

# LIVING ARRANGEMENTS AND SOCIO-ECONOMIC CONDITIONS AMONG EGYPTIAN ELDERLY. THE DETERMINANTS OF LATE-LIFE FAMILY STRUCTURES

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## 1. INTRODUCTION

In recent decades, most countries have experienced unprecedented growth in the absolute number and proportion of older people (e.g. those aged 65 and over). The pace of ageing varies dramatically across countries, depending on the pace and timing of the decline in fertility (Hayutin, 2009). Global ageing is diversifying both individual lives and family formats, patterns of co-residence and roles, individual work lives and careers, as well as labour patterns, retirement rules and migration (Gratton and Scott, 2017; Lowenstein *et al.*, 2011). In most countries, the considerable increase in the number of older people has attracted academic and non-academic interest in emerging problems such as the intergenerational gap, old age care, dependent ageing populations and the new diffusion of inequalities. An increasingly important socio-economic aspect is the ageing of the older population itself—that is, the increasing percentage of those aged 80 and above among the elderly—which can increase the burden on public services in terms of health care and pensions for the elderly (Kinsella and He, 2009; Schwarz, 2003).

In the coming decades, the rate of ageing will be faster in developing countries than in developed countries; by 2050, most of the older people will live in developing nations. In many developing countries, a sharp incongruence has emerged between the ageing process and the social and institutional context within which ageing takes place. An increasingly ageing population is bringing a new tide of illness linked with old age, such as dementia and Alzheimer's disease. As Reher and Requena (2018) assert, the extent to which the situation of the elderly is similar in the developed world and in the developing world is unknown, but in both developed and developing countries, failing health, disability, chronic illness, and decreasing personal autonomy will become more

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prominent in late-life. Developing countries will therefore have less time to adjust to the consequences of the ageing trend. Because the needs associated with rapid ageing are less likely to be met in these areas than in others, the well-being of the elderly is at risk (World Health Organization, 2006; Shetty, 2012). Among developing countries, countries in the Middle East and North Africa (MENA) - albeit in different stages of the demographic transition - have shown exceptional growth in the young population and an increasing ageing population. Population ageing is a quite recent phenomenon: due to its higher fertility, the Region has experienced a slower pace of population ageing than in developing countries as a whole. As in MENA total population increases, so does its elderly population leading to a health problem that has significant repercussions for the cost and organization of health systems (Parkash *et al.*, 2015; Tabutin and Schoumaker, 2005). Compared to other regions of the world, research on older adults has been scarce in MENA and in the Arab region in general despite the trend towards ageing. In particular, there is a lack of knowledge on older adults' living arrangements and socio-economic conditions, as well as on the numerous implications of such changes (Hussein and Ismail, 2017; Sibai *et al.*, 2014; Bongaarts and Zimmer, 2002; Yount and Sibai, 2009; Angeli and Novelli, 2017).

This paper focuses on Egypt, currently the most populous Arab country with over 80 million people, making up 23 percent of the total Arab population. The country is facing the dual challenges of being both still young and rapidly transitioning. Egypt, along with other middle-income African countries (including Tunisia, Mauritius, Morocco, Algeria, and South Africa), is experiencing a great increase in the share of its population aged 65 and older. Population ageing is typically viewed as a minor concern in Egypt, as it is in MENA. For instance, similar to other developing countries, Egypt's health policies mainly focus on maternal and child health (Youssef *et al.*, 2014). However, in recent years, issues related to ageing have raised new questions and have attracted the attention of policy and decision makers. In the last few years, the Egyptian government has formulated public initiatives for the elderly, although the programmes often suffer from limited resources. In 2000, the Ministry of Social Affairs issued a manual that included elderly homes (around 80) all over the country (Gadallah, 2007). A national plan of action on ageing was implemented in 2007, and the National Committees for Ageing were established (Kronfol *et al.*, 2015; Sieverding and Selwaness, 2012). Other benefits for deprived families come from the Ministry of Social Affairs and from religious bodies and non-government organisations, but social protection remains weak. Other important efforts have recently been made, such as health insurance and pension system reforms by the Ministry of Finance<sup>2</sup> and pro-poor initiatives (Ahmed *et al.*, 2001; Cherkaoui *et al.*, 2009). The Public Strategy of Elderly Care (implemented in 2010) stipulates the production of databases and reports on ageing which focus on health and socio-economic conditions. Policies and laws for the rights of older women are dis-

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<sup>2</sup> Ministry Of Finance (2010). New Pension And Insurance Bill. Arab Republic Of Egypt. (<http://Www.Mof.Gov.Eg/>)

cussed and reviewed by the National Council for Women. But, as introduced, even though Egypt has a national strategy and a plan of action on ageing, there is no set plan on how to implement or finance it and the social protection system is not oriented toward the problems generated by an ageing population (Sibai *et al.*, 2014, 2016; UNFPA, 2010). Long term care provision in the country is likely to remain a 'family business' for some time to come. (Sieverding and Selwaness, 2012; Galal, 2003). Socio-economic conditions and health disparities in later life still receive little attention in Egypt; despite the prominence of the family as individuals' main source of support, studies of trends in living arrangements, intergenerational co-residence and other exchanges of support remain relatively rare (Yount and Agree, 2005).

This paper contributes to filling the gap in research on late-life conditions and living arrangements in Egypt. Our research questions refer to patterns and trends in living arrangements of the elderly in a gendered perspective. We focus on independent living (alone or with a spouse only) or co-residence (with descendants or other people) of the elderly, aiming at identify which respondents' characteristics are related to the individual living arrangement. In particular, we will identify the variables associated with the elderly family forms.

