

POPULATION AGEING IN MALAYSIA

A Mosaic of Issues,
Challenges and
Prospects



PROF. DR. TENGKU AIZAN TENGKU ABDUL HAMID

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ABSTRACT

The world is ageing, and in the next decade the growth of the aged population will be fastest in the developing countries. The number of older persons is expected to more than double globally from 841 million in 2013 to more than 2 billion in 2050. By then, nearly 8 in 10 of the world's older population will live in less developed regions. Rapid population ageing in Malaysia can be attributed to the dramatic decline in fertility and mortality rates in tandem with longer life expectancy. Compared to the more developed countries, Malaysia has a rather short time to prepare for the transition into an aged nation. The older population aged 65 years or over will take only 23 years to double from 7 percent in 2020 to 14 percent in 2043. Like many other developing countries in the region, Malaysia is ageing at lower levels of development. All trends point towards a rapid demographic transition that is currently taking place as a "silent epidemic". This inaugural lecture will focus on the trends of population ageing and the characteristics of the elderly in Malaysia from five (economic, health, social, psycho-spiritual, environmental) key domains. A discussion of the prospects and the way forward for population ageing in Malaysia is also presented. The ageing experiences of the population are influenced by normative age-grade, normative history-grade and non-normative events which make each cohort of aged distinct from another as the needs and demand of each cohort could be poles apart. The cross-cutting dimensions of ethnicity, gender, socio-economic background and geographical location will influence the trajectories across the life course as the situation of the aged differs by a unique combination of diverse past experiences. Malaysia is faced with a mammoth task of balancing the needs of a rapidly ageing society and at the same time promoting economic growth and development to fulfil the aspirations of becoming a high income nation. Ageing

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is a multidimensional, lifelong process with impact at both micro and macro levels to all members of the society. In Malaysia, the fast growth of the older population is not made opaque as the nascent knowledge on old age and ageing remains fragmented and unconsolidated. The use of empirical evidence in the planning of policies on ageing must be embraced at all levels of government and multi-sector stakeholders should collaborate closely to optimize the use of limited resources. The future of research on ageing in Malaysia lies in interdisciplinary studies with longitudinal panel data, uniting the fields of social, economic and psycho-gerontology, geriatrics, as well as gerontechnology. A society for all ages recognizes the need for lifelong development as policies designed for the younger population will also have a binding effect on the aged today as well as those of tomorrow.

INTRODUCTION

Ageing is a multidimensional concept which can be defined from many different perspectives. From a human development perspective, ageing is viewed as a lifelong process from conception, birth, maturity to death. From a societal perspective, ageing is seen as an aggregated statistics of the births and deaths of the population in a society that reflected a successful health outcome of the country's socioeconomic development. The environment, socio-cultural and temporal context will also have reciprocal influence on the outcomes and experience of ageing.

The significance of the growth of the aged population prompted the United Nations to convene two World Assemblies in 1980 and 2002, respectively. The World Population Ageing Report (United Nations, 2002, p. xxviii) summarized that:

1. **Population ageing is unprecedented**, without parallel in the history of humanity;
2. **Population ageing is pervasive**, a global phenomenon affecting every man, woman and child;
3. **Population ageing is profound**, having major consequences and implications for all facets of human life;
4. **Population ageing is enduring**. During the twentieth century the proportion of older persons continued to rise, and this trend is expected to continue into the twenty-first century.

According to the World Population Prospects database (UN, 2013), there is an estimated 895.3 million older persons aged 60 years or over in the world today with 504.2 million or 56.3% of them residing in Asia in 2015. By 2050, the number of older persons will more than double to 2 billion, where one out of every five persons in the world will be an elderly. At that time, the total

older population, for the first time in human history, is expected to outnumber the younger population (aged 14 years or lower). This development is both a triumph and a challenge to all societies. It is a triumph because people are living longer due to better health care and improved living conditions. It is also a challenge because societies have never experienced this large number of older persons with their unprecedented longevity.

Like many other countries around the world, Malaysia is also experiencing a rapid growth of the older population. This is a direct consequence of the decades of socio-economic development and public health policies where falling fertility and rising longevity have resulted in the rise of new generations. The question is, why should Malaysia be concerned with population ageing? What is the situation of population ageing in Malaysia? What can be done to address population ageing issues? This paper provides an overview of population ageing issues and challenges in Malaysia. It will focus on the trends of population ageing and the characteristics of the elderly in Malaysia from five (economic, health, social, psycho-spiritual, environmental) key domains. A discussion of the prospects and the way forward for population ageing in Malaysia is also presented. Data from previous publications will be utilized and updated throughout the paper.

INDICATORS OF POPULATION AGEING

To understand the development and significance of population ageing issues, the context in which it occurs is critical. Several authors have described the population of Malaysia and its characteristics, tracing back from her pre-Independence days to the modern Malaysia (Caldwell, 1962, Saw, 1988, Leete, 1996). The foundation and forces which shaped the population since the colonial days, in many ways, have perpetuated till this day. The

distribution of the aged population within geographical locations aligns with the historical development of the nation. Our multi-racial and multicultural society gives rise to significant diversity in the Malaysian ageing experience and some issues may be peculiar to specific ethnic communities. This section describes the basic indicators of population ageing that is commonly used to understand the worldwide phenomenon. This will involve the use of the population pyramid, the measure of location (median age) and head count ratios (dependency and ageing index). The pyramid is the graphic representation of the age–sex distribution with definitive shape to reflect population structure.

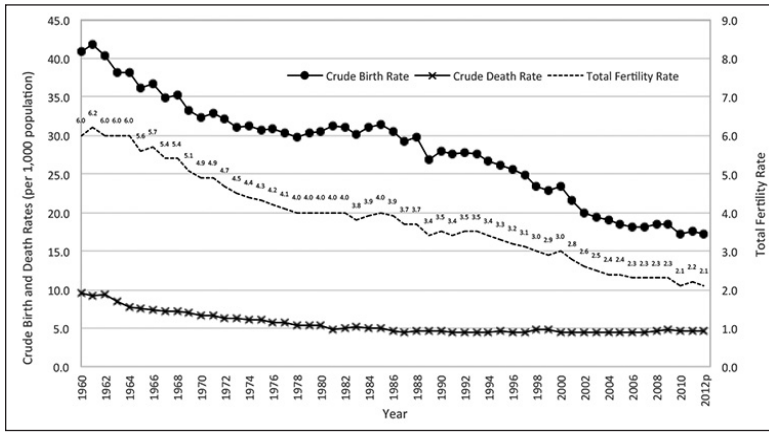
Demographic Transition Theory

Demographic transition is a term use to describe population change over time and the two basic processes that influence this change is birth and death rates. The interrelationships of the two processes have profound effect on the age structure of a country. Population ageing is a result of the changes in fertility and mortality rates as it declines over time (Figure 1). Malaysia is in the third stage of her demographic transition, where fertility rates are declining faster than mortality rates (Hamid, 2012). Figure 1 shows a steep decline in birth rates during the 1960s up to 1970. During this time, Malaysia was actively pursuing family planning programmes with the aim of promoting smaller families. Despite an effort in the 1980's where Malaysia pursued more pro-natalist policies with the target of increasing the population to 70 million people (Wong & Tey, 2006), the birth rates continue to drop. The average annual population growth rate of 2.6% between the 1991 and 2000 census showed a decline to 2.0% between the 2000 and 2010 census (DOSM, 2014). Total fertility rate per women of the reproductive age reached the replacement level of 2.1 in 2010.

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At the same time, the epidemiologic transition means that the leading cause of death had changed from communicable diseases to non-communicable diseases (or life style diseases). The top three medically certified principal causes of death in the population is ischemic heart disease (12.9%), pneumonia (7.0 %) and cerebrovascular disease (6.6%) in 2008 (DOSM, 2010). The leading risk factor for premature death in Malaysia reported in the Global Burden of Disease Study for 2010 was dietary risk (IMHE, 2012). Life expectancy at birth has increased significantly over the years as males born in 2010 can expect to live on average for 71.9 years while it is 76.6 years for females (DOSM, 2013) (Figure 2). Life expectancy at 60 for the same year is 17.4 years for males and 20 years for females (DOSM, 2011). This means that on average, older men and women in 2010 can look forward to another fifteen to twenty years of retirement living. This demographic trends have led to population age-sex structure changes and projection estimates can help us understand the demographic transition that is happening now.

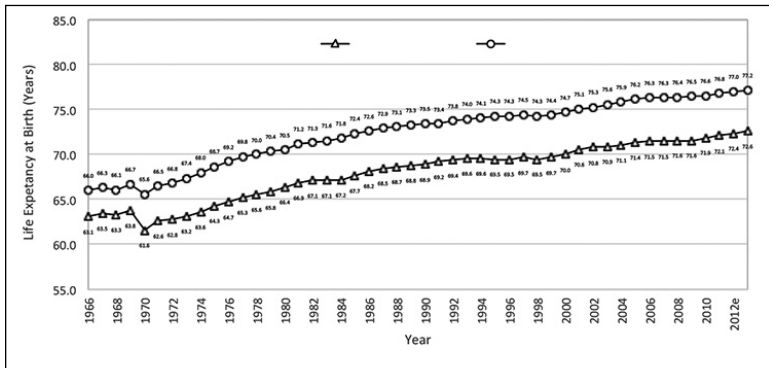
Tengku Aizan Tengku Abdul Hamid



Notes: CBR & CDR, 1960-62 Peninsular Malaysia; TFR, 1960-69 Peninsular Malaysia

Figure 1 Crude Birth Rate, Crude Death Rate and Total Fertility Rate, Malaysia, 1960 - 2012

Source: DOSM, 2013



Notes: 1996-90 Peninsular Malaysia

Figure 2 Life Expectancy at Birth by Ethnicity, Malaysia, 1966 - 2013

Source: DOSM, 2013

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Figure 3 below shows the population age structure and median age of Malaysia using the UN's World Population Prospects data (2012 revision). The graph showed a steep drop in the percentage of the population aged 0-14 which started somewhere between 1965 and 1970. This reflected the beginning of the decline in fertility rate. From 2010 onwards, the figure also showed a rising proportion of the aged population. Malaysia's median age would grow from 26.1 years in 2010 to 30.3 years in 2020 and will eventually reach 39.8 years in 2050. This means that in another 35 years, half of the total population will be aged 40 years or over.

Malaysia's first demographic dividend really started in the late 1970s where the demographic window of opportunity began. It is expected to last for about 50 years where the share of the dependent population will rise again. The first demographic dividend refers to the temporary increase of the productive age population between the ages of 15 to 59 years compared to the combined share of unproductive age groups (0-14 and 60 years or over). For Malaysia, the percentage of the productive age group will peak in 2020 at 69.3% and start to decline thereon. As stated by Bloom, Canning and Sevilla (2003):

"...if most of a nation's population falls within the working ages, the added productivity of this group can produce a "demographic dividend" of economic growth, assuming that policies to take advantage of this are in place." (p. xi)

We are however, halfway through our demographic window which will start closing by 2040 or 2050. It is possible to reap a second demographic dividend as population at older working ages start to accumulate assets. As people move into higher paying jobs and increase their accumulation of wealth, greater investments in

human capital will occur with rising per capita income. This is of course conditional upon implementation of effective policies that will sustain continuous, stable and equitable growth. During the first dividend, individuals and families will have more resources to improve their lives, but the second dividend depends a lot on how well we anticipate support for the elderly. The transitory bonus of the first dividend can be transformed into greater assets for sustainable development. The second dividend is permanent but if we fail to utilize or invest the accumulated wealth from a one-time rise in the share of productive age group, it may not materialize at all.

