies of population characteristics are very important. They provide planners with data needed in different fields. In relation to the present study they provide a useful aid for identifying the negative effects of existing unplanned areas in planned areas.

2.1 Age and Sex Composition

Tables 2.1.1 and 2.1.2 present the percent distributions of population[1] in the planned and unplanned areas by age, residence and sex.

Table 2.1.1Percent distribution o Household Population by age, residence, and sex in the planned areas, Egypt, 1995.

Age Group	Urban			Rural			Planned Areas		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	12.4	12.5	12.5	13.8	14.0	13.9	12.6	12.7	12.7
5-9	13.4	13.2	13.3	14.3	12.3	13.3	13.5	13.1	13.3
10-14	12.7	12.5	12.6	13.2	14.4	13.8	12.8	12.8	12.8
15-19	11.9	11.3	11.6	9.3	11.8	10.6	11.5	11.4	11.5
20-24	8.0	8.5	8.2	7.8	7.7	7.8	7.9	8.3	8.1
25-29	6.7	8.4	7.5	9.1	7.9	8.5	7.1	8.3	7.7
30-34	8.1	7.9	8.0	7.0	7.1	7.6	7.9	7.7	7.8
35-39	5.7	7.4	6.6	6.3	5.9	6.1	5.8	7.2	6.5
40-44	6.5	5.4	6.0	4.7	4.5	4.6	6.2	5.3	5.7
45-49	5.0	4.7	4.9	2.7	2.6	2.6	4.6	4.4	4.5
50-54	3.1	2.3	2.7	2.1	3.2	2.6	2.9	2.5	2.7
55-59	2.1	2.2	2.2	1.8	2.6	2.2	2.1	2.3	2.2
60-64	1.8	1.8	1.8	3.3	1.9	2.6	2.1	1.8	1.9
65-69	1.3	1.0	1.2	1.6	1.8	1.7	1.4	1.2	1.3
70-74	0.7	0.5	0.6	1.0	1.1	1.0	0.7	0.6	0.6
75-79	0.5	0.1	0.3	0.8	0.1	0.4	0.6	0.1	0.3
80+	0.2	0.2	0.2	1.2	1.2	1.2	0.4	0.4	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

For the planned areas: Large number of the population less than 15 years of age is indicated. The proportion of the population aged 0-4 years is smaller than the proportion aged 5-9 years, decline in fertility is reflected since the late 80s. The differences between urban and rural areas in the age distribution are evidence of lower recent fertility in urban areas compared with rural areas.

Table 2.1.2 Percent distribution of household population by age, residence, and sex in the unplanned areas , Egypt, 1995.

Age	Urban			Rural			Total		
Group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	12.4	12.5	12.5	13.8	14.0	13.9	13.2	13.5	13.0
5-9	13.4	13.2	13.3	14.3	12.3	13.3	14.0	13.5	13.8
10-14	12.7	12.5	12.4	13.2	14.4	13.8	12.9	12.7	13.3
15-19	11.9	11.3	11.6	9.3	11.8	10.6	11.9	11.3	11.6
20-24	8.0	8.5	8.2	7.8	7.7	7.8	7.8	8.2	8.0
25-29	6.7	8.4	7.5	9.1	7.9	8.5	7.3	8.0	7.7
30-34	8.1	7.9	8.0	7.0	7.1	7.6	7.3	7.3	7.3
35-39	5.7	7.4	6.6	6.3	5.9	6.1	5.7	6.7	6.2
40-44	6.5	5.4	6.0	4.7	4.5	4.6	5.3	5.1	5.2
45-49	5.0	4.7	4.9	2.7	2.6	2.6	4.7	4.5	4.6
50-54	3.1	2.3	2.7	2.1	3.2	2.6	3.0	2.4	2.7
55-59	2.1	2.2	2.2	1.8	2.6	2.2	2.1	2.2	2.1
60-64	1.8	1.8	1.8	3.3	1.9	2.6	1.9	2.0	2.0
65-69	1.3	1.0	1.2	1.6	1.8	1.7	1.4	1.1	1.2
70-74	0.7	0.5	0.6	1.0	1.1	1.0	0.8	0.7	0.8
75-79	0.5	0.1	0.3	0.8	0.1	0.4	0.4	0.1	0.3
80+	0.2	0.2	0.2	1.2	1.2	1.2	0.4	0.4	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

As for the unplanned areas the data reflect that these areas suffer from the apparent disregard of family planning programs despite of the government efforts in the past years. Table 2.1.2 indicates that 52% of the population in the unplanned areas is less than 19 years old.