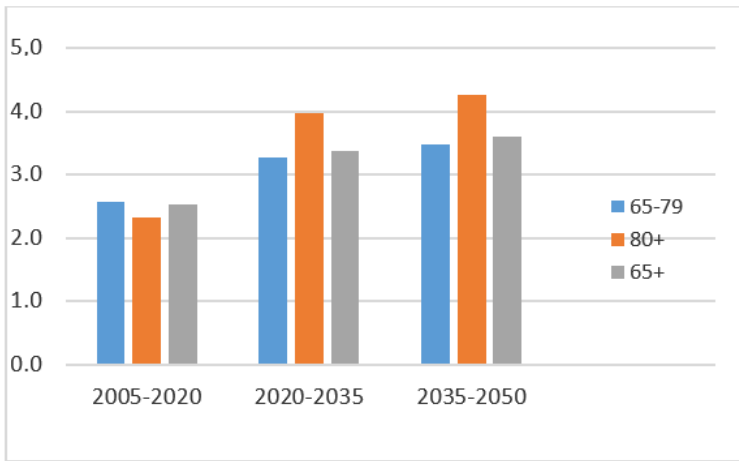
## 2. DRIVING FORCES OF THE AGEING PROCESS: DECLINES IN FERTILITY AND MORTALITY

Recent demographic trends in Egypt have been characterised by remarkable changes in fertility and survival rates. The most prominent historical factor in population ageing is the decline in fertility, which is a consequence of the success and popularity of family planning programmes in the country (Khalifa *et al.*, 2000). After experiencing a rapid decline since the 1980s, the fertility rate remained stagnant during the second half of the 1990s and then increased in more recent years. The average number of children per woman (total fertility rate, TFR) declined from 6.6 in 1990 to 3.0 in 2008 and then increased to around 3.5 in 2014 (UNICEF, 2015). The estimated TFR was 3.4 in the period 2010-2015 and 3.2 in the period 2015-2020 (United Nations, 2017).

Egypt also showed improvements in life expectancy levels ( $e_0$ ) for both men and women during the last decades of the twentieth century, as most Arab countries (Yount and Sibai, 2009). At the country level, average life expectancy has risen globally, reaching 70.8 years (68.7 and 73.0 for males and females respectively) by 2010-2015. The country has still a young population but the elderly population is the fastest growing sector (Awad and Zohry, 2005; Boggatz and Dassen, 2005; Sinunu *et al.*, 2009). In the coming years, the ageing process will produce substantial changes in the age structure of the population, with key consequences for household life and government duties (Boggatz *et al.*, 2010; Diamond-Smith *et al.*, 2015). United Nations (2017) population estimates and projections show that in Egypt the number of those 65 years and over will increase from 4.0 million in 2010 to 7.9 million in 2030 (4.8% and 6.6% of the total population in 2010 and 2030, respectively). Between 2030 and 2050 the ageing process is expected

to accelerate and the number of those 65 years and over will reach 16.2 million in 2050, 10.6 percent of the total population.

The number of oldest old, likely to be dependent, is growing: The percentage of people aged 80 and more on the total population will increase from 0.7 percent in 2010 to about 1.8 percent by 2050. As Figure 1 shows, the “double ageing” will be more intense after 2020, since the highest annual growth rate is found with the oldest age group (80 and over).



*Figure 1* – Average annual increment rate (%) of population 65 and over by age classes. Egypt 2005–2050. Note: The average annual growth rates for all of the age classes considered here are calculated on the assumption that growth is continuous. Source: our elaborations of data from United Nations (2017).

Differences in demographic trends between the governorates and between urban and rural areas persist. Both fertility and mortality tend to be lower in urban areas, as the decline of fertility and mortality usually begins earlier in urban settings. The process of convergence in life expectancy among governorates has been more dramatic than that of fertility (Handoussa, 2010; Angeli, 2015).

### 3. DATA AND METHODS

The individual data were derived from the Egypt Labour Market Survey of 1998 (ELMS 1998) and the Egypt Labour Market Panel Surveys of 2006 and 2012 (ELMPS 2006, 2012), all conducted by the Economic Research Forum (ERF) and the Central Agency for Public Mobilization and Statistics (CAPMAS). The surveys covered nationally representative household samples; the questionnaires for the different survey rounds were

intentionally similar to ensure data comparability over time (Barssoum, 2007; Assaad and Krafft, 2013). The surveys used three research instruments: a household-level questionnaire, an individual questionnaire (to every individual in the household aged six and over), and a household enterprise and income module. The household questionnaire comprises three interrelated questionnaires for each household in which data on the fundamental demographic characteristics of all household members, household assets, and access to services are collected. Data on individuals include demographic characteristics of all household members (gender, age, age at marriage, relation to the head of the household), education, work characteristics, migration history, housing conditions (comfort level, exploitation), households, durable goods and assets, non-work-related sources of income, and money transfers (pensions, remittances, support from non-government organizations or religious organizations). Information on age, sex, marital status, and on the relation to the household head for each household component allows us to determine the distribution of living arrangements. In particular, for our scope, it is possible to individuate the residential arrangements of the elderly. All of the Labor Market Surveys (as censuses) define a household to be any individuals who live under the same roof and eat the same food. The household is thus defined as a constituted unit that can also be composed of individuals who habitually live alone. This common definition for identifying households does not preclude certain difficulties in identifying household members. As Assaad and Krafft (2013) note in Egypt, for example, households are increasingly difficult to identify, especially in rural areas and poorer urban areas; it can be difficult to clearly distinguish households when extended families live under the same roof.