Between 2050 and 2055, the number of older persons aged 60 years or over will equal the number of young people under the age of 15 years in Malaysia. All these changes will have significant implications on our economy and our society. Lee, Mason and Park (2012) have argued that Asian countries faces two major objectives in relation to population ageing; 1) sustaining strong economic growth, and 2) providing economic security to the increasing number of older persons. They stressed the need to promote savings, investment in human capital, as well as well-functioning financial and labour markets including micro economic stability, while disagreeing with the provision of large transfer programs for older persons. Their concerns echoed the opinions of Bloom, Canning and Saville (2003) in which they stressed that the approach adopted by governments to address population ageing issues will influence the productivity and economic growth of the nation.

Population Ageing in Malaysia

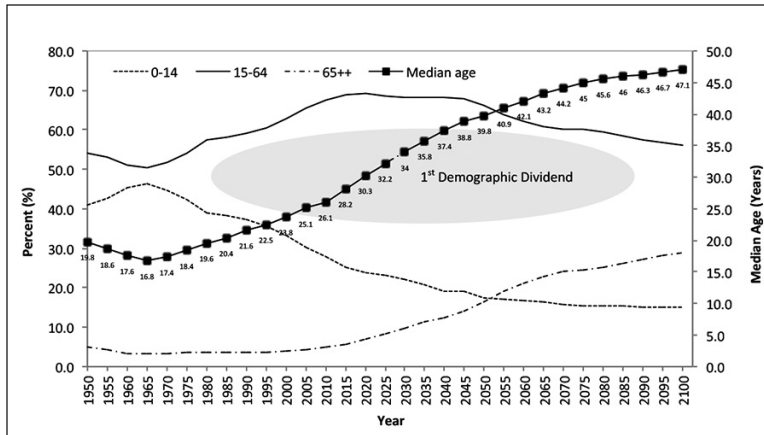


Figure 3 Population Age Structure and Median Age, Malaysia, 1950-2100

Source: Author's calculation based on the World Population Prospects: The 2012 Revision (UN, 2013)

Age-sex Pyramid

The age-sex distribution of the population can be shown graphically in the form of the population pyramid. Head-count ratios (dependency ratios, ageing index) only relate the number of individuals in large age categories and do not take into account age distribution within the smaller categories, especially among the elderly group (Gavrilov & Heuveline, 2003). A more precise presentation of changing age structure that takes into consideration variations in age distribution is the population pyramid.

Youthful population is represented by pyramid with a broad base of young children and a narrow apex of older people, while older population would have a more even age sex distribution across ages or even develop column or an inverted shaped pyramid. During the demographic transition process the age structure of the population

changes from a broad-based pyramid shape with high proportion of children to a more columnar shape with increasing proportion of middle-age and older persons. The change in age structure can be seen clearly in the population pyramid below. The shape of our population pyramid (Figure 4) has changed from the triangular-shaped pyramid to becoming a column with a narrowing of the lower age groups and expansion in the middle age groups. This showed that the productive age groups are expanding and at the same time the older population is also increasing as the younger population shrinks.

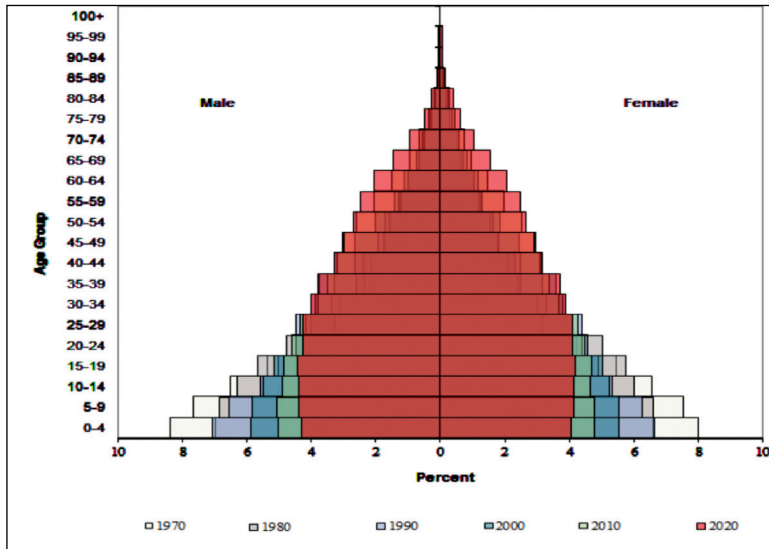


Figure 4 Age-sex Pyramid, Malaysia, 1970-2020

Source: Author's illustration based on the World Population Prospects: The 2012 Revision (UN, 2013)

Median Age

The median age is another indicator used by demographers to denote population ageing. The median age is the age at which exactly half of the population is older and half is younger than the said age. The median age of Malaysians showed a declining trend from 1950s to 1965, and steady increase thereafter as shown in Figure 1. Demographers use age 30 as the cut-off median age to indicate whether a population is ageing (Hamid, 2006). Population with a median age below 20 years is considered young, whereas population between the ages 20-29 years is intermediate, while 30 years and above is deemed old. Looking at the population projections in Figure 1, Malaysia can achieve the aged nation status as early as 2020 if using median age as the indicator.

The year 2020 is a very significant milestone for Malaysia's development as it is the year when the country should achieve the goal of becoming a developed nation as envisioned by Tun Dr. Mahathir Mohamed. It is apt that at the juncture of turning into a developed state, the country should consider the implications of a rapidly ageing society. Declining fertility rate contributes to population aging by depressing the growth rate of younger population, creating a faster growth rate of older population compared to younger population, thus promoting ageing from the base of the population pyramid. At the same time, the life expectancy at birth and at age 60 year hastened the growth of the older population (Hamid, 2012). In developed nations, ageing is happening at the apex of the pyramid as declining death rates at older ages and the large birth cohort from the past such as baby boomers is living longer contributed to the number and proportion of older persons.

Dependency Ratios

Figure 5 provide two indicators based on head count ratio (dependency ratio and ageing index) that present a crude measure of economic burden. The total dependency ratio is the number of persons under age 15 plus persons aged 65 or older per one hundred persons 15 to 64. It is the sum of the youth dependency ratio and the old-age dependency ratio. Population below age 15 and above age 65 are considered as non-productive age groups and the population aged 15-64 is defined as productive from the conventions of population demography.

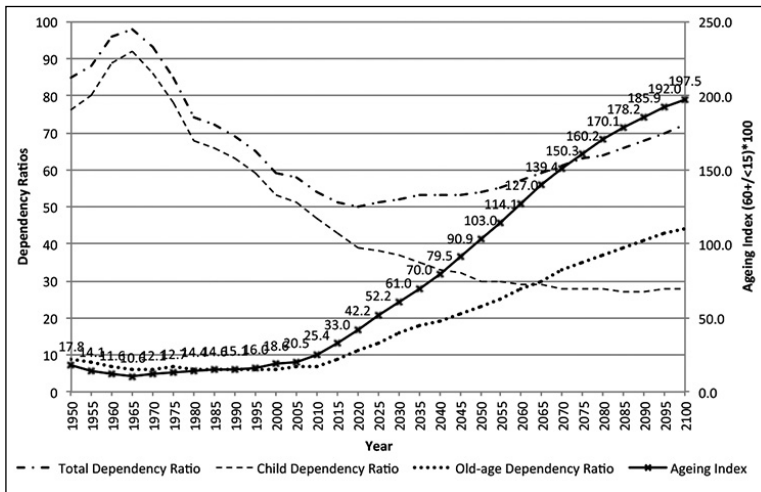


Figure 5 Dependency Ratios and Ageing Index, Malaysia, 1950-2100

Source: Author's calculation based on the World Population Prospects: The 2012 Revision (UN, 2013)

As can be seen with this latest medium projections, the total dependency is on a decline from 1965 to 2020 and this changes to an upward trend from the year 2020 onwards. The upward trend from year 2020 is due to the increase in the aged dependency

ratio indicating the growing contribution of the number of older persons in the society to the total dependency ratio. As for the youth dependency ratio the downward trend continues sharply from 1965 to 2020 and a gradual reduction occurs from then on.

Ageing Index and Other Indicators

The ageing index is a measure ratio of young to old persons in the population. The ageing index is calculated as the number of persons 60 years old or over per hundred persons under age 15 (Figure 5). In 1950, there were approximately 18 older persons to 100 young Malaysians aged below the age of 15. The downward trend was noted from 1955 onwards till 1995, when there was a reversal. A steep upward trend, about 21 older persons to 100 young persons below the age of 15 started in 2005. In 2010, there were about 25 older persons to 100 young person ages below 15 year old and this is projected to reach 197.5 persons in the year 2100. Ageing index of less than 15 is considered young, while an index of over 30 is considered as old (Hamid & Abu Samah, 2006), Using this indicator, Malaysia will be an aged nation by 2020. In the year 2055, the ageing index will surpass 100, indicating more elderly population compared to young population.

Other indicators of population ageing include parent support ratio and potential support ratio. Both ratios estimate the generational support to older persons in the population. The parent support ratio is the number of oldest-old (persons aged 85 years or over) per one hundred persons aged 50 to 64 years, The potential support ratio refers to the number of persons aged 15 to 64 years per every older persons aged 65 years or over (UN, 2002).

CHARACTERISTICS OF OLDER MALAYSIANS

One of the most significant aspects of population ageing in Malaysia the fact that it is happening at lower levels of development compared to other countries. Like most developing nations, the speed of population ageing is way more rapid than the developed states and the growth of the aged population. The characteristics of older Malaysians are also deliberated in terms of sex, ethnicity, geographical dispersion and area density. These cross-cutting dimensions will result in different ageing experiences for the older population.

Ageing at Lower Levels of Development

The bubbles in Figure 6 show the comparative size of aged population in the selected countries in relation to the gross national income. As a case in point, many countries in Asia are getting old before getting rich. Thailand's share of older population is almost similar to Singapore's but their GNI per capita is nowhere near comparable. Compared to Malaysia, Thailand, Sri Lanka, Vietnam and many other Southeast Asian countries are ageing rapidly with a notable exception that is the Philippines.

The size of Malaysia's aged population among the ASEAN nation is still much smaller compared to Indonesia, Vietnam, Thailand, and the Philippines. It is however, larger than Singapore, Brunei, Cambodia, and Lao PDR. Comparatively Singapore has a very small percentage of the aged population and a high gross national income per capita, while China has the biggest percentage of aged population but her gross national income is much smaller than Singapore. Hence, it will be a bigger challenge for China to design policies and programmed compared to Singapore. On the other hand, for Malaysia the magnitude of the aged problem is

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somewhat still limited as presented by the graph. However, we are ageing at lower levels of development and we are ageing at a rapid speed. Therefore there is an urgency to prepare the nation for the eventuality as it takes more than a decade for social institutions to change. Strategic approaches need to be designed to avert the crisis of old age in Malaysia and at the same time addressing the needs of other sectors of the population.