2.2 Household Composition:

Household composition and characteristics are often associated with socio-economic differences between households. For example, female-headed households are usually poorer than households headed by males. In addition, the size and composition of households affect the allocation of financial resources among household members, which in turn influence the overall well-being of individuals.

Household size is also associated with crowd ness in the dwelling, which may lead to unfavorable health conditions. Distribution of the households in planned areas by sex of the head of the household, the number of household members, and family type is presented in Table (2.2.1).

Table 2.2.1 Percent distribution of households by sex of head of household and household size, according to urban-rural residence for planned areas, Egypt, 1995.

Characteristics	Urban %	Rural %	Total %
Household Headship			
Male	86.4	87.3	86.8
Female	13.6	12.7	13.2
Number of usual members			
1	6.8	3.6	5.2
2	10.7	9.4	10.1
3	21.0	14.6	17.8
4	18.2	17.5	17.9
5	15.7	15.7	13.7
6	13.3	11.5	12.4
7	7.4	14.6	11.0
8	4.2	7.3	5.8
9+	4.7	8.9	6.8
mean	3.5	4.1	3.8
Family structure			
Nuclear	83.2	75.2	79.2
Single person	6.3	1.3	3.8
Extended	10.5	23.5	17.0
Total	100.0	100.0	100.0

Female-headed households constitute almost 13 percent of households. 3.8 persons on average are living in the household in the planned areas; around one in three households have fewer than 4 members, while two in five households have 6 or more members. Households in rural areas are larger than households in urban areas. For example, fewer than one in ten urban households have 8 or more members compared with one in four rural households.

As for family structure in the planned areas, the majority of households are nuclear 79 percent. Less than 4 percent of the households are single persons (single, divorced or widowed persons). Only 17 percent of the households are extended family type.

A remarkable variation in these proportions by residence is reflected especially with single and extended families where there are 83 percent of the household of these types in the urban areas compared with 75 percent in the rural areas. The proportion of single person households in urban areas is 5 times that in the rural areas. There is noticeable difference between extended families in urban and

rural areas; where their percent in rural areas is 2.2 times that in urban areas.

Table 2.2.2 presents the distribution of households in the unplanned areas by sex of the head of the household and the number of household members.

Table 2.2.2 Percent distribution of households by sex of head of household and household size, according to urban-rural residence for unplanned areas, Egypt, 1995.

Characteristics	Urban %	Rural %	Total %
Household Headship			
Male	89.6	91.7	89.9
Female	10.4	8.3	10.1
Number of usual members			
1	4.6	4.1	4.4
2	9.5	5.2	7.4
3	13.1	11.2	12.2
4	18.9	11.2	15.1
5	19.5	14.6	17.1
6	21.2	16.0	18.6
7	14.5	22.6	18.6
8	8.4	10.1	9.3
9+	5.3	13.1	9.2
mean	6.6	7.2	7.01
Family structure			
Nuclear	38.6	11.8	25.2
Single person	2.9	0.0	1.5
Extended	58.5	88.2	73.5
Total	100.0	100.0	100.0

The household head is female in 10 percent of the households in the unplanned areas. Their percent in urban areas are 1.3 times their percent in rural areas. There are on average 7 persons in the household in the unplanned areas.

Around one in four households have fewer than 4 members, while two in five households have 6 or more members. This indicates that these areas are suffering from crowding and are large in size.

The majority of households are extended families, 73 percent. About 2 percent of the household are single person families, while 25 percent of them are nuclear families. Variations by household composition, and by residence are great. About 40 percent of the urban households are nuclear families compared with 12 percent in rural areas (3 times) and 60 percent are extended families in urban areas compared with 88 percent in the rural areas (1.4 times). This indicates that most of the households in the unplanned areas are composed of extended families

followed by nuclear families and finaly single households.