We present descriptive analyses as well as multivariate analyses. In the following pages we analyse the trend in the living arrangements of elderly people in 1998, 2006 and 2012. For 2012, we focus on the determinants of late-life living arrangements: independent living of the elderly or co-residence with other people. A multinomial regression model, where the dependent variables are represented by the household types, will be implemented. We will refer to the chronological age of 65 years as a definition of 'elderly' or older person.

#### 4. AGEING AND LIVING ARRANGEMENTS

Demographic changes involve many domains: social, economic, demographic, political and private. Indeed, as Bengtson *et al.* (2003) emphasized, while not as obvious as other changes, population ageing profoundly affects families. The study of the levels, patterns and changes of living arrangements among the elderly has been an important aspect of sociology and a systematic theme in historical and demographic research on the family.

The discussion on the importance and meaning of intergenerational co-residence started in the nineteenth century. In the last decades of the twentieth century, it has been widely accepted that intergenerational co-residence is common in traditional agricultural societies and diminishes with industrialisation, migration and economic expan-

sion (Bongaarts and Zimmer, 2002; Ruggles and Heggeness, 2008). Challenges in the demographic, socio-economic and cultural behaviour induced by modernity are then associated with simplification of the household and independent residence of the elderly. This trend can compromise family cohesion and old-age security. In the coming decades, the tasks associated with the growing number of the oldest old will involve many actors, including the aged, their families and policy makers (Sibai and Yamout, 2012).

Longer life expectancy raises the proportion of older married couples by postponing widowhood. Increasingly many elderly people rely on their marital partners for both personal and financial support, but the gendered pattern of survival implies that men live longer with a spouse, both in a form of independent living or co-residence with other people.

The household structure (or living arrangement) is also partly a consequence of patterns of fertility, which determine kin availability—that is, the number of children with whom elderly parents could have either the face-to-face contact implied by co-residence or the less intense or constant access implied by close spatial proximity (Wolf, 1994). Having more children thus makes co-residence with children more likely. In addition, the patterns of kin availability (e.g. the spatial proximity of the elderly to their kin, especially their adult children) coupled with increasing urbanisation and job migration of younger relatives can affect choices of solitary living or co-residence.

Living arrangements can also change as a function of the increase in the aged population itself. As societies age, the growth of the elderly population itself could create conditions for changes in the norms of co-residence and relations between generations (Palloni, 2001; Wolf, 1994).

Health problems among older people can be also related to living arrangements. Demographic and sociological literature from the developing world (including China, Taiwan, Egypt, and Tunisia) have often verified that older people fare better in terms of health when they live with their children in multigenerational households than when they live alone (Shetty, 2012). However, this model does not take into account both the capacity of family care and women's role in contemporary society.

The living arrangements of the elderly are also considered key determinants of their needs for socio-economic, physical and emotional assistance. The size and structure of the household and the characteristics of the household head are significant determinants of poverty. Older persons who live alone are more likely to be poor than older persons who live with their spouses and/or their descendants, and they have greater health care needs (Jiang and O'Neill, 2007). Considerable attention has been devoted to emerging issues related to ageing, the health care of the elderly and their socio-economic conditions in various developing countries. For instance, outside the MENA region, studies have been devoted to the impact of living arrangements and intergenerational relationships on well-being among the elderly in China (Ren and Treiman, 2015; Zhang, 2015), India (Rajan and Kumar, 2003), Thailand (Knodel and Chayovan, 2008) as well as in Sub-Saharan Africa (Aboderin and Hoffman, 2015).

As Palloni (2001) states, the study of patterns of elderly co-residence is not just a theoretical exercise to understand the historical evolution of families and households. It is

also an area of concrete concern for policy makers, as variations in elderly co-residence with kin can induce modifications of elderly levels of well-being. A synthesis of trends is essential to clarify important issues with policy relevance: information on the composition of households and living arrangements is crucial to formulate evidence-based strategies about how to meet the needs of older people (Tohme *et al.*, 2011).

#### 4.1. The Egyptian elderly: Continuity and change in the socio-demographic structure

Data from the ELMPS (1998 - 2012) confirm a trend of ageing in Egypt, as well as the trend of ageing of the older population itself. People aged 65 years and over represented 4.8 per cent of the total population in 1998, 4.9 per cent in 2006 and 5.3 per cent in 2012. From 1998 to 2012, Egypt saw a growth in the percentage of the elderly from the oldest age group (80 and over) and a decline in the proportion of the youngest elderly (65 - 69). Due to their longer lifespan, women also represent an increasing portion of the older population. In 1998, 49.6 per cent of the older people were women; this percentage rose to 52.2 in 2006 and 56.3 in 2012. Urban areas have an older population compared to their rural counterparts, but the percentages were converging over the study period. Among older men, almost nine out of ten were the household heads in both 1998 and 2006; the corresponding percentage was higher in 2012 (Table 2).