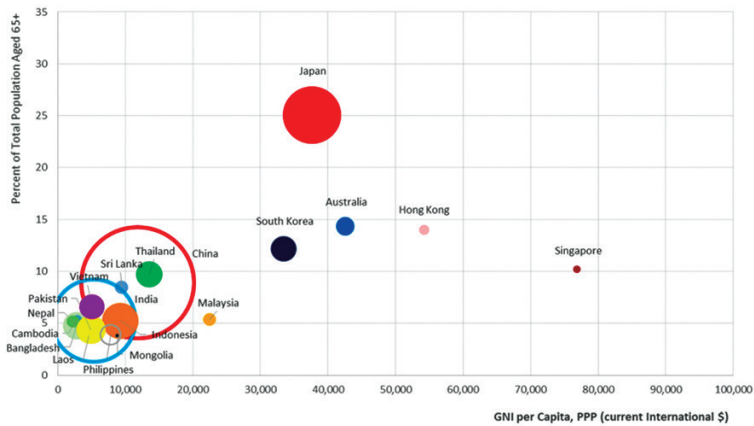


Figure 6 Ageing at Lower Levels of Development, 2013

Source: Author's calculation based on the World DataBank (World Bank, 2014)

Speed of Population Ageing

The speed of growth of the aged population is alarming especially for the developing nation (Figure 7). In developed nations the process of population ageing is in tandem with the development of social infrastructure and the nations were rich before they become old. On the other hand, in the developing countries they are becoming older before becoming rich as noted by the former director of the World Health Organization during the Second World Assembly on Ageing 2002. The figure showed that France took over

100 years to double her population aged 65 years and over from 7 percent in 1865 to 14 percent in 1980. Similarly, Sweden took 85 years, while United States took 68 years and the United Kingdom took 45 years. Japan only took 26 years to double her population aged 65 years and over from 7% to 14%. Now one in four of Japan's population is aged 65 years and over (Kinsella and He, 2009).

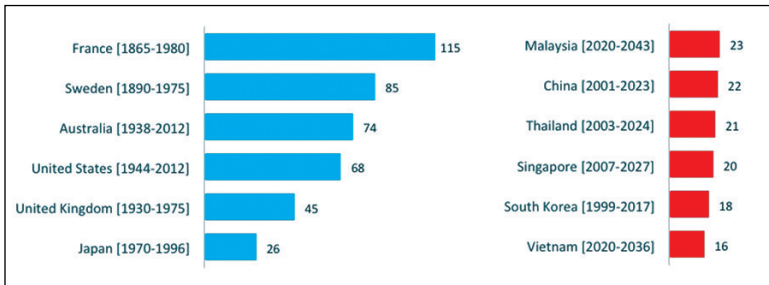


Figure 7 Speed of Population Ageing in Selected Countries

Source: Kinsella & Gist, 1995; Author's calculation based on the International Data Base (US Census Bureau, 2013)

The developing countries at the turn of the millennium showed much faster increase. China will only take 22 years to double her population aged 65 years and over in from 2001 to 2023, while Singapore and Korea will only take 20 and 18 years, respectively. Malaysia will take about 23 years to double her population aged 65 years and over. Vietnam will only need 16 years to make the same transition. Lower fertility rate, longer life expectancy and good public health care in developing countries contributed to the rise of the aged population. Nonetheless, the rapid increase is not in tandem with the resources needed to cater to the needs for aged care and services as noted earlier.

The cut-off age of 65 years old and the 7% mark has also been used to indicate aged nation status. Singapore in the year 2000

achieved an aged nation status when older persons aged 65 years and over make up 7% of the island's total resident population (UN, 2013). Malaysia's population will comprised of 7 percent aged 65 years and over in 2020. The year 2020 is very significant for Malaysia as she aimed to achieve a developed and high income nation. Nonetheless, the demographic indicators also revealed that Malaysia will become an aged nation status by 2020. This implied that Malaysia has to be fully prepared to accommodate the changing demand for an aged nation.

Growth of Older Population

The figure below represents the growth of older population in Malaysia from 1950- 2100. The number of older persons 60 years and over show an increasing trends since 1960. A notable increase in percentage of older population started in the year 2010 when it increased by more than 1.5% in 10 years. They have doubled over the last twenty years, from 1.02 million in 1990 to 2.19 million in 2010. This figure is expected to hit 3.52 million or 10.71% of the total population in 5 years' time. During this period, 1 out of every 10 persons in Malaysia will be and older persons. The total population of Malaysia will reduce gradually starting from the year 2070 onwards.

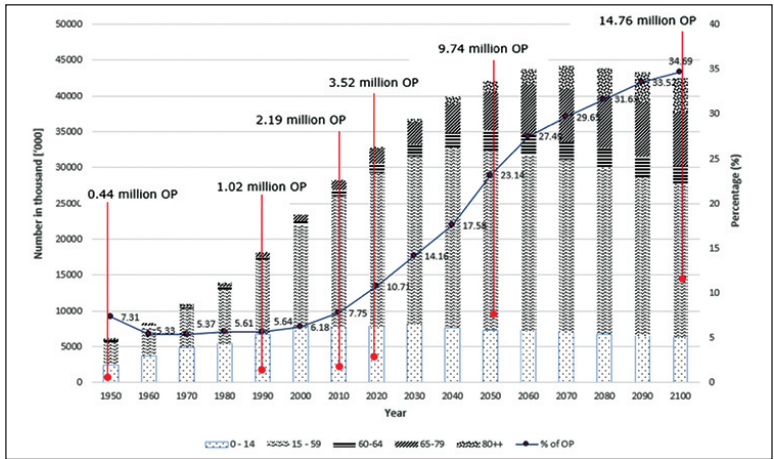


Figure 8 Growth of Older Persons in Malaysia, 1950 - 2100

Source: World Population Prospects: The 2012 Revision (UN, 2013)

Older persons in Figure 8 are categorized into three age cohorts, those in their 60s (60-69 years), 70s (70-79 years) and 80s or older (80 years and over). The data from the United Nations' population database clearly indicated the steady growth of the oldest-old age group. From 1950-2050, more than half of the older Malaysians is from the 60-69 age group. Starting from the year 2000, the share of the older population aged 70 years or older is growing and will increase substantially. Percentage of the young-old is projected to decline over the next century compared to the older age groups.

Population Ageing in Malaysia

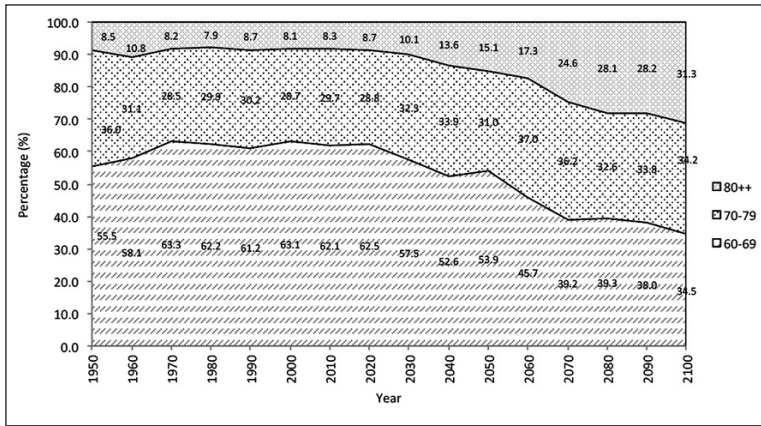


Figure 9 Growth of the Older Population in Malaysia, 1950 - 2100

Source: World Population Prospects: The 2012 Revision (UN, 2013)

Looking at the octogenarian (80+), the composition seems to hover around 8% between 1970 and 2020. From 2030, octogenarians is projected to comprise ten percent of the older population and will triple over the next four decades. By the year 2100, all three age cohorts will have equal share of at least 30% of total population age 60 years or over in Malaysia. As noted by Loke and his colleagues (2013), older Malaysians recorded higher levels of disability within similar age cohorts when compared to older Australians. With the growth of the old-old and oldest-old in the population, there will be higher functional disabilities and frailty in the society. This calls for special services to address the needs of frail and disabled older persons.

Sex and Ethnic Differences

Gender is another salient feature in population ageing as the demographic characteristics between male and female older persons are quite distinct. Female older person is blessed with longer life

expectancy and many will outlive their spouses. Therefore, many older women will be widowed (Hamid et al. 2006, DOSM, 2013). Nonetheless, women and men experience different life trajectories across their life span which leads to variant ageing experiences. This leads to the feminization of old age and this is a universal phenomenon.

The ethnic dimension of Malaysia's population characteristics provides different ageing experiences. In terms of life expectancy, female Chinese life expectancy at birth is the longest with 75.0 for male and 79.7 for female, followed by Bumiputera with 71.3 for male and 76.1 for females in 2013 (DOSM, 2014). Similarly, life expectancy at age 60 favours ethnic Chinese, where males can expect to add another 19.6 years and females add another 22.3 years. Bumiputera and Indian males can expect to add another 17 years, while Bumiputera and Indian females can expect to add another 20 years. Hence, ethnic Chinese, due to their longevity in life, recorded a higher number of aged population compared to other ethnic groups (Table 1).

Table 1 Life Expectancy at Birth and at 60 years by Ethnicity, Malaysia, 1990 - 2013

Life Expectancy	1990*		2000		2010		2013e	
	Male	Female	Male	Female	Male	Female	Male	Female
At Birth								
Total	68.9	73.5	70.0	74.7	71.9	76.6	72.6	77.2
Malay & B.	69.0	72.4	69.0	73.3	70.7	75.4	71.3	76.1
Chinese	70.6	76.3	72.4	77.6	74.4	79.1	75.0	79.7
Indian	64.4	70.4	65.7	73.5	67.6	75.7	67.9	76.2
At 60								
Total	16.1	18.4	16.7	19.0	17.9	20.1	18.3	20.6
Malay & B.			15.9	17.8	17.1	19.4	17.6	19.8
Chinese			18.1	21.1	19.1	21.7	19.6	22.3
Indian			15.2	19.1	16.9	19.8	17.4	20.3

Source: Department of Statistics (1986; 1993; 2002; 2013)

* Peninsular Malaysia Only

Table 2 Number and Percent of Older Population (60+) in Malaysia by Ethnicity, 1980 & 2040

Year	Number in Thousand ('000)					Percent (%)				
	Malay & Bumi.	Chinese	Indian	Others	Malay & Bumi.	Chinese	Indian	Others	Others	
1980	381.8	311.6	60.1	5.9	4.69	6.99	5.05	6.26	6.26	
1990	568.4	359.3	77.0	10.8	4.92	7.20	5.47	7.33	7.33	
2000	804.2	501.0	93.9	12.5	5.64	8.80	5.59	4.62	4.62	
2010	1,242.90	777.6	150.3	12.0	7.09	12.16	7.88	6.32	6.32	
2020	1,889.30	1,153.80	254.7	21.1	9.12	16.90	12.15	6.89	6.89	
2030	2,709.10	1,540.30	373.5	33.9	11.42	21.87	16.82	8.70	8.70	
2040	3,704.30	1,854.60	473.9	47.0	14.23	26.13	20.99	9.85	9.85	

Source: Department of Statistics (2001; 2011; 2012)

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From Table 2, it is evident that the different ethnic rates of population ageing will persist, although the share of the older Malaysian Chinese will shrink. Older Malays and Bumiputera makes up the majority of the older population in Malaysia at 56.9% in 2010. The ethnic Chinese community will register the highest rate of population ageing at 12.2% in 2010 and this will grow to 21% in 2040.