2.3 Educational Level of Household Members:

The educational level of household members is one of the most important indicators, it is associated with many phenomena including reproductive behavior, use of contraception, and the health of children. Educational attainment among spouses, school attendance among children and adults will be discussed.

2.3.1 Educational Attainment among Spouses

Percent distribution of household population by age, sex, and level of education for both planned and unplanned areas are presented in Tables (2.3.1) and (2.3.2)

Table 2.3.1 Percent distribution of the de-facto household population aged 6 and over by highest level of education attended, according to age, residence and region in the planned areas, Egypt, 1995

Background Characteristics	Level of education				Median number of years
	No education	Primary	Secondary	Higher	
Age group					
6-9	5.8	94.0	0.6	0.0	1.7
10-14	4.1	43.8	52.1	0.0	6.1
15-19	5.5	15.5	70.7	8.3	9.9
20-24	4.6	16.3	57.9	21.2	12.3
25-29	7.7	17.0	55.8	19.5	12.4
30-34	11.9	23.3	44.5	20.3	12.0
35-39	14.6	23.5	40.4	21.5	12.0
40-44	16.3	25.9	33.4	24.4	9.4
45-49	26.7	30.9	23.0	19.3	6.4
50-54	30.8	27.6	27.6	14.0	6.2
55-59	33.0	29.5	18.8	18.7	6.2
60-64	39.5	28.8	16.0	15.7	4.4
65+	52.9	25.6	9.5	12.1	0.0
Urban-Rural residence					
Urban	10.6	32.5	41.5	15.4	8.0
Rural	22.6	39.2	34.1	4.2	4.8
Region					
Cairo	10.1	30.8	41.4	17.8	6.8
Giza	14.3	36.0	40.1	5.3	4.1
Kalyubia	23.6	33.2	30.2	4.2	6.4
Total	13.2	33.9	39.9	13.0	6.9

For the planned areas, we notice large variations in educational attainment by residence and regions. The median number of schooling years for urban areas is 8 years, almost 1.7 times the corresponding value in rural areas. Cairo comes first (about 7 years) while Giza has the lowest median number of schooling years (only 4 years). Kalyubia is in between. The median number of schooling years in Cairo

is 1.7, and 1.1 times the median number in Giza and Kalyubia.

All levels of education indicate significant differences in the rural rather than in the urban areas at level of significance $\alpha = 0.05$

Table 2.3.2 represents the educational attainment of household population of the unplanned areas.

Table 2.3.2 Percent distribution of the de-facto household population aged 6 and over by highest level of education attended, according to age, residence and region in the unplanned areas, Egypt, 1995

Background Characteristics	Level of education				Median number of years
	No education	Primary	Secondary	Higher	
Age group					
6-9	12.0	80.7	0.1	0.0	0.9
10-14	10.3	37.9	49.4	0.0	5.2
15-19	10.9	16.4	60.9	7.7	8.1
20-24	18.6	12.5	50.4	18.5	8.4
25-29	24.2	18.4	43.1	14.4	4.0
30-34	28.1	23.2	34.6	14.1	3.1
35-39	31.4	29.1	26.1	13.4	2.3
40-44	35.3	32.5	22.0	10.0	1.1
45-49	45.2	32.7	11.7	10.6	0.0
50-54	50.5	36.3	15.2	8.0	0.0
55-59	51.0	40.9	13.2	5.0	0.0
60-64	64.4	45.5	6.1	4.0	0.0
65+	70.4	48.5	5.9	3.8	0.0
Urban-Rural residence					
Urban	20.0	32.3	37.6	10.1	5.3
Rural	46.3	32.8	19.7	1.3	1.0
Region					
Cairo	18.8	31.3	37.8	12.1	6.3
Giza	31.1	33.9	22.3	1.7	2.2
Kalyubia	37.9	28.5	17.0	0.9	1.2
Total	35.4	32.4	33.9	8.3	5.2

Variation in educational attainment by residence and region are also great. The median number of years of schooling for urban areas is 5 years, almost 5 times that in rural areas. Cairo comes first (about 6 years) while Kalyubia comes last (only 1 year), and Giza in between.