TABLE 1

*Socio-demographic characteristics of older Egyptians (65 years and over) by selected variables. Notes:*  
 ◦ Do you have any longstanding illness/chronic diseases (q1404)?; \*\* By applying the expansion factor, we obtained estimates of the number of older people (65 and over) in the total Egyptian population: these were 2,561,384 in 2008; 3,422,059 in 2006; and 4,235,647 in 2012. Weighted data.  
 Source: Angeli, 2015.

|                                       | 1998 |       | 2006 |       | 2012  |       |
|---------------------------------------|------|-------|------|-------|-------|-------|
|                                       | MEN  | WOMEN | MEN  | WOMEN | MEN   | WOMEN |
| Older 65+ on the total pop. (%)       | 4.7  | 4.8   | 4.6  | 5.1   | 4.7   | 5.9   |
| Oldest old (80+) in the elderly pop.◦ | 12.2 | 10.7  | 12.6 | 12.9  | 12.5  | 15.1  |
| <b>Marital status</b>                 |      |       |      |       |       |       |
| Never married                         | 1.0  | 1.4   | 0.4  | 1.7   | 0.6   | 0.9   |
| Married                               | 79.9 | 24.4  | 81.8 | 23.7  | 82.5  | 27.3  |
| Divorced                              | 0.5  | 1.1   | 0.3  | 1.0   | 0.6   | 2.3   |
| Widowed                               | 18.6 | 73.1  | 17.4 | 73.6  | 16.3  | 69.5  |
| Total                                 | 100  | 100   | 100  | 100   | 100   | 100   |
| Number of cases**                     | 593  | 584   | 854  | 931   | 1,153 | 1,408 |

The proportion of older women who were household heads increased from 1998 to 2012: this trend is largely due to the growth in number and relative weight of women living alone. Although being a widow per se does not imply economic deprivation, given the lack of a comprehensive social safety net, at least a portion of elderly women are likely to face economic problems (World Bank, 2003).

The percentages of illiterate individuals among older men and women decreased in 2012 when younger generations had reached old age (Table 2). An opposite trend emerges in the percentage of the elderly covered by medical insurance: this aspect is

TABLE 2

*Socio-demographic characteristics of older Egyptians (65 years and over) by selected variables. Notes:*

*\* Percentage on the total of elderly people in the age class; (a): employed (participation in any employment) in the last seven days. Weighted data. Source: Angeli, 2015.*

|  | 1998 |       | 2006 |       | 2012  |       |
|--|------|-------|------|-------|-------|-------|
|  | MEN  | WOMEN | MEN  | WOMEN | MEN   | WOMEN |
| <b>Residence*</b>                              |      |       |      |       |       |       |
| Urban (%)                                      | 64.4 | 60.3  | 51.4 | 49.6  | 53.1  | 49.5  |
| <b>Head of the household*</b>                  | 90.0 | 28.9  | 92.8 | 38.6  | 95.2  | 46.5  |
| <b>Current job status</b>                      |      |       |      |       |       |       |
| Employed during the last seven days (a)*       | 26.3 | 1.4   | 30.5 | 6.1   | 25.8  | 3.0   |
| <b>No education (%)*</b>                       | 49.3 | 86.1  | 53.1 | 81.6  | 46.9  | 78.5  |
| <b>He/she declares chronic diseases (Yes)◦</b> | -    | -     | -    | -     | 72.0  | 76.8  |
| <b>Medical/health insurance (Yes)*</b>         | 7.3  | 7.4   | 8.9  | 2.8   | 49.6  | 16.9  |
| Number of cases                                | 593  | 584   | 854  | 931   | 1,153 | 1,408 |

important, since high prevalence rates of limitations in activities of daily living were reported in Egypt, as in other MENA countries: Jordan, Lebanon and Tunisia (Sibai *et al.*, 2014). With regard to employment, roughly 25 to 30 per cent of elderly males declared that they had participated in some form of employment in the seven days prior to the survey. Previous studies have found that in Egypt (Azer and Affifi, 1992) and in most Arab countries (Yount and Sibai, 2009). Boggatz and Dassen (2005) a large percentage of men continued to work after the official male age of retirement. Although these older men still appeared to be able to work, this could also be a sign that large segments of Egypt's older population still have to work to survive because of their households' limited capacity to support them financially. The need for older people to continue working is not limited to Egypt but seems to be common especially among developing countries. Data from the International Labour Organisation (cited by United Nations, 2013) show that in 2010, the labour force participation rate of the elderly was around 8 per cent in more developed regions and 31 per cent in less developed regions.

#### 4.2. *Towards declining household size and co-residence of generations*

Alongside population ageing are marked changes in family structures, which implies that changes in population structure have an important impact on intergenerational ties. Data from the labour market surveys show that Egyptian households have undergone significant changes over time in terms of both size and structure. From 1998 to 2012, one of the most remarkable demographic trends was the reduction in household size. The average household size decreased from 5.1 in 1998 to 4.1 in 2012, with the bulk of the change occurring by 2006. The increasing trend towards smaller household sizes—one of the first signs of the shift from large families to a smaller nuclear model—was primarily seen in the urban context. These changes were less notable in the rural areas. Socio-demographic changes also alter people's expectations and roles, including those within the family that involve intergenerational ties (Bengtson *et al.*, 2003; Lowenstein *et al.*, 2011). The size and structure of a household are linked to the co-residence of the



generations living within it. Data from the labour market surveys show that around one in five Egyptian households included at least one elderly member in 1998 and 2006; the corresponding figure was about 18 per cent in 2012 (Table 3).