Geographical Distribution

In the 2010 census below also show the rural-urban divide in population ageing (Figure 10). Nevertheless in the future the rural-urban divide might not be as prominent as 70 per cent of Malaysia is now urbanised (DOSM, 2014). The heterogeneity of her aged population means that the approach taken to cater for the needs of this segment of her population cannot be a one size fit all approach.

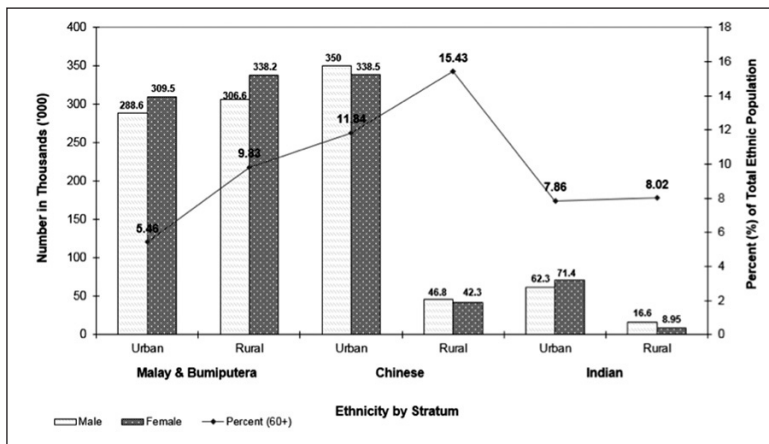


Figure 10 Distributions of Older Malaysians by Ethnicity, Stratum and Sex, 2010

Source: Hamid & Chai, 2013

The geographical distribution of older Malaysians by state is presented in Figure 11. From the the 2010 census, the state with the highest number of older persons is Selangor, followed by Perak, Johor and Sarawak. The states with the highest percentage of older persons, however, is Perak (11.9%), Perlis (11%), Pulau Pinang (10.2%) and Malacca (9.7%). The above picture clearly shows the state of Perak is the most aged state and further analysis at district levels also support similar patterns of ageing. This distribution implies population ageing is happening at different rates in each state. An additional dimension to their geographical distribution is the density of older persons. Local planning for older persons must take into consideration of the size, percent and density of the elderly in a given area to identify suitable solutions. Further, there is a greater role of the local governments to be ready with infrastructure and facilities to cater for the aged population in the locality and to promote well-being of their older population who are also rate tax payers.

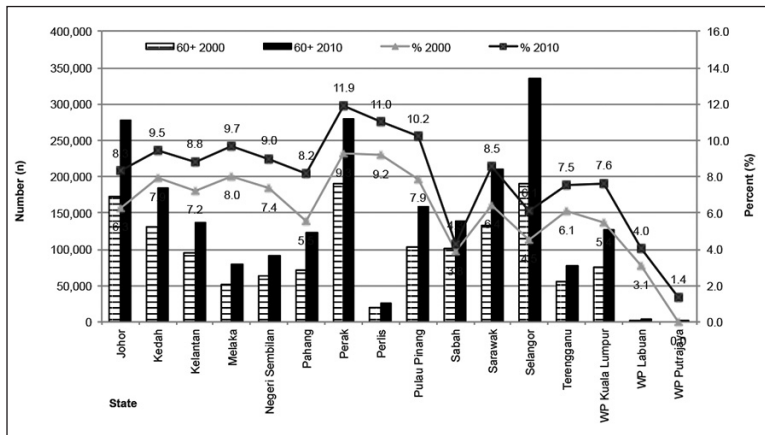


Figure 11 Size and Percentage Distribution of Older Population by State, Malaysia, 2000 & 2010

Source: DOSM 2011; 2005

Population Ageing in Malaysia



Figure 12 Ageing Index by District, Malaysia, 2010

Source: Author's calculation based on the 2010 Census (DOSM, 2011)

Using the 2010 census data, the author developed the geographical distribution of ageing index by districts in Malaysia (Figure 12). Four districts in Peninsular Malaysia and two districts in Sarawak recorded ageing index of more than 50%. These districts comprised of a lot more aged population than younger population living in the districts. Sabah recorded higher number of districts with ageing index of less than 25%, indicating a young population age structure. Districts with ageing index more than 50% need to develop services to meet the demand of their aged constituents.

POLICIES ON AGEING IN MALAYSIA

The Government of Malaysia had taken step after the 1st World Assembly on Ageing held in Vienna, Austria in 1982 to develop a National Policy for the Elderly (NPE) in 1995 and a year later developed the Plan of Action for the said policy. The Policy and Plan of Actions were implemented for several years and the Government decided to conduct a review of the policy and plan of action in 2008

to make it more current and relevant for the present and future needs. The new National Policy of Older Persons and Action Plan was design for 2010-2020. The National Policy on Older Persons and the Action Plan were endorsed by the government in 2011. The Ministry of Health developed a National Health Policy for Older Persons in 2008, however, this policy runs concurrently with the National Policy for Older Persons which is multidimensional in design as health is crucial for the well-being of older Malaysians.

The new NPOP incorporated themes from the Second World Assembly on Aging (2002) in the overall framework and adopted the active and productive ageing approach to ageing and development in Malaysia. The amended NPOP is under the purview of the Ministry of Women, Family and Community Development (KPWKM) through the Department of Social Welfare. The scope of implementation may be biased towards the welfare-oriented approach. The National Consultative and Advisory Council of Ageing (NACCE) established in 1996 is the main body that overlooks at the implementation of the policy status of the NPOP and is chaired by the Minister of Women, Family and Community Development. The councils members comprised of the chief secretaries or representative of relevant ministries, senior citizen related non-government organizations, and individuals who experts in gerontology. Membership to the council is by appointment by the Minister of Women, Family and Community Development for a three year term. The council meets twice a year.

On other hand, the technical matters of the policy are handled by the Technical Committee chaired by the Chief Secretary of the Ministry Women, Family and Community Development. This committee meets more frequent than the Council in a year. In addition, seven sub-committees i.e. the sub-committee on health (chaired by the DG of Health) , sub-committee on social and

recreation (chaired by the Department of Social Welfare), sub-committee on education and spirituality (chaired by the Ministry of Education), sub-committee on housing (chaired by the Ministry of Housing and Local Government), sub-committee on economy (chaired by the Economic Planning Unit), sub-committee on work (chaired by the Ministry of Human Resource), and the sub-committee on research and development (chaired by the Ministry of Science, Technology and Innovation). The amended NPOP structure and organization is similar to the previous policy and added indicators of achievement for monitoring purposes.

Several initiatives have been developed to arrest the population ageing issues. Here only government lead initiatives are discussed as the author does not have access to information on the private sector initiatives. These initiatives can be grouped under a) healthy ageing, b) old age financial security, and c) community activities and social care.

a. Healthy ageing

The Ministry of Health is notable in developing healthcare services for senior citizens. The Ministry piloted the first elderly health care programme in 1996 and have expanded it services nationwide to almost all primary health centers (PHC) and in 2009, the coverage stands at 78% of the total public funded health centers. The health care package offered under this programme is a combination of (a) Health education and promotion, (b) Health screening and assessment, (c) Medical examination, treatment, counseling and referral, (d) Home visit and home nursing, (e) Rehabilitation and exercise, and (f) Recreational and social welfare. The Ministry also established over 250 senior citizens clubs affiliated with the government health centers to encourage health related activities

and usage of health facilities among the older population under the elderly health care programme.

In terms of practice, several guidelines were established to provide the framework for service delivery to their clientele. These guidelines are Clinical Practice Guidelines on Management of Dementia in 2003 and updated in 2009 and the guideline on oral health care for the elderly in Malaysia. The latest initiative, the Elder Healthcare Act to ensure quality care have been put in motion and going through the due process. There has been in the news of private sector initiatives to develop senior housing in Malaysia. Many are in the development phase and so far the Sepang Gold Coast project phase is completed. The KPJ group has also established a dedicated rehabilitation hospital and day center in Tawakal Hospital in Jalan Pahang. Econ Care an outfit from Singapore is expanding its service in the Iskandar development corridor in Johor.

b. Old age financial security

Financial concern was reported as the second in hierarchy of concerns in old age, after health by Malaysian aged 18 year old and above (UPM, 2010). Recognising that financial health is important in old age, several initiatives have been developed to encourage savings. The government has extended the retirement age for both the private and public sector employees to age sixty. The extension in mandatory retirement age would prolong the accumulation period for another two years. Consequently, the calculation for pension value is amended accordingly. With this amendment, civil servants can expect to receive a higher pension value due to a higher last drawn salary. Furthermore, a new Private Retirement Scheme (PRS) was developed as alternative saving channel to encourage saving for old age (Hamid & Chai, 2013). Members can choose to invest through an approved panel of eight financial institutions. Young

Malaysians who subscribe to PRS account and invested RM1, 000 in the same year will receive an additional RM500 one-off contribution from the government. This incentive will only be made available for 5 years from the starting year 2014-2018 (www.ppa.my/prs). In addition, the 1Malaysia Retirement scheme managed by the Employees Provident Fund (EPF) was developed for unemployed persons such as housewives, youth and others without formal employment. The people who subscribe to this scheme would enjoy the same benefit as other EPF members. To promote the scheme, the government will match the saving up to RM120 per year for three years from 2014 onwards.

The most significant development with regard to financial security is the announcement of the minimum wage for private sector workers. This development would ensure that the Rakyat earn a decent income and possibly save more for their old age. Bank Negara's effort to promote financial literacy among the younger population will also indirectly improve the situation of the future aged as they would have better financial planning, hence improving their future financial situation. In addition, the services of Agensi Kaunseling dan Pengurusan (AKPK) in term of debt management would hopefully ameliorate bad financial behaviour and promote positive habits towards future finances.

c. Community activities and social care

There is limited information regarding new development in the public sector regarding social care. The author is aware of the plan to establish 23 more senior citizen activity centers (PAWE) from the present 22 centers. The Department of Social Welfare has also initiated an expansion of the home help programme nationwide. The Institute of Gerontology, UPM initiated a lifelong learning programme based on the University of the Third Age (U3A) model

since 2007 and has been collaborating with the Community College Division of the Ministry of Education to expand the programme nationwide. This effort is in line with the lifelong learning blue print of the ministry (MOHE, 2011).

Corporate organizations are now required to report their corporate social responsibility activities in their annual report. As such many corporate bodies through their foundations are implementing social care initiatives in Malaysia as well as in countries they have their businesses. For example in 2013, Maybank and CIMB Bank spend RM66.5 million and RM 11 million respectively (Sustainability Annual Report 2012, 2013) to sponsor community and social care activities, albeit, not all are spend on old age activities. This shows the serious commitment on the part of corporate Malaysia to promote the well-being of local communities.