Levels of educational show significant differences in rural rather than in urban areas at level of significance $\alpha = 0.05$, however, there is no significant differences in the primary level between urban and rural.

2.3.2 School Attendance among Children and Young Adults

Percentage distributions of the household population aged 6 to 24 years who are currently attending school according to age, sex, urban-rural residence in the planned and the unplanned are presented in Tables (2.4.1) and (2.4.2. Gender differentials in the attendance data show that boys are generally more likely to attend schools than girls especially in the unplanned areas 95 percent of boys at age 6-10 are attending school, while only 88 percent of girls in the planned areas compared with 93 percent of boys aged 6-15 are attending schools, while only 76 percent of girls are attending.

2.4.1 Percentage of the de facto household population age 6-24 years who are currently attending school, by age group, sex, urban-rural residence and region, in the planned areas, Egypt, 1995

Age	Male			Female			Total		
Group	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6-10	95.0	86.3	95.1	91.6	42.3	88.1	93.4	87.7	92.0
11-15	89.9	48.1	85.4	89.9	35.1	85.6	89.9	41.8	85.6
6-15	92.7	76.2	90.9	90.6	38.2	86.7	91.7	60.9	88.8
16-20	66.2	40.4	63.3	62.4	23.5	59.7	64.2	33.8	61.5
21-24	27.7	0.0	26.2	20.4	19.0	20.3	24.1	9.3	23.3

Attendance rates in urban areas were more than twice values in rural areas.

Percentages of the household population aged 6 to 24 years who are currently attending school according to age sex, urban-rural residence in the unplanned areas are given in table (2.4.2). 70.5 percent of boys aged 6-10 are attending schools, compared with only 53.8 among girls (almost 1.2 times).

Table 2.4.2 Percentage of the de facto household population age 6-24 years who are currently attending school, by age group, sex, urban-rural residence and region, in the unplanned areas, Egypt, 1995

Age	Male			Female			Total		
Group	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6-10	71.3	68.6	70.5	62.4	34.2	53.8	66.9	51.4	62.2
11-15	61.0	43.6	55.9	51.5	13.5	39.7	56.3	28.6	47.8
6-15	66.3	56.8	63.5	57.1	24.0	46.9	61.7	40.4	55.2
16-20	23.4	7.6	27.1	9.6	2.2	4.6	16.5	4.9	15.9
21-24	6.6	1.8	9.2	0.8	0.3	0.6	3.7	1.1	4.9

The school attendance in the planned areas is much higher than that in the unplanned areas as well as the gap in attendance rates for boys and girls in favor of the former.

2.4 Housing Characteristics

Percent distributions of households by selected housing characteristics for planned and unplanned areas are presented in tables (2.5.1) and (2.5.2) and they include source of drinking water, type of sanitation facilities, type of flooring, and the number of persons per sleeping room. Standard of living and the socioeconomic status of households will be reflected. It is indicated that almost 99 percent of households in the planned areas have electricity. Differentials in the availability of electricity by urban-rural residence and place of residence are small. More than eight in ten households have access to piped water, mainly within their dwelling. Urban households are more likely to have access to safe drinking water than rural households (almost 1.2 times). Among urban households, 92 percent have piped water in their residence compared with only 58 percent in rural areas almost 1.6 times.

For most households in the planned areas, the source for their drinking water is within their dwelling or not far from their residence. Overall, 89 percent of households obtain drinking water in their dwelling or within 20 minutes of the residence. Urban households tend to be closer to the source of water than rural areas; 96 percent of households in urban areas report that the source for drinking water is in the house or within 20 minutes of the dwelling compared with 81 percent of rural households (almost 1.2 times). These percentages vary by place of residence, where the nearest households that obtained drinking water in their dwelling or within 20 minutes is in Cairo 96 percent (almost 1.1 times), while the Farthest is in Giza (86 percent).