TABLE 3  
Distribution (%) of the households by the number of generations. Egypt 1998, 2006 and 2012. Note: Weighted data.

|                                     | Survey |       |        |
|-------------------------------------|--------|-------|--------|
|                                     | 1998   | 2006  | 2012   |
| 1 generation                        | 16.4   | 15.1  | 16.4   |
| 2 generations                       | 70.6   | 71.0  | 72.6   |
| 3 – 4 generations                   | 13.0   | 13.9  | 9.7    |
| Number of cases                     | 4,816  | 8,350 | 12,060 |
| HH (%) hosting at least one elderly | 21.7   | 19.0  | 17.9   |

The number of generations within the household indicates the lines of relations within it. In multigenerational households, a range of relations are vertical, crossing generational lines; some individuals perform the roles of both parents and children. In households with only a few generations, a variety of intragenerational relationships (mostly horizontal family ties) can also exist. In the 1998 and 2006 surveys, a large number of households included three to four generations, but the trend is towards a sharp reduction. In 2012, only 9.7 per cent of the households included three to four generations. Between 2006 and 2012, the percentage of single-generation households increased, including those living alone and with a spouse, siblings and siblings-in-law. Geographic differences also emerged. For instance, the urban governorates (Cairo, Alexandria, Port Said and Suez) had the highest share of households with at least one elderly individual. Likewise, in the other regions of Egypt, the urban areas have a higher percentage of households with at least one elderly individual (Angeli, 2015).

Even if the most common living arrangements is the nuclear family<sup>3</sup>, from 1998 to 2012, there was a large increase in the percentage of elderly living alone<sup>4</sup> or with their spouses (for both men and women). This increase occurred alongside a decrease in the percentage of those living with descendants (Table 4).

Among the oldest old, the share of elderly people living with their relatives also decreased. The trend of living alone or with the spouse only is consistent with the general tendency towards independent living, which is already widespread in developed countries and increasing in some developing countries (United Nations, 2017). Considerable differences exist between men and women. Older Egyptian men (whether or

<sup>3</sup> Elderly parent(s) and unmarried child(ren).

<sup>4</sup> We estimate that around 298,000 elderly Egyptian women lived alone in 2006; the figure for 2012 was over 260,000 women. For men percentages of living alone remain at low levels; we estimate that nearly 102,500 older men lived alone in 2012.

TABLE 4

*Living arrangements of the elderly aged 65 and over by gender (1998, 2006 and 2012). Notes: ◊Relatives other than spouse, children, grandchildren; \* Those living alone with a servant are included. Source: Author's elaborations from the ELMPs 1998, 2006 and 2012. Weighted data.*

|                             | 1998 Survey |        |       | 2006 Survey |        |       | 2012 Survey |        |       |
|-----------------------------|-------------|--------|-------|-------------|--------|-------|-------------|--------|-------|
|                             | Male        | Female | Total | Male        | Female | Total | Male        | Female | Total |
| <b>Independent living</b>   |             |        |       |             |        |       |             |        |       |
| Alone                       | 5.0         | 14.8   | 9.9   | 5.7         | 19.4   | 13.0  | 5.5         | 23.6   | 15.7  |
| With spouse only            | 18.5        | 9.0    | 13.7  | 24.4        | 10.2   | 16.9  | 31.9        | 13.7   | 21.7  |
| <b>Cohabitation</b>         |             |        |       |             |        |       |             |        |       |
| with descendants            | 75.0        | 64.8   | 69.8  | 68.7        | 62.3   | 65.4  | 60.9        | 57.5   | 58.9  |
| with other relatives◊       | 1.3         | 7.5    | 4.5   | 0.9         | 6.4    | 3.8   | 1.5         | 4.8    | 3.4   |
| with unrelated people only* | 0.2         | 3.9    | 2.1   | 0.2         | 1.7    | 1.0   | 0.1         | 0.4    | 0.2   |
| Total                       | 100         | 100    | 100   | 100         | 100    | 100   | 100         | 100    | 100   |
| Number of observations      | 593         | 584    | 1,177 | 854         | 931    | 1,785 | 1,153       | 1,408  | 2,561 |

not they were household heads) were more likely than women to live with their children and grandchildren, but the percentage decreased from 75 per cent in 1998 to 60 per cent in 2012. The study period saw an increase in the percentage of men living with their spouses only; this is a result of the persistence of traditional models of marriage, gains in the survival model and new choices concerning late-life living arrangements. As Tabutin and Schoumaker (2005) revealed, Egypt, like other countries in the region, has traditionally been characterised by a large age gap between spouses. The average marital age gap narrowed in different countries of the region after 1980, but Egypt, particularly its rural areas, did not follow this trend. Whereas some countries have undergone a real marriage revolution, in Egypt (along with Yemen), the age difference between spouses remains large. This pattern of family formation is partly due to the gendered survival among spouses.

Geographic residence has a clear impact on female living arrangements, primarily on the share of elderly women living alone, which was 22 per cent among rural women and almost 30 per cent among urban women in 2012 (see Table 8 in Appendix A).

Various factors influence people's choices regarding separate residence or cohabitation. Co-residence, and other interactions mainly realised within the household, are generally assumed to represent the context in which most support takes place. As research in developed countries has shown, sharing the same dwelling likely entails mutual help and financial benefits (Isengard and Szydluk, 2012). Bengtson (2001) explained that multigenerational households represent significant latent networks that can be activated to provide support and well-being for family members during times of need. Adult children and their parents are related through many forms of intergenerational solidarity, involving both emotional and practical aspects. Burholt and Dobbs (2014) argued that in cultures where multigenerational households are common, caring for parents is often discussed in terms of filial obligation, which is generally described as a sense of duty towards one's parents. In countries that emphasise interdependence or filial obligation, the mere fact of being old is enough reason for younger generations to provide help, whereas in countries that stress independence as a goal, help is supplied only when

needed. As Grundy (2006) has shown for developed countries, the availability of family and social support is an important aspect. Intergenerational solidarity is not limited to co-residence; the survey data confirm that in Egypt, family relationships across generations remain strong and intergenerational care is not restricted to co-resident relatives (Angeli, 2015).