Translating Research Into Action

Researchers have always been concerned with the utilization of research findings in the planning of public policies and programmes. I was fortunate to have received grants from the Government of Malaysia and the United Nations Population Funds to conduct research and developed intervention programmes based on the findings. This was possible as the grants were for longer duration of three to five years. The U3A programme which started as a lifelong learning initiative in 2007 has become the signature programme for the Institute. The aim of the programme is to promote healthy, active and productive ageing by older persons, for older persons and efforts are underway to replicate the programme nationally. The U3A Malaysia programme is the result of careful planning and experimentation and it has undergone several modifications. Recently, the Post-Service Division of the Public Service Department is collaborating with the Institute to promote the U3A programme to

government retirees. A unique feature of this programme is the joint involvement of the public, private, non-government organization and university partners to run and sustain the programme.

The U3A programme began as a university-driven initiative but right from the beginning plans were made for long-term sustainability and ownership by older persons themselves. In 2010, the Association for Lifelong Learning of Older Persons U3A Kuala Lumpur and Selangor was registered with the Registrar of Societies, Malaysia by U3A members. Since then, the U3A programme is being managed by senior citizens who direct all activities from scheduling, course content, evaluation and finances. Today, the Institute focus on replication and act as an advisor to the programme.

Another intervention programme running at the Institute is the Financial Empowerment of Mature Women under the funding of Citi Foundation through United Way World. This is a 5-month financial education programme designed especially for women aged between 40 and 60 years with household income less than RM 3,000 a month. The program works in collaboration with the Universiti Putra Malaysia Women's Association (PERMATA) and the National Council of Women's Organisations Malaysia (NCWO). A key aim of the program is to help women become financially independent and empowered in their old age. The curriculum includes developing personal savings, investment and retirement plans, as well as inculcating positive financial behaviour to help women living in towns, suburbs and surrounding areas within the Klang Valley. It was developed based on training needs assessment of the participants.

The Institute, in collaboration with the National Council of Senior Citizens Organization (NACSCOM) developed an intervention programme to train senior citizens to become instructors and facilitators of ICT courses. The knowledge transfer

programme's main objectives are to promote ICT knowledge among the older person and to reduce the digital divide among older persons. This peer learning strategy (older persons to older persons) would hasten the knowledge transfer and promote a positive learning environment.

MOSAIC OF ISSUES

As describe in the Quran surah Ghafir, verse 40:67(Yusof Ali)
It is He Who has created you from dust then from a sperm-drop, then from a leech-like clot; then does he get you out (into the light) as a child: then lets you (grow and) reach your age of full strength; then lets you become old,- though of you there are some who die before;- and lets you reach a Term appointed; in order that ye may learn wisdom.

The above verses prescribed the stages of human development and the full cycle of life from weakness, strength and weakness again. The process is gradual, cumulative with the passage of time. Baltes, Reese and Lipsitt (1980) describe three major influences on human development, i.e, the normative age-grade; normative history- grade and non-normative events. The normative age-grade influences in the life course that are related with the chronological age and accepted as the norm in a population or culture. For example in Malaysia, the norm for age of retirement was 58 in 2008 but it has changed to 60 in 2012.

Thus, age-grade norm may also change in line with the normative change of a particular event in the society. The normative history-grade relates to influence of historical time on the life course of majority of the people in a society. In Malaysia's case, the Japanese occupation and the ICT revolution can be identified as the history-grade influence. The non-normative influence is events that happen to individuals and may affect their life course. For

example, an automobile accident that leads to physical handicapped which forces that individual to change occupation and life style. All three influences play a major role in determining the life cycle of the individual as well as the increasing heterogeneity of cohort as people age.

The demographic situation presented in the previous sections highlight the rapid increase of the aged population in Malaysia. Nevertheless research on population ageing issues is rather nascent. This section will deliberate on the well-being of older Malaysian based in the well-being diamond domains (Hamid et al. 2010), namely health, economic, social, psycho-spiritual and environmental issues. It is important to reiterate that ageing is a lifelong process and the situation of the aged depend very much on their earlier life trajectories and experiences.

Health Domain

The definition of health as stipulated in the World Health Organization's constitution is "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" and "*the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition*" (WHO, p. 1).

The government of Malaysia, through the Ministry of Health, has operationalized the above responsibility with extensive primary health care services throughout the country that have resulted in impressive population health improvements. The public healthcare system is basically universal as the access to health services is just through a nominal payment of RM1 for outpatient treatment and RM5 for specialist care. In addition, a robust private healthcare system co-exists alongside and provides an alternative to the often

congested public healthcare system. For senior citizens, they are exempted from paying any fees, even for standard medication and prescriptions for treatment of chronic diseases such as hypertension, hypercholesterolemia and diabetes.

The situation as it is clearly points to a heavily subsidised public health care system where the government's share of the total health expenditure stands at 55% in 2012 (WHO, 2014). Health outcomes, in relation to ageing, are translated into population longevity, reduced mortality and compression of morbidity. As shown in Table 1, the increase in life expectancy at birth and at age 60 for Malaysians clearly showed marked improvement since the 70's. Advancing age increases the risk of having problems such as chronic diseases, sleep disruption, psychological problem, and cognitive decline in older people. These factors are significantly associated with health. Besides age, factors such as socio-demographic factors, environment and isolation can influence health and quality of life among the elderly.

Chronic diseases

It has been noted that older people often suffer from chronic illnesses of diabetes mellitus (DM), hypertension (HT), and vascular diseases (MOH, 2012; Eshkoo et al., 2014a). DM is one of the most common chronic diseases in the elderly. The prevalence and morbidities associated with DM are on the rise among older adults (Eshkoo et al., 2014a). It is an age-related chronic disease associated with glucose intolerance and manifests less classical symptoms in the elderly patients. Furthermore, chronic comorbidities have negative effects on psychological well-being (Momtaz et al., 2010) and vice versa. For example, loneliness is an important factor that may increase the risk of hypertension in the elderly (Momtaz et al., 2012a).

Age also adversely influences the heart in older adults. Age-related changes in the cardiovascular system can occur due to the intrinsic cardiac aspects of senescence, primary cardiac disease, and the effects of comorbid conditions. Cardiovascular diseases have great impact on society and public health. However, the prevalence of cardiovascular diseases related to HT, dyslipidemia, hypercholesterolemia, DM, and coronary or carotid artery disease is increasing (Eshkoo et al., 2014b).

Cognition, mental and psychological health

Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community (WHO, 2005). As such, mental health is an integral component of one's health and well-being. The National Health and Morbidity Surveys (NHMS) have found that mental health problems in the population have increased from 10.7% in 1996 to 11.2% in 2006 (IPH, 1999, 2008, 2011), measured using GHQ. Advancing age increases the risk of decline in cognitive function. As the number of older persons is getting larger, mental or psychological health becomes a major concern for the public healthcare system around the world. Mental health problems can happen due to several factors such as genetics, chemical imbalances in the brain, or psychosocial and environmental stressors. Nevertheless, the prevalence of mental disorders of older population in the community has not been properly established. In a study conducted in the rural areas by Sherina and her colleagues reported a prevalence rate of 7.6% for depression and 22.4% for cognitive impairment (Sherina et al, 2004). Krishnaswamy (1997) conducted community screening in an urban setting and found a 6% prevalence for dementia among

those aged 65 years and above. A dementia prevalence rate of 14% was found for those aged 75 years and above. A nationwide community-based study by Hamid and her colleagues reported a prevalence rate of 14.3% for dementia with significant risk factors for old age, female gender, no formal education, Malay and very poor self-rated health (Hamid et al. 2010).

Oral health and sleep

An important component of overall health, well-being, and quality of life in older people is oral health. The Oral Health Division (MOH, 2004) reported that over 90% of caries were noted among older persons aged 65 years and over and 51% of elderly aged 60 years and over had some form of prostheses. In a paper by Eshkooor and her colleagues (2014b) found that the use of dentures is associated with greater likelihood of falls. Another major determining health condition factor in elderly is sleep quality because of association with accidents, mental problems, cardiovascular diseases, cognitive impairments, executive functions, and quality of life. A study in 2011 found that 41% of older respondents experienced sleep disruption (Eshkooor et al., 2013) and results have shown that age (OR = 1.02), social isolation (OR = 1.33), and hypertension (OR = 1.53) significantly increased sleep disruption in respondents (Eshkooor et al., 2014). Sleep problems in the elderly is associated with negative effects of specific medications, anxiety, physical inactivity, depression, and cardiac problems such as myocardial infarction (MI), congestive heart failure, and angina. Studies have found that both heart disease and hypertension can affect sleep quality in the elderly (Eshkooor et al., 2014b).

Falls and the risk of falls

Falls occur in about 30% of those over 65 years and 40% of those over 80 years (Eshkoo et al., 2014a), due to age-related changes in muscular strength, flexibility, balance control, and walking stability. In addition, the risk of falls in elderly individuals is associated with cognition, physical activity, sleep problems, and environmental factors. A higher risk of falls in the elderly is usually related to mobility dysfunction and balance problems. Ashari and her colleagues (2014) noted that the incidence of falls among older Malaysians can be commonly attributed to problems in turning. However, the causes of falls are multi-factorial including intrinsic and extrinsic factors as well as variables related to activities. Intrinsic factors are the patient's own problems such as dizziness and extrinsic factors are environmental factors such as slipping. Environmental properties along with medications and comorbid conditions increase confusion and disorientation and the risk of falls increase significantly with dementia. Falls can cause problems such as distress, anxiety, isolation, lesions, fractures, difficulties of rehabilitation, limitations of activities, economical costs, and even death. Physical activities can reduce the risk of falls by increasing cognitive abilities, delaying age-related changes as well as maintaining and/or improving physical health (Eshkoo et al., 2013).

Perceived health or self rated health and physical activities

Perceived health status is a good indicator for well-being and quality of life of the elderly. The perception of health status is differentiated by ethnicity and gender. Hamid and her colleagues (2006) noted that 69% of older Malay women perceived a more positive health status compared to their peers than the non-Malays, but in general the latter scored higher on self rated health measures. Masud (2006) noted that older men were more positive about their health (74%)

compared to older women (62%). Similar findings by Hamid and her colleagues (2010) were found but the effect disappears when self-esteem scores were controlled.

Perceived health status influenced the participation of older persons in all types of daily activities (Ng, Hamid & Tey, 2010). Justine and Hamid (2010) reported that multicomponent exercise can improve the quality of life of institutionalised older persons.

The management of health in the elderly individuals seems to be a difficult task due to many intrinsic and extrinsic factors. It is expected that a good knowledge of details and coordinated efforts can play important roles to improve the health condition in older people. Giving support is one of important factors to increase self-perception of health status among elderly. Thus, older adults should be encouraged to participate in productive activities such as caring for, helping others and volunteering (Momtaz et al., 2014). Social support plays important roles in health perception and healthy sleep in older adults. Accordingly, social isolation and dissatisfaction with social activities can elevate health damages in the elderly living in communities. Factors such as spiritual beliefs can also help to increase the function of mental power and maintain health in the elderly (Yahaya et al., 2012).