Table 2.5.1 Percent distribution of households by housing characteristics, according to urban-rural residence and place of residence in the planned areas, Egypt 1995

Characteristics	Urban	Rural	Place of residence			Total
			Cairo	Giza	Kalyubia	
Electricity						
Yes	98.8	97.4	98.3	90.6	95.8	98.6
No	1.2	2.6	1.7	9.4	4.2	1.4
Source of drinking water						
Piped into residence	91.9	57.8	95.7	53.7	70.7	86.7
Public tap	5.4	16.7	3.4	14.2	15.3	7.1
Public well	0.4	15.6	0.0	13.6	4.4	2.7
Nile/canal	0.1	7.3	0.0	0.3	0.1	1.2
Other	2.3	2.6	0.9	5.5	2.8	2.4
Time to water source						
Water within 20 minutes	95.9	81.3	96.2	85.5	87.0	88.7
Sanitation facility						
Modern flush toilet	63.8	7.8	87.7	24.7	51.8	51.6
Traditional water/tank flush	1.4	0.5	1.1	1.7	2.0	1.2
Traditional water/bucket flush	33.4	68.2	10.1	43.2	32.9	39.7
Pit toilet/latrine	0.9	20.8	0.4	16.5	9.8	5.4
No facility	0.4	2.6	0.5	1.9	0.6	2.1
Flooring						
Earth/sand	2.3	22.4	2.6	52.3	28.7	5.3
Parquet/polished wood	0.3	0.5	3.8	0.6	0.3	0.2
Ceramic tiles	0.6	1.3	1.8	0.3	0.2	0.6
Cement tiles	83.1	50.5	76.6	31.8	44.1	78.1
Cement	9.6	23.6	10.1	12.8	23.6	12.2
Wall-to-wall carpet	3.1	1.2	3.6	1.8	2.6	2.7
Other	1.0	0.6	1.6	0.3	0.4	0.9
Persons per sleeping room						
1-2	60.7	50.5	67.6	48.0	56.7	59.2
3-4	32.1	41.1	26.2	38.3	34.7	33.5
5-6	5.4	5.2	4.4	9.4	6.6	5.3
7+	1.8	3.1	1.7	4.2	2.0	2.0
Mean	2.7	3.8	2.7	3.3	3.1	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

More than half of the households in the planned areas have a modern flush toilet and about four in ten of households have traditional flush toilets. Five percent use a pit or latrine and only 2 percent report no toilet facilities. There are differences in the type of toilet facilities available to households by both urban-rural residence and place of residence. Households in urban areas are about equally likely to have a modern flush toilet (64 percent, 8 times) or a traditional flush toilet (33 percent). Only 1 percent of urban households use a pit or latrine or have no toilet facilities. In comparison, 21 percent of rural households use a pit or latrine (21 times), and 3 percent have no toilet facilities.

Most households in Cairo have a modern flush toilet 88 percent and 10

percent of the remaining have traditional toilet. In Kalyubia the same pattern is found where most households have a modern flush toilet 52 percent and around 33 percent of the households have traditional toilet. While Giza is different: most of the households have traditional toilet 42 percent and only 25 percent of households have a modern flush toilet.

With regard to flooring, three quarters of households live in dwelling with cement tile floors, an additional 12 percent have a cement floor, and only 5 percent have earth or sand floors. There are substantial differences in the flooring materials in urban and rural dwellings. Among urban households, 83 percent have a cement tile floor (almost 1.6 times) compared with 51 percent of rural households. Conversely, 22 percent of rural households live in dwellings that have earth/sand floor (11 times) compared with only 2 percent of urban households.

The same type of flooring is found by place of residence. where 77 percent of households with cement tile floor is in Cairo. This percent decreases to 44 percent in Kalyubia and 32 percent in Giza. While 3 percent of households in Cairo have earth/ sand flooring material, this percent increases to 29 percent: in Kalyubia 52 in Giza.

Information on the number of persons per sleeping room is collected in the EDHS-95 questionnaire in order to provide a measure of crowding. It is indicated that 60 percent of households have one or two persons per sleeping room and one-third have three to four persons per sleeping room. The overall mean is 3.3 persons per sleeping room. Rural households are more crowded than urban households. The mean number of persons per sleeping room is 2.7 in urban areas compared with 3.8 persons in rural areas (almost 1.4 times).