#### 5. LIVING ALONE OR WITH OTHER PEOPLE IN LATE-LIFE: THE MAIN RESPONDENTS' CHARACTERISTICS

Previous data highlight emerging changes in late-life living arrangements in the country here analysed, suggesting us to investigate the determinants of late-life living arrangements for the most recent survey. To do so, we perform a multinomial regression analysis (Agresti, 2015) on 2012 data, where the household types represent the dependent variables. We carried out a separate analysis for males and females in order to disentangle the possible differences between the two sexes. Table 5 shows the dependent variables used in the analysis. In particular, the proportion for all the different household types are reported for the country. We considered the categories: independent living, including living alone and in couple; nuclear family; and complex household, constituted by the multifamily and extended household. The chosen reference category is independent living.

TABLE 5

*Multinomial logistic regression analysis. Dependent variables: percentage distribution. People 65 years and over, Egypt 2012. Notes: We did not include elderly whose living form was not precisely determined. Unweighted data.*

| Variable                             | %     |         |
|--------------------------------------|-------|---------|
|                                      | Males | Females |
| Dependent variables (household type) |       |         |
| <b>Independent living</b>            | 36.5  | 35.5    |
| Alone                                | 5.6   | 22.2    |
| Couple                               | 30.9  | 13.3    |
| <b>Nuclear family</b>                | 37.4  | 16.1    |
| <b>Complex family</b>                | 26.1  | 48.4    |
| Multifamily                          | 7.1   | 30.4    |
| Extended                             | 19.0  | 18.0    |
| N. of observations                   | 1150  | 1400    |

#### 5.1. Variable definitions

In order to analyze the relationships between elderly characteristics and their living arrangements, we employ multinomial logit regressions. We estimate models of late-life living arrangements for males and females in Egypt, using a model that compares the in-

dependent living form with any other household type, that is, nuclear and complex family. Our objective is to summarize and describe the individual-level characteristics of the elderly associated with the different household types. Table 6 describes the independent variables included in the model. More specifically, we consider basic socio-demographic characteristic such age with two socioeconomic variables: educational level and employment status. Educational level is included as an indicator of socioeconomic status and past earning potential, while the employment status (in the reference week) can be considered as an indicator of poverty. We expect that the need to continue working could more characterize the elderly living independently. The educational level is divided into three categories: illiterate (reference category); primary education; intermediate and above education. We expect that lower educational levels, more diffused in the oldest ages and in the rural context, could more characterize the elderly living in multi-generational households. Furthermore, we take into account the area of residence of the elderly (of the household), that is, urban or rural. We also take into account the perceived health status of the aged person which is divided into three categories: strongly limited in the everyday activities (reference category); limited to some extent; not limited. We also consider “formal” sources of income, which include social assistance and pensions; this is a variable at the household level. In what follows, the results of the regression analyses will be presented.

TABLE 6

*Multinomial logit regression: Independent variables. People 65 years and over, Egypt 2012. Notes: Unweighted data.*

| Variable   | Type        | Males  | Females |
|--|-------------|--------|---------|
|  |             | Mean   |         |
| Urban/rural residence (urban = 0; rural = 1)         | Dichotomous | 0.468  | 0.497   |
| Age of the elderly                                   | Discrete    | 72.052 | 72.262  |
| Elderly employment status (not empl. = 0; empl. = 1) | Dichotomous | 0.245  | 0.028   |
| Elderly educational level Categorical                |             |        |         |
| <i>Illiterate (ref. cat.)</i>                        |             | 0.469  | 0.777   |
| <i>Primary</i>                                       |             | 0.373  | 0.178   |
| <i>Intermediate and above</i>                        |             | 0.158  | 0.045   |
| Elderly perceived health status Categorical          |             |        |         |
| <i>Strongly limited (ref. cat.)</i>                  |             | 0.154  | 0.173   |
| <i>Limited to some extent</i>                        |             | 0.252  | 0.269   |
| <i>Not limited</i>                                   |             | 0.594  | 0.558   |
| Pension and other sources of income (no source = 0)  | Dichotomous | 0.873  | 0.878   |

## 5.2. Estimation results

The results are shown in the form of odds ratios (Table 7). As introduced, the dependent variable is the household type where the aged person lives, that is, independent living, nuclear family, and complex family. In all regressions, independent living is the excluded category. The age of the older person seems to have an opposite behavior for the two genders: for males, we found a positive association with nuclear family and a negative one with complex household; for females instead, we found a positive relation with the

complex families.