Economic Domain

The economic issues faced by older persons are the results of a cumulative lifelong experience along the life course. An individual's life situation, socioeconomic background and lifetime opportunities will determine their economic status in old age. Older persons who are advantaged in their earlier life stages would have better asset and wealth accumulation than those who were disadvantaged. As such the financial well-being of older persons is varied depending on their personal circumstances. Financial situation in later life is

the result of financial and wealth accumulation from their younger days. In addition, older Malaysians are living longer and they may outlive their savings. Here the discussion will focus on financial wellbeing, poverty and social protection in old age.

Financial wellbeing

Majority of the current cohort of older persons belong to the pre-Merdeka cohort where educational opportunities was limited and only a few were able to achieve tertiary level education. In the 2010 census, only 3.7% of the older persons aged 60 years or over received tertiary education while 56.5% did not have any formal education or schooling opportunities (DOSM, 2013). Over time, it is expected this will change significantly but at this juncture, the low level of education is closely associated with non-formal sector employment. Most of the elderly today simply did not have sufficient income that is conducive for savings for their old age. In addition, poor savings behaviour further compound the low saving rates amongst them (Hamid & Masud, 2011).

Adult Malaysians including older persons only save when they have extra or disposable money. This attitude has significant implications on current and future household savings level. The poor saving habits may lead to cash flow problems and household financial crisis during emergencies. Poverty may threaten the wellbeing of the older persons who has limited sources of income. As noted in Hamid and her colleagues (2010), financial issues were the top concern of Malaysians after health matters in old age. There have been a number of publications that examined the sources and value of income of the elderly in Malaysia (Hamid, Masud & Chai, 2004; Masud, Haron & Gikonyo, 2008; Chan, Masud, Hamid & Paim, 2010; Ng & Hamid, 2013). A survey in 2008/09 found that 19% of the older respondents reported no sources of income. From

Table 3, it is evident that cash transfers from children remain one of the most common form of income for older persons (52.9%), even if the average value is low (RM386.29). Bivariate analysis found that older women, older Malaysian Chinese, older persons in urban areas and non-working elderly are more likely to receive money from their adult children.

Table 3 Sources and Value of Monthly Income of Older Persons, 2008/09

Sources of Income	Older Persons (60+) [n = 1,309]			
	n	%	M	SD
Salary / Wages	142	10.8	944.26	1,146.96
Business	137	10.5	1,179.82	1,806.76
Rent	37	2.8	643.78	508.80
Children	693	52.9	386.29	381.37
Relatives	18	1.4	676.11	1,844.30
Interest	7	0.5	1,153.83	1,754.43
Welfare	31	2.4	191.86	125.94
Pension	166	12.7	809.38	482.37
Agriculture	140	10.7	617.62	728.15
Annuity	2	0.2	662.50	-
Others	2	0.2	392.16	333.31
Total	1,060	81.0	814.55	1,109.80

Source: Hamid et al. (2010)

Most of our studies have consistently shown that older persons have low income in old age and small cash savings but many owned properties and land. 61.1% of the older respondents in the

study above are owners of their current residence (Hamid et al., 2010). This is consistent with the situation of older persons in other developed countries who are asset rich but income poor.

Poverty in later life

The elderly is at risk of poverty in old age. Data based on the Household Income Survey 2009 showed that 3.6% and 0.6% of the households headed by those aged 65 years or more are poor or hardcore poor (Economic Planning Unit, 2012). As many of the older persons are dependent on children for financial support (Masud, Haron, & Gikonyo, 2010; Hamid & Masud, 2011), they are susceptible to changes in societal norms and values. The practice of giving financial support to our aged parents is culturally ingrained in the society and being practiced by all races. Nevertheless, this source of income may not be reliable and enough to cover the rising cost of living in old age. The issue of poverty in later life is often masked by strong familial and community support in Malaysia, where the destitute and poor elderly end up in public-funded or voluntary sector operated shelters or homes. Much more is needed to understand the risks of lifelong low wages and its impact on savings and poverty in old age.

Social protection in old age

There have been extensive discussions on social protection in old age in the literature by local researchers (Hamid & Chai, 2013; Ong & Hamid, 2010; Thillainathan, 2002; Ragayah, Lee & Saaidah, 2002). In Malaysia, the Department of Social Welfare (DSW) is the key government agency that focuses on the protection and assistance for older persons, often in partnership with voluntary welfare organizations. The DSW focuses on two broad category of welfare services, 1) financial assistance programs and 2) institutionalization

services. The Financial Assistance Scheme for Older Persons (Skim Bantuan Orang Tua, BOT) is a non-contributory, means-tested social assistance scheme to support the poor elderly aged 60 years or over so that they can continue to stay in the community. It is a federal-funded cash transfer program for elderly who have no sources of income and no family support to sustain their livelihood. In 2013, RM540.1 million was disbursed to 142,124 older persons who received RM300 a month (Figure 13). It is the fastest growing federal-funded financial assistance program, considering its share of all DSW cash transfers grew from 17% in 2005 to 35% in 2013. In 2008, the DSW introduced the Bed-ridden Disabled or Chronically-Ill Carer Aid (Bantuan Penjagaan OKU Terlantar) to reduce the burden of full-time family caregivers caring for the disabled or chronically-ill who are bedridden.

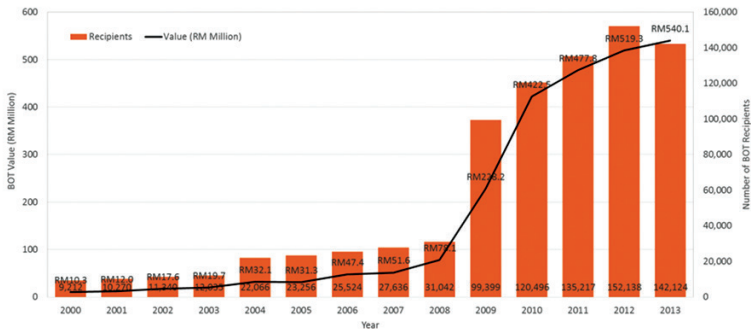


Figure 13 Number of Recipients and Value of BOT Scheme, 2000-2013

Source: Department of Social Welfare (various years)

It must be pointed out that Malaysia is not a welfare state and the government regards “the role of social welfare services as marginal to the development process” (Ragayah, Lee & Saaidah, 2002). Having a secure personal finance is important as Malaysia do not

have a universal social security system. State welfare assistance, including via zakat and baitulmal, is often considered as the last resort when all other avenues have been exhausted. Social services for older Malaysia such as home help services are mostly supported by the government, with the cooperation and involvement of the civil society organizations such as MPKSM, USIAMAS and GEM.

Since welfare assistance is an exception rather than the norm, most of the social protection for the elderly in Malaysia comes in the form of retirement savings through the national provident fund or EPF. The Employees Provident Fund is a mandated defined contribution plan for private and non-pensionable public sector employees established in 1951. In 2011, there were about 6.3 million active EPF members with total savings of almost RM328 billion (EPF, 2011). Unfortunately, its adequacy as a retirement savings for old age is in doubt as average life expectancy grows. Even though EPF introduced a minimum basic savings concept in 2007, a majority of EPF members today do not have the required minimum RM120, 000 in their Account 1 at the withdrawal age of 55. The average savings of active EPF members at age 54 years have increased from RM75,086 in 2000 to just RM149,217 in 2011. Although the civil service pension is better as a defined benefit plan directly financed through tax revenue under the Pensions Act 1980, the government spent RM11.52 billion or 7.6% of the Total Current Expenditure (TCE) on pension and gratuities on 383,989 pensioners and 144,071 pension recipients (derivative and dependent's pension) in 2010. The EPF and civil service pension offers a good study in contrast on adequacy, sustainability and coverage of social protection for old age in Malaysia.

Our social security system is limited by coverage and accessibility (Ong and Hamid, 2011). Nevertheless, the government

of Malaysia has expanded the social protection program to include all the 5 pillars as suggested by the World Bank. The first Private Retirement Scheme (PRS) the Security Commission Malaysia in 2012 heralds the development of a private pension industry in Malaysia. Self-employed individuals and informal sector workers without fixed income (including housewives) can also participate in the EPF-managed Malaysia Retirement Savings Scheme (SP1M) started in 2010. Malaysians have many options when it comes to savings instruments via the Merdeka Savings Bond (Bon Simpanan Merdeka) for senior citizens or one of the many unit trusts or funds under the Amanah Saham Nasional Berhad (ASNB). Older Malaysians are entitled to public transport (e.g. bus, train and rail) concession fares depending on the travel operator. Tax relief is provided for medical treatment, special needs and carer expenses for parents, but the family in general do not get much help in caring for the elderly.

Social Domain

The social domain of wellbeing covers a broad area of intergenerational relationships in later life, in particularly kinship relations, interaction and support. Due to mobility in the labour market and increasing labour force participation rates of women, the family is changing and there are significant developments that have an impact on the elderly. As older women tend to live longer and are more likely to experience widowhood, familial and kinship issues often affect them the most. In this section, we will discuss the changing family structure, living arrangements in old age, intergenerational support and care in later life as well as elder maltreatment and abuse.

Changing family structure

What is significant with the growth of the older population is the extension of the generations in the family. Malaysian's family structures are changing as a result of the demographic shifts. Family size has changed, from large family size with shorter lives to smaller family with longer lives (Hamid, 2012). This seems to be as a paradox in modern Malaysians families, where large extended families often do not translate into more resources for aged care.

The changing family structure in Malaysia is influenced by the timing of birth and deaths in the family lineage, which will determine the incidences of multigenerational family structures. Further, the lengthening of the life expectancy increases the duration of family ties. For example, Hamid and Masud (2008) noted that 29% of elderly women (aged 60 years and over) have an older parent or parent-in-law living with them. Thus, the parent-child relationships in contemporary Malaysian families may last for more than four or five decades due to longevity. Similarly, the grandparent-grandchild relationship may also be extended. Co-longevity in family ties will create complex family structures and relationships with the presence of more vertical rather than horizontal relationships.

Past national censuses have shown that only 6.8% of older persons live alone while a significant majority of older Malaysians reside in nuclear (37.5%) or extended (49.1%) family households (Pala, 2005). In the 2010 Census, 19.4% of the 6.3 million households in Malaysia is headed by older persons (DOSM, 2013).

Living arrangement of older Malaysians

In a nationwide survey undertaken in 2008 by Hamid and her colleagues (UPM, 2009), 76.8% of the older respondents aged 60 years or over lived with their children and other family members

(Table 2). Similar patterns were found in another 2008 survey on the “Patterns of Social Relationships and Psychological Wellbeing of Older Persons in Peninsular Malaysia” (Yahaya, 2009). In that study, almost two-thirds (62.6%) of the older persons were reported to have at least one adult children in co-residence although their proximity varies significantly by ethnic group (Figure 2).