The mean varies from 2.7 persons per sleeping room in Cairo to of 3.3 in Giza.

Giza is the most crowded region in Greater Cairo. Distribution of households by selected housing characteristics in the unplanned areas is presented in table (2.5.2). Overall, 91 percent of households in the unplanned areas have electricity. Differentials in the availability of electricity by residence are small. In urban areas, almost all households have electricity, and, in rural areas 83 percent of households have electricity.

Around eight in ten households have access to piped water, mainly within their dwelling. Urban households are more likely to have access to safe drinking water than rural households are (almost 1.8 times). Among urban households, 94 percent have piped water in their residence, and 3 percent obtain water from a public tap.

Almost 52 percent have access to piped water, primarily in their residence. Among the remaining rural households, the majority use public tap as source of drinking water in rural households.

For most households in the unplanned areas, the source for their drinking water is within their dwelling or not far from their residence. Overall, 86 percent of households obtained drinking water in their dwelling or within 20 minutes of the residence. Urban households tend to be closer to the source of water than rural areas; 91 percent of households in urban areas have drinking water in the house or within 20 minutes of the dwelling (almost 1.6 times) compared with 58 percent of rural households. This percent differs by residence, where the nearest households that obtained drinking water in their dwelling or within 20 minutes far is in Cairo 91 percent, while the Farthest is Giza 77 percent.

More than six in ten of the households in the unplanned areas have a traditional toilet and around three in ten of households have modern flush toilets. Five percent use a pit or latrine and only 2 percent have no toilet facilities. There are

differences in the type of toilet facilities available to households by both urban-rural residences. Households in urban areas are about equally likely to have a traditional toilet (60 percent) or a modern flush toilet (37 percent). Only 1 percent of urban households use a pit or latrine or had no toilet facilities. In comparison, 18 percent of rural households use a pit or latrine, and 6 percent had no toilet facilities.

Table 2.5.2 Percent distribution of households by housing characteristics, according to urban-rural residence and place of residence in the unplanned areas, Egypt 1995

Characteristics	Urban	Rural	Place of residence			Total
			Cairo	Giza	Kalybia	
Electricity						
Yes	97.1	84.3	97.4	82.9	92.3	90.7
No	2.9	15.8	2.6	17.1	7.7	9.3
Source of drinking water						
Piped into residence	93.9	51.9	91.0	73.3	73.8	82.1
Public tap	2.6	27.6	6.6	7.0	16.7	7.9
Public well	1.0	6.5	0.1	6.8	3.6	3.7
Nile/canal	0.5	8.6	0.0	3.4	6.0	2.0
Other	1.9	5.4	2.3	9.5	0.0	4.2
Time to water source						
Water within 20 minutes	90.8	58.3	91.2	77.4	80.2	85.9
Sanitation facility						
Modern flush toilet	37.1	7.6	35.7	32.5	32.5	29.9
Traditional water/tank flush	1.2	0.5	1.1	1.1	1.1	1.0
Traditional water/bucket flush	60.3	68.4	61.8	60.5	60.5	62.3
Pit toilet/latrine	0.7	17.6	0.1	1.9	1.9	4.8
No facility	0.6	5.9	1.3	4.0	4.0	1.9
Flooring						
Earth/sand	31.6	64.4	21.2	38.6	33.3	40.3
Parquet/polished wood	0.0	0.0	8.5	14.0	0.0	0.5
Ceramic tiles	0.0	0.0	4.4	4.7	0.0	0.5
Cement tiles	36.0	12.9	46.9	26.5	47.6	40.1
Cement	31.4	22.7	6.8	7.0	17.9	14.9
Wall-to-wall carpet	0.8	0.0	7.9	9.3	1.2	2.8
Other	0.2	0.0	4.4	0.0	0.0	0.8
Persons per sleeping room						
1-2	24.2	21.4	21.3	17.6	19.8	18.3
3-4	68.5	30.4	66.1	28.6	65.6	46.0
5-6	4.8	40.4	5.6	46.3	10.2	32.7
7+	2.5	4.8	7.0	7.5	4.4	3.0
Mean	3.8	5.2	3.1	5.1	3.7	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Most households in Cairo have a traditional toilet 62 percent while 36 percent of the remaining have modern flush toilets. In Kalyubia the same pattern is found where most households have traditional toilets 61 percent, and around 33 percent of the households have a modern flush toilet. The same is also found in Giza

where 65 of the households have a traditional toilet and around 20 percent have a modern flush toilet.