TABLE 7  
Estimation results. Notes: *p*-value significant to the \*\*\* 1%, \*\* 5%, and \* 10% level.

| Variable  | Household Type | Males                 |                       | Females               |                       |
|---|----------------|-----------------------|-----------------------|-----------------------|-----------------------|
|   |                | Nuclear<br>Odds ratio | Complex<br>Odds ratio | Nuclear<br>Odds ratio | Complex<br>Odds ratio |
| Intercept   |                | 2.184***              | 0.495*                | 2.070*                | 0.159**               |
| Urban/rural residence (urban= 0; rural= 1)        |                | 1.121                 | 2.649***              | 0.872                 | 1.887***              |
| Age of the elderly                                |                | 1.031*                | 0.958***              | 0.982                 | 1.038***              |
| Elderly employment stat. (not empl.= 0; empl.= 1) |                | 1.229                 | 0.713*                | 0.626                 | 0.506**               |
| Elderly education                                 |                |                       |                       |                       |                       |
| <i>Primary</i>                                    |                | 1.049                 | 0.578***              | 0.662**               | 0.490***              |
| <i>Intermediate and above</i>                     |                | 0.902                 | 0.274***              | 0.623                 | 0.279***              |
| Elderly perceived health status                   |                |                       |                       |                       |                       |
| <i>Limited to some extent</i>                     |                | 0.640**               | 0.637*                | 1.054                 | 0.771                 |
| <i>Not limited</i>                                |                | 0.776                 | 0.719                 | 1.247                 | 1.027                 |
| Pension and other sources of income               |                | 0.688                 | 0.493***              | 0.969                 | 0.249***              |

As expected, for both genders, elderly living alone or in couple were more likely to be employed, than elderly living in a complex family. No statistically significant difference with the nuclear family emerged. This result seems to confirm that the need to continue working can be considered an indicator of poverty as well as of frailty of both public and private help. On the other hand, as expected, results outlined a positive and significant relation between formal sources of income and independent living. For what concerns the level of education, we found strong relationship with the complex family type. In particular, compared to the reference category (illiterate), all other categories showed negative associations, meaning that illiterate aged people are more associated with the complex families for both sexes. The perceived health status showed a negative relationship with both categories but only for males. This means that, with respect to an elderly male living alone or in a couple, there is a higher odds of finding elderly with strong limitation in both nuclear and complex families.

Residing in rural areas is associated with complex families for both genders. Males living in a rural setting were more than two times as likely to live with relatives in a complex household, than the urban elderly (OR = 2.6). For females the risk was near to two times (OR = 1.9).

## 6. CONCLUSIONS AND POLICY IMPLICATIONS

This study analysed the dynamics of Egyptian living arrangements, focusing on late-life trends and family conditions of the elderly reported in the labour market surveys. Egypt is undergoing a demographic transition; as its total population increases, so does its elderly population. This exacerbates the social and health burden, which has important implications for the country's social and political systems. Ageing has serious consequences for society because it relates to changes in family life, intergenerational relationships and the social security system. Our results confirm that the family continues to be the main source of support for older people in Egypt, as in the Arab re-

gion in general, but there is a clear trend towards independent living in late life. Co-residence in multigenerational households has been the norm in Egypt; it is one of the ways by which Egyptian families have traditionally provided support for their older relatives. Nevertheless, despite the strong influence of tradition, the survey data confirm that changes to the demographic structure of the Egyptian population in recent decades have affected living arrangements and intergenerational relationships. Findings show that the percentage of single-generation households is increasing. Parent-child co-residence has become less widely practised, whereas independent living arrangements for the elderly have become more common. Gender roles, relationship dynamics and gendered patterns of survival have resulted in a gendered distribution of co-residential living arrangements in Egypt, as in most developed and developing nations. Men and women spend the latter part of their lives in different relationships and living arrangements, with strong implications for their family members. A large share of older women are widows living alone, mostly in urban areas. In 2012, about 29 per cent of urban older women were living alone; this largely explains the remarkable increase in the number of female-headed households. On the other hand, the majority of older men live with their spouses. Gendered divergences in widowhood and remarriage imply that men are likely to maintain important, horizontal intergenerational interactions until the end of their lives. When men have to cope with serious health problems, they are likely to have wives who care for them. By contrast, because frail and ill older women are typically widowed, they rely more than men do on intergenerational relationships for help and support. Findings confirm that older women are at higher risk of frailty than older men are. These results are consistent with the findings of previous research. A joint study by the World Bank and Egypt's National Council for Women (World Bank, 2003) used various Egyptian data sources to analyze the situation of households headed by females. The study concluded that "females heading households were older than males, less likely to participate in the labor force and heavily dependent on income transfers from pensions and remittances. Most females heading households are widowed and widowed women heading households with children are the most disadvantaged in terms of the incidence, depth and severity of poverty. Most females heading households are illiterate and children in these households are more likely to be illiterate and more likely to work". Results stress the need to implement special social protection measures to address feminization of poverty, in particular among Egyptian older women, in line with considerations drawn from the Second World Assembly on Ageing, held in 2002 (United Nations, 2002). The employment status of the elderly is an important issue. Older Egyptians who live independently are more likely to work. This suggests the weakness of both formal and informal support networks for the elderly. The participation of older Egyptians in the labour market has also been outlined in other surveys. An analysis of a sample of older people living in two administrative units of Giza within the boundaries of Greater Cairo found that for about 17 per cent of the interviewees, the main source of income was either employed or self-employed work (Azer and Afifi, 1992). A study of living arrangements in countries with available Demographic and Health Survey data found that, in most Arab countries, a large percentage of men continued to work after