The results have shown that co-residence with adult children is still the norm for a majority of the elderly, especially among the older Malaysian Indians. Both surveys showed that older women are more than twice as likely to live alone than older men, consistent with findings from the 2000 national census. Likewise, older persons in the rural areas are also more likely to live alone than the urban elderly. It would be erroneous, however, to assume that the patterns of co-residence is indicative of elderly dependency as almost two-third of the older respondents own their present residence (Table 3). The presence of multigenerational living arrangement amongst the elderly does not automatically imply dependency but the situation is very different between older men and older women.

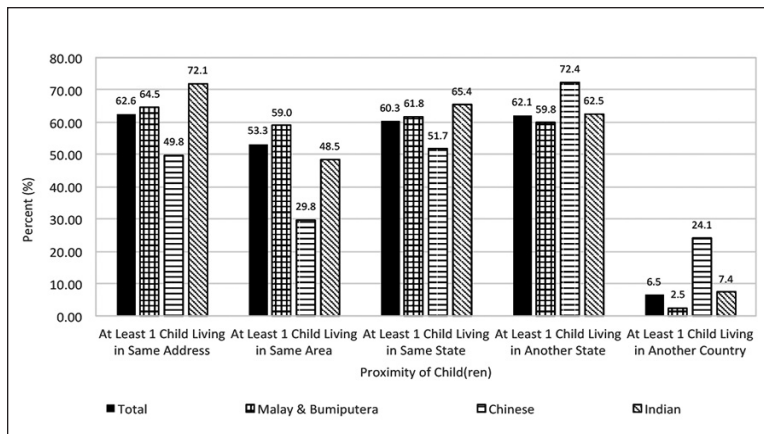


Figure 14 Proximity of Adult Children by Ethnicity, 2008

Source: Yahaya et al. (2009)

Table 3 Living Arrangement of Older Respondents by Home Ownership, 2008/09

Household Type [n = 1,309]	Owned by Self or Spouse						Owned by Others					
	Male			Female			Male			Female		
	n	%		n	%		n	%		n	%	
Living Alone	11	2.23		41	9.38		6	3.70		6	2.76	
Living w Spouse Only	91	18.46		39	8.92		12	7.41		9	4.15	
Living w Child(ren)	351	71.20		316	72.31		133	82.10		181	83.41	
Living w Parent(s)	5	1.01		3	0.69		1	0.62		2	0.92	
Living w Child(ren) & Parent(s)	13	2.64		4	0.92		4	2.47		3	1.38	
Living w Relative(s)	18	3.65		29	6.64		3	1.85		14	6.45	
Living w Non-relative(s) Only	4	0.81		5	1.14		3	1.85		2	0.92	
Total	493	100.0		437	100.0		162	100.0		217	100.0	

Source: Hamid et al., 2010

Intergenerational support and care

About 59.9% (n = 783) of the older respondents aged 60 years and over reported having taken care of their aged parent(s) in the past and 6.3% (n = 82) are still taking care of them at the time of the survey (Hamid et al., 2010). The most common form of support provided by adult children aged 40 to 59 years for their older parents is caring for them when they are sick (55%), providing financial support (47.3%) and living together with them (31.4%).

Caring for ageing parents by adult children is the predominant norm of filial responsibility in Asian families. Support and care is the natural responsibility of the family institution but it is often taken for granted. In the survey conducted by Yahaya and her colleagues (2009), each respondent was requested to identify a person “who has provided the most support” to them. Children (47.5%) and spouse (36.8%) accounted for 84.3% of the responses, followed by sons or daughters-in-law (4.0%), grandchildren (3.2%) and siblings (2.2%). The same patterns were observed in the study by Hamid and her colleagues (UPM, 2009) where children and spouse were consistently ranked higher by the respondents in their expectations for assistance in old age. Results of the study confirmed what is already considered common knowledge on the provisions of elder care in Malaysia. Traditionally, caregiving responsibilities tend to fall on wives and daughters (or daughters-in-law), and this is still very much the practice. While older men can very well rely on their wives to take care of them, older women will have to rely on their children. Questions will arise, however, on what could be done when families can no longer cope with caregiving burden for the very frail or demented elderly.

Elder abuse and maltreatment

The World Health Organization/ International Network for the Prevention of Elder Abuse (2002) defined elder abuse as ‘a single or repeated act, or lack of appropriate action occurring within any relationship where there is an expectation of trust, which causes harm or distress to an older person’. Then again, the definition of elder maltreatment varies within countries due to norms, values and cultures (American Psychological Association, 2006).

The absence of local data on elder abuse (Esther, Shahrul and Low, 2006) or maltreatment is a reflection of the low level of awareness and priority on the issue. It is important to have baseline data on elder maltreatment in Malaysia so that appropriate intervention strategies can be developed to address the issue. The Institute of Gerontology, Universiti Putra Malaysia had taken the initiative to establish the prevalence rate of elder abuse in Malaysia through its study on ‘Perception, Awareness and Risk Factors of Elder Abuse’ (2006) funded by the Ministry of Science Technology and Innovation (MOSTI), Malaysia. Findings showed that 26% respondents reported having experienced at least one incidence of abuse since the age 50 years, with emotional abuse being the most prevalent type, followed by financial/ material, physical and sexual abuse (Hamid, Abdullah and Yahaya, 2010). In 2010, the research team was provided with another grant by the Ministry of Higher Education, Malaysia to develop an instrument to assess elder maltreatment. Results of this study provide preliminary evidence of the validity and reliability for the Malaysian Elder Abuse Scale as a screening tool that may be used for assessment of elder abuse in the community and health care settings (Hamid, Momtaz, Ibrahim, Mansor, Abu Samah, Yahaya and Abdullah, 2013). The review of existing instruments shows a real need for developing more measures for elder abuse (Momtaz, Ibrahim and Hamid, 2013).

It is timely now for the government to create awareness and educate the society about all forms of elder maltreatment. In addition, a reporting system have to be developed so that older persons, family and the society can come forward or share information regarding cases of elder maltreatment.

Psycho-spiritual Domain

The National Suicide Registry Malaysia's annual report in 2011 noted that the highest rate of suicide was in the 35-44 age group (1.95), followed by the 75 or over age group (1.93). This is consistent with the 2008 NSRM report where the highest suicide rate according to age group was recorded for the older population (MOH, 2011). A study published in 2012 noted that 29.3% of the elderly experience "a lot" of loneliness (Momtaz et al., 2012) and this affects their health. It is therefore important to look into the psychological and spiritual wellbeing of the elderly despite the lack of empirical work in the area.

A study by Hamid and her colleagues found that older Muslim men displayed significantly higher levels of religiosity than older Muslim women (Momtaz, Hamid, Yahaya & Ibrahim, 2010). Higher levels of both social and personal religiosity is related to higher levels of elderly well-being. Paper by Momtaz and his colleagues (2011) showed that religiosity functions as a moderator between chronic medical conditions and psychological well-being in old age. Loke and his colleagues (2011) noted that disability from chronic illness, level of social support, religious orientation and personality traits have a strong influence on morale in the elderly. Age, sex, marital status and household income were significant socio-demographic predictors of psychological well-being among the elderly (Montaz, Ibrahim, Hamid and Yahaya, 2011). The limited work in this area focuses on religiosity as a measure of spirituality.

In most of our studies, the intrinsic and extrinsic measure of religiosity is used and it can be applied to all the ethnic groups in the country. More work is needed to further understand the role of spirituality among older Malaysians.

Environment Domain

The domain on environmental issues pertains to build environment (micro environment), neighborhood as well as the macro socio-policy environment. As a person goes through the life course, the micro and macro environment mutually shaped the outcome. This section will discuss the importance of gerontechnology, assistive technology and environment-fit issues towards age-friendly cities.

Home environment and public spaces for the elderly

Older persons are likely to be affected by the environment because of decline in health and loss of physical functions. The ecology of aging perspective posits old age as a critical phase in the life course that is profoundly influenced by the physical environment (Wahl, Iwarsson & Oswald, 2012). Syed Abdul Rashid and her colleagues (2006) studied the interior home environment where the elderly resides and found that the greatest perceived hazard is in the toilet and bathroom areas. Although the elderly living in the community were satisfied with their home environment, home modifications would go a long way in ensuring a safer environment as many older persons were not aware of the potential hazards in their homes waiting for accidents to happen. An ergonomic solution is needed based on local elderly population's anthropometric parameters (Yusuff et al., 2009).

Another major concern in relations to ageing is older drivers. Considerable attention has been directed towards the subject of

older drivers as this age group is said to have higher risk of being injured and killed in accidents. A local study conducted in Perak and Selangor in 2009 among 400 older drivers revealed that they drive about eight times a week with an average distance of less than 50 km (56.8%). About 13.6% was involved in one or more accidents for the past two years (Syed Abdul Rashid et al. 2010). Majority of them (70%) feels that driving is very important for them to be socially independent, go to work and to move around. Respondents mentioned a number of barriers to driving in old age, mostly attributed to the that attitude of other road users (63.3%), Building an aged friendly environment are of concern to encourage older persons to be more mobile and independent in later life (Syed Abdul Rashid et al. 2010).

For many older Malaysians, the fundamental conditions for ageing in place is significantly linked to issues of neighbourhood safety and proximity of worship places. A majority of the respondents (78.4%) have been residing in the same area for 10 years or more ($M = 30.03$, $SD = 21.954$). Ageing in place is more common in rural areas ($M = 35.08$, $SD = 22.891$) compared to urban areas ($M = 24.37$, $SD = 19.361$) as the study showed that the average length of stay in towns and cities is about 5 years lower ($t = 9.074$, $p < 0.001$). More in depth studies are needed to link neighborhood characteristics with life satisfaction of the elderly. In a recent paper by Yadollah and his colleagues (2014), it was noted that “increased social embeddedness resulting from social cohesion induces more tangible support for men and emotional support for women” (p. 868). Another paper by Kooshiar and his co-authors (2012) found links between living arrangement and life satisfaction, mediated directly and indirectly through social support function, using the same data.

Assistive technology and ICT knowledge

Technology can be used by older persons to adapt to the environment so that it is more accommodating to their condition and situation. Older persons generally lag behind in the adoption of modern technology in comparison to their youngster counterparts. Studies by Yusuff and her colleagues discovered that that an ergonomic approach to its design would improve the relationship between the older user and their satisfaction with the environment, thus encouraging ageing-in-place. Effort must be made to make available technologies that enhances the comfort, safety and convenience of older persons and increase the likelihood of them remaining independent in their home and community.

A key area needing more empirical evidence is the impact of ICT knowledge and skills on the elderly. A survey on the access and utilization of computers and the Internet among older Malaysians by Syed Abdul Rashid in 2006 found that older men, young-old, married and higher educated elderly have a more positive attitude towards computers. The study, however, found that only a small percentage (3.6%) of the elderly in the survey are Internet users (Syed Abdul Rashid, 2012).

The social, cultural, and physical requirements of the older users, the functions, forms, structure, and the appropriate technology all need to be considered and manipulated simultaneously to achieve the best outcome for them. This is to ensure good health, full social participation and independent living throughout the entire life span.

Tengku Aizan Tengku Abdul Hamid

PROSPECTS AND WAY FORWARD

“Older persons make wide-ranging contributions to economic and social development. However, discrimination and social exclusion persist. We must overcome this bias in order to ensure a socially and economically active, secure and healthy ageing population.”