With regards to flooring materials it is found from table (2.5.2) that more than four in ten of households in the unplanned areas have earth/sand floor material and from the remaining 38 percent of the households have a cement tiles as a flooring material. Among urban households, 36 percent have a cement tile floor compared with 13 percent in rural households. Conversely, 32 percent of rural households live in dwellings that have earth/sand floor compared with 64 percent in urban households.

The same pattern of flooring is found by residence, where 47 percent of households with cement tile floor found in Cairo. This percent decreases to 46 percent in Kalyubia and continues decreasing to reach 27 percent in Giza. While 21 percent of households in Cairo have earth/ sand flooring material, this percent increases to 33 percent in Kalyubia and continues increasing to reach 39 in Giza.

Table 2.5.2 presents the tabulation for the unplanned areas about the number of persons per sleeping room. It is indicated that 46 percent of households have three or four persons per sleeping room, and one-third have five to six persons per sleeping room. The overall mean is 4.8 persons per sleeping room. Rural households are more crowded than urban households are. The mean number of persons per sleeping room is 3.8 in urban areas compared with 5.2 persons in rural areas.

By place of residence, the mean varies from 3.1 persons per sleeping rooms in Cairo to 5.1 in Giza. This lead to the fact that Giza was the most crowded region In Greater Cairo.

III: Classification of Population in Greater Cairo

3.1Cluster analysis indicators for unplanned areas groups:

As mentioned before, all the unplanned areas are divided according to the households and individuals' characteristics and then each category is classified according to the analysis into two clusters to obtain group profile. The summary of overall distribution of these groups is given below. This summary may help differentiating the relative proportions of the unplanned areas discussed in each cluster.

Cluster group	Percent of Households
Cluster 1: areas to be improved	47.1% of Households
Cluster 2: areas to be removed	52.9% of Households

a. Characteristics of cluster 1(areas to be improved,47.1% of households)

It is suggested that these areas could be improved. Some improved services are needed especially those related to infrastructure bases such as: water supply, sewerage, and electricity.... etc. These areas are mainly urban (85 percent) with qualified characteristics to join the planned areas. Most of the households' services are available; the majority have electricity, fewer of them have piped water and little number of the households have toilet facilities. The mean family size in these households is around 7.3 persons. Most of the household members are of medium to low education where 62 percent have completed primary or higher education compared with 38 percent with no education. They also are of medium to low standard of living. Women in these areas are of medium to high age and with medium education where 52 percent have completed primary and higher, while 16 percent with incomplete primary and 32 percent with no education. The areas that belong to this cluster are: El-Maedsa, Dar El-Salam, Bahtiem, El-

Massra El-Balad, Begaam, Boulak El-Dakrour, and El-Azeb.

b. Characteristics of cluster 2(areas to be removed,52.9% of households):

It is suggested that these areas must be removed according to its location within areas that are planned and provided with infrastructure. Most of these areas are mainly urban (only 15 percent in rural areas). These areas are characterized by several bad, low standard and unfavorable characteristics. The mean family size in these households is around 10.1 persons per room, which reflects how these households are suffering from crowd ness. Most of the household members are with low education where 68 percent have no education compared with 32 percent completing primary or higher, they also have low standard of living. Most of the households' services are not available, the majority have no electricity, less than 10 percent have piped water and less than 5 percent of the households have toilet facilities. Women in these areas are at young ages, and with low level of education. 58 percent with no education, 18 percent with incomplete primary and 32 percent have completed primary or higher. The areas that belong to this cluster are:El-Zawya El-Hamra (El-Hekr), Ather El-Nabi, El-Sahel, El-sakakini, Most of rural Giza & Kalyubia

3.2 Multinomial logistic regression model indicators: it is found that the population of Greater Cairo is divided into three main groups according to their characteristics.