the official age of retirement (Yount and Sibai, 2009). The growing number of older people in Egypt, as in other MENA countries, will pose new tasks for health and social care systems, as well as for family care (Azer and Afifi, 1992; Awad and Zohry, 2005; Nandakumar *et al.*, 1998; Sibai and Yamout, 2012). According to the World Health Organisation (2006), a high percentage of the Egyptian elderly living alone or in older households may face chronic diseases and disability, which will require both private and public support. The government has a key role in disseminating information to reduce the risk of chronic diseases and in ensuring access to preventive and treatment services, especially for poor people. The increasing number of older persons will require policy and health system reforms and greater extended coverage. Older Egyptians living alone represent a relevant socio-political group that requires policy interventions because they are more likely to need external assistance when ill or disabled, they face a greater risk of social isolation and they are more likely to be poor. Finally, a growing body of international literature suggests that in developing countries a move towards conditional forms of social assistance that aim to build the human capital of poor households can be a more empowering and, over the long run, effective means of reducing poverty (Hulme *et al.*, 2012). Cameron and Cobb-Clark (2008) highlighted that “calls for governments to provide support for the elderly in lower-income countries are likely to increase as the elderly become a larger proportion of the total population especially if economic growth and modern markets weaken traditional systems of family support”. This framework implies that families also will be asked to meet the challenges of the ageing population. Yount and Sibai (2009) explained that changes in intergenerational co-residence over time suggest an increasing heterogeneity in norms about living arrangements and the expression of intergenerational support in Arab societies. If co-residence of older people with their younger relatives can be considered a form of intergenerational solidarity, the elderly living in independent arrangements can rely on assistance from non-cohabiting family members. As many researchers in other countries have pointed out, older persons living apart from their children often have children living nearby, and strong ties of affection and feelings of mutual obligation tend to persist. Sherif-Trask (2006) stated that most Egyptian people live with or near their immediate families and are in constant contact with their extended families. The centrality of the family emerges despite class and regional differences. Most Egyptians still feel that their families and extended kin provide security in an increasingly unfamiliar world. Even people living alone may perceive the family and family contact as a key part of their quality of life (Reher and Requena, 2018). Living arrangements are of interest to economists as well, since they are an important component of well-being (Edmonds *et al.*, 2005). Even if parents and adult children no longer live in the same household, they can help each other by providing care, financial support and other forms of assistance. The surveys analysed in this study show a good deal of reciprocity between generations even if the elderly live independently. The surveys also show the considerable childcare contributions of the elderly. Unfortunately, individual data on intergenerational relationships are incomplete and do not allow us to analyse in depth the flow of informal support to the household (particularly to the elderly living alone) from relatives and other non-co-resident indi-

viduals. This prevented us from simultaneously taking into account the independent living arrangements of the elderly and the existence of external support. Despite these limitations, this study contributes to the existing literature on late-life conditions and intergenerational relationships in Egypt, a country where ageing and its consequences have received little research attention.

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#### APPENDIX

##### A. DEFINITION OF HOUSEHOLDS' STRUCTURE

In order to identify multi-generational households and extended households, we classified the households by the number of generations here present and by the 'complexity' of the household; complexity is generally analysed as a function of the number of conjugal units, and not the number of generations in the household. A nuclear household (or family household) has at least two members related by birth, marriage, or adoption, one of whom is the head of the household. A multi-family household contains two or more conjugal units; and an extended family household consists of one family plus at least one other relative, such as a parent/parent-in-law, sibling/sibling-in-law, or other more distant relatives when these other relatives do not form a separate family unit within the household.

TABLE 8

*Living arrangements of the elderly aged 65 and over by gender (2012). Notes: ◊Children, children-in-law, or grandchildren; ○Other than spouse, children (in-law), grand-children. \*Siblings are included. ◊Those living with a servant are included. Weighted data Source: Author's elaborations from the ELMPS 2012.*

| Living status               | 2012 Urban |        |       | 2012 Rural |        |       |
|-----------------------------|------------|--------|-------|------------|--------|-------|
|                             | Male       | Female | Total | Male       | Female | Total |
| Alone                       | 7.5        | 29.6   | 19.4  | 3.6        | 21.7   | 13.8  |
| With spouse only            | 36.7       | 18.0   | 26.8  | 28.2       | 11.7   | 18.9  |
| With descendants◊           | 54.8       | 51.4   | 53.0  | 68.0       | 66.0   | 66.9  |
| With other relatives○       | 0.6        | 0.7    | 0.6   | –          | 0.2    | 0.1   |
| With unrelated people only* | 0.2        | 0.3    | 0.2   | 0.2        | 0.3    | 0.3   |
| Total                       | 100        | 100    | 100   | 100        | 100    | 100   |
| Number of observations      | 613        | 708    | 1321  | 540        | 700    | 1240  |



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## SUMMARY

Egypt is facing the dual challenges of being both young and rapidly transitioning. Population structure is changing, with main effects on several dimensions of individual and social life, which include family structures and relations. We aim to analyze the conditions of the elderly and to evaluate whether or not household structures, as well as the living arrangements of the elderly, have changed in recent years. Moreover, we aim to individuate the determinants of late-life living arrangements: independent living or co-residence. Trends in late-life living arrangements and intergenerational ties derive from three rounds of the Egyptian Labor Market Panel Survey (ELMPS) carried out in 1998, 2006 and 2012. To assess which respondents' characteristics are related to the individual living arrangement a multinomial regression model, where the dependent variables are represented by the household types, has been implemented in 2012 data. Men and women live the latter part of their life in different living arrangements and relationships. Moreover, findings underlined situations of poor material conditions and poor health. Data confirm a need for policy interventions to meet long-term needs of the elderly, taking into account the raising trend toward living alone or in households with only elderly members. In particular, it is essential to discover the channels of intervention in the rural areas of the country to protect the elderly from poverty, as many researchers have already pointed out.

*Keywords:* Egypt; Late-life living arrangements; Intergenerational ties.