First Group: population with low demographic and socio-economic characteristics and also low housing characteristics such as: large family size (6-8 persons per family), low education, low income, no electricity, no water supply, no sewerage, few households goods, high fertility (5-7 births per woman). This is the population of areas that ought to be removed.

Second Group: Population with medium demographic and socio-economic characteristics and also medium housing characteristics such as: medium family size (5-7 persons per family), low-medium education, low-medium income, electricity, water supply, no sewerage, few households goods, high fertility (4-6 births per woman). Such population is the population of the unplanned areas that suggested to be improved.

Third Group: Population with high demographic and socio-economic characteristics and also high housing characteristics such as: small family size (3-4 persons per family), high education, medium-high income, electricity, water supply, and sewerage, more households goods, low fertility (4-6 births per woman).

The results of this analysis, seem to agree with those resulted from cluster analysis. It can be found that:

- The unplanned areas suggested to be removed are located in the first group.
- The unplanned areas suggested to be improved are located in the second group.
- The planned areas are located in the third group

V: Main Findings and Recommendations:

- The population in the unplanned areas suffers from crowding, 52 percent of population in the unplanned areas are less than 19 years old.
- Higher percentages of younger age's population in unplanned areas may reflect higher fertility.
- The percent distribution of urban male population in unplanned areas is significantly different from the corresponding distribution in planned areas.

Comparison between the urban, rural male population aged 0-14, and 15-65

in planned and unplanned areas, reflect significant variation. While there was no variation between the population aged 65 and over in both planned and unplanned areas.

- Generally, the variation between the planned and the unplanned areas is highly significant with family mean size. Also, it is great by type of family.
- Variation in the educational level in the unplanned and planned areas is great. Percentage of members that have no education in the unplanned areas is 2.3 times the corresponding value in the planned areas. The percentage of members that have secondary education in the planned areas is 1.2 times than the corresponding value in the unplanned areas. Percentages of members that have higher education in the planned areas is 1.6 times the corresponding values in the unplanned areas.
- 87 percent of population in the planned areas have attended school compared with 65 percent in the unplanned areas. The examination of the changes in educational indicators over successive cohorts indicates that there had been substantial increases over time in the educational attainment in planned areas while that was in lower rate in unplanned areas.
- The median number of years of schooling is much lower in unplanned areas than in planned areas. The age group that reaches the maximum median number of years of schooling is 20-24 in the unplanned areas while it is 25-29 in the planned areas. This means that the unplanned society needs at least ten years of education to reach the educational level in the planned areas.
- There is no significant variation in having electricity between the urban planned and unplanned areas (99 percent), (97 percent), while there is significant variation between the rural planned and unplanned areas (97,84 percents respectively).

There is a significant variation in the mean number of persons per sleeping

room between the urban planned and unplanned areas. It is 2.7 persons per sleeping room in the urban planned areas compared with 3.8 persons in the urban unplanned areas at level of significance $\alpha = 0.05$.There is significant variation in the mean number of persons per sleeping room between rural areas. It is 3.8 persons per sleeping room in the rural planned areas compared with 5.2 persons in the rural unplanned areas.

Recommendations

This study indicates that the characteristics of either the population or housing in the unplanned areas in Greater Cairo are very much similar to those in rural areas. That could be consistent where the rural-urban migration was the main reason behind the creation and development of such areas. Rural migrants moved to Greater Cairo with their demographic and socio-economic characteristics. Such as higher rates of fertility and mortality, bigger sizes of families, bigger mean number of persons per sleeping room, lower levels of education, and housing conditions. Bad health conditions, lower allocation of financial and other resources among household members are expected. That will also negatively affect and is affected by the environmental issues.

Follow up and having accurate housing maps for the country may help detect early movements in unplanned areas in detail for each governorate as soon as it starts. That will save time, effort, and money spent either to improve lower levels of population characteristics or to remove or improve the unplanned areas. It is a problem that in the time countries run towards urbanization, Greater Cairo suffers from ruralization.

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