“On this International Day of Older Persons, I call on countries and people to commit to removing barriers to older persons’ full participation in society while protecting their rights and dignity.”

- Secretary-General Ban Ki-moon,
(International Year of Older Persons 2013)

*“The post-2015 development agenda offers a historic opportunity for the United Nations and its Member States to strengthen the rights and role of older persons in society as an integral part of our commitment to “leave no one behind”.
“On this International Day, I encourage governments and people everywhere to ensure the full participation of older persons in society while protecting their rights and dignity.”*

- Secretary-General Ban Ki-moon,
(International Year of Older Persons 2014)

The above quotes from the UN Secretary General on the celebration of the international year for older persons 2013 and 2014 captures the essence that government around the world, community, family and individual persons must strive to make ageing experience inclusive and to view ageing not as a burden but part of the development process. Malaysia still has time to

prepare the nation for the eventual aged nation status either in 2020 or 2035 depending on which age cut-off the government decided to declare. Nevertheless, the time is rather short comparatively. For this to happen all stakeholders have their specific roles and responsibilities to see that ageing happen in a society for all ages and that older persons enjoy the same rights and privileges as other sectors of society.

Malaysia has gone through an impressive development since independence and has reaped the fruits of development. These can be seen by her success in achieving the MDG goals. From the perspective of population, programmes implemented for the Rakyat need to go beyond their present goal. For example, we have impressive track record for poverty eradication but this does not prepare them for ageing. As an illustration, the AIM programme is very successfully in helping adult women's economic empowerment. Nevertheless, the programme did not go a step further to assist adult women to develop safety net for their old age. Having a longer perspective of economic empowerment from adulthood to old age would definitely create a better quality of life for these women in old age. Hence, a tweak is needed in the present programme as to address the needs in old age. There are many last mile measures that can be implemented that would significantly complement existing efforts and programmes.

The aged of the future will be more educated compared to their predecessors with better living standards and quality of life as the situation of the aged improves. With greater affluence, their needs and demand for services will be more sophisticated than the present aged. This may open new opportunities for business and services which promotes a new silver industry that can contribute to the local economy. Human resource trained in the field of ageing seems to be lagging behind even though there are scholarships

available especially for geriatricians. In order to cater for the need to develop medical speciality in the area, the Academy of Family Medicine is working with geriatricians from Universiti Malaya to offer a Diploma in Geriatric Medicine (Minutes of Technical Committee on Health of Persons Programme, 2015). It was noted that the scholarship was not taken up as the sub-speciality is not seen attractive. Presently, only Universiti Putra Malaysia offers post graduate programme in gerontology. This however does not address the need for certified or trained care workers in the field of gerontology when there are no legal requirements to do so.

As ageing is a lifelong process, the policies and programme addressing the needs of the younger age groups has significant impact when these generations reaches old age. In my opinion, the approach to address current and future ageing issues need to be relooked. There should a central planning body that oversee all aspects of population from the life course perspectives should be organised. This planning body would be the nerve center and have inputs from all stakeholders, government, private sectors, academic entities and civil society organization. This body should have multidisciplinary team members, to analyse, organize and plan the kind of policies and programmed needed to best address the issues. The fragmented and interest group planning may not provide the best alternatives to address the impending ageing issues. Within this planning mechanism bottom up and top down approach can be applied. The new emerging issues of ageing, may need new ways of thinking and handling. For example, presently, if a non-government organization runs programmes and get support from the government, the NGO will not be able to receive support from other sectors. This strict requirement may need to change as the NGO needs to innovate to sustain their operations. Maybe it is high time for the government to devolve the services operated by

the government to the NGOs. Nevertheless, the government need to have in place the monitoring and evaluation system so that the clients enrolled in the services provided by the NGO will meet a basic standard or quality of care. This way the government would not be responsible directly for provisions care but they can guarantee the standards of care being provided to clients by NGOs who meets the quality of service criteria set.

Presently, there are two Acts that addresses the residential institutions, the Care Centres Act 1993 and The Private Healthcare Facilities and Services Act 1998. These Acts govern the physical facilities and the kind of services that can be provided under this act. In terms of the Care Centres Act, government facilities are exempted. This implies differential treatment between the public and the private providers. While the Private Healthcare Facilities and Services Act controls the medical aspects of services in the facilities under this license. Due to its rather strict requirement of the Private Healthcare Facilities, only a few are registered, although many are providing the services. Further, both the present acts do not address the quality of care issues. Issues of care quality in institutional settings need to be developed so that consumers can make better decisions.

There will be new needs for services with the increased in aged population that requires blended approach between, independent living and dependent living. The flexibility of changing from one entity to another as the need arises. Community care services are badly needed in Malaysia. The present supply of community services mostly cater for the aged poor and limited in the terms of scope of services. Nevertheless, the private enterprise do offer these services but many are not accessible due to cost and location of the services, which is usually in the towns and cities. As previously noted the concentration of the older persons are localised and a variety of services is needed at these places. Many older persons

prefer to stay at home at get services and this has created a niche market. Home visit services or even “nursing to you “are on the increase and who would be responsible if mishaps happen to the volunteers in the home of clients or on the way to provide services. In addition, are the clients who received the services protected by any means if misconduct happened in the home either to the clients or by the clients. Presently these services might not be regulated as both two Acts do not cater for this new development. There is growing need for these kinds of services and the government need to pay attention to these new development. There comes a time where this services need to be regulated.

There is an oversight in the mobilization of the elderly who were traditionally viewed as a burden and not as a resource in development. Older Malaysians come from a varied background and possess valuable skills, experience and knowledge. The inability of the government and the private sector to tap into this pool of experienced resources represents a loss in potential manpower. The civil society sector has a long tradition of leadership by distinguished and prominent retired persons but their role is often limited in the charity and philanthropic sector. The older population is a growing political force as it has always been a key constituency with high voter turnout but they lack coordination and organization to get their message across for the benefit of older Malaysians. There is room for a greater role of the elderly in our society.

There is also a need to have long term, longitudinal research on ageing to provide information for evidence based policy making. Malaysia through the Department of Statistics has a lot of good time series data on several aspects of her population. Nevertheless, nationally there are steps taken to provide a comprehensive, multidisciplinary panel data on ageing. The lack of sizeable panel data limits the analysis performed and stop short of grounding the

effect of policy on inter-individual and intra individual differences and relating these to the policies implemented. There is a need now to develop specific research agenda on ageing looking from the life course perspectives and conducting it for long term to trace the influence of policy decisions on the lives of the Rakyat. Data speaks and information is power.

CONCLUSION

The speed of population ageing is very rapid and the whole social structure is affected and will be affected by the phenomenon. The implications of the changing age structure is yet to be fully understood as what explicit actions to be taken is not very clear as research on ageing in Malaysia is still at its infancy. Yet the need for evidence based policy making is pressing as aged nation status is just around the corner for Malaysia. Population ageing in Malaysia is a silence epidemic; therefore there is a need to developed integrated and innovative research strategies in order to provide culturally relevant policy and programmes with inputs from the older persons themselves. Pilots and test-beds social programme should be implemented and replicated to increase success of program implementation. New ways of thinking at all levels are needed in order to avert the crisis of old age in Malaysia.

The current planning for the aged population way not optimal as it is done by separate agencies and entities and the outcome may not holistic which also makes monitoring, evaluation and impact assessment rather challenging. Planning becomes very complex as we have to take into consideration the current as well as the projected needs of the future aged at the same time. When we think about ageing policies, programmes and services we need to appreciate the fact that provisions are needed not just for the dependent or disabled

minority but any development must cater for the older persons whether they are rich, poor, sick or healthy, men and women.

On the societal level, steps have been taken to incorporate and mainstream the issues of population ageing. New facilities and services have been developed to promote financial preparation for old age. Nevertheless, the behavioural economics of the population seems to lag behind. Public education is needed to promote the awareness to save for old age and anticipatory socialization to life in old age is also important. The life span approach to ageing and development of community facilities to delay institutionalisation is needed to give choices to the older persons and families. The well-being of older persons are multidimensional and are influenced by multiple risk factors and many of them are modifiable. Consorted efforts need to be harness in order for the issues to be handled comprehensively and in an integrated manner. Moreover, ageing is temporal, where the needs of current aged will be different from the needs of the future aged.

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BIOGRAPHY

Tengku Aizan Tengku Abdul Hamid was born on the 1st of February 1958 in Kota Bharu Kelantan, Malaysia. She received her early education at *Sekolah Kebangsaan Zainab 1* and *Sekolah Menengah Kebangsaan Zainab* in Kota Bharu, Kelantan. She enrolled in the Diploma in Home Technology program at Universiti Pertanian Malaysia in 1976 after her Malaysian Certification of Education. After her graduation with a Diploma of Home Economics in 1978, she proceeded with her tertiary education in Home Economics at the Iowa State University (ISU), Ames, Iowa, USA under the sponsorship of the Public Service Department. After obtaining her B.Sc. in 1981 and then M.Sc. in 1983, she joined the Department of Human Development Studies, Faculty of Agriculture, Universiti Pertanian Malaysia as a lecturer. She returned to ISU in 1989 and obtained her PhD in 1992 in Human Development and Family Studies with a multi-discipline minor in Gerontology.

In 2000, she was assigned to start a programme in gerontology under the Faculty of Human Ecology, Universiti Putra Malaysia (UPM), and in the same year she gained her first experience in university administration when she was appointed as the Director of the Programme of Studies in Gerontology. Subsequently, she established the Institute of Gerontology (IG) in UPM and was appointed as the founding Director in the same year in 2002. Besides being the Director of IG, she is also currently a Professor in Gerontology and Social Policy, holding academic responsibilities (teaching and supervision) at the Department of Human Development and Family Studies, Faculty of Human Ecology, UPM. She has supervised and co-supervised more than 20 PhD and Masters local and international students who either registered at the Institute of Gerontology or at their respective faculties.

Over the years, she has carried out research in numerous areas of old age and ageing with funding from government agencies as well as international bodies. She is the principal investigator or project leader for over 30 research projects and have additionally collaborated in another 20 research studies. Among the international sponsoring agencies are the Food and Agriculture Organization of the United Nations (FAO); United Nations Educational, Scientific and Cultural Organisations, the United Nations Population Fund (UNFPA), World Bank and the World Health Organization (WHO); Kitakyushu Forum on Asian Women (Japan), Japanese Organization for International Co-operation in Family Planning (JOICFP), Ryukoku University Japan, RAND Corp. USA, UNDP Kyoto University and Citi Foundation.

She was also appointed as a consultant to the Health University of Mongolia by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in 2008 to propose a centre for ageing research at the university. She is an international tutor for the UN International Institute of Ageing in Malta for its social gerontology training programme.

Locally, Prof. Dr. Tengku Aizan has received consultancy projects from the Family Foundation of Johor, State Economic Planning Unit (Kelantan), the Ministry of Rural and Regional Development, the Ministry of Health and the Ministry of Women, Family and Social Development. Most of the research findings have been used by these agencies in making relevant policies. An evaluation of the visionary village movement has resulted in the new orientation of rural development for the nation and the development of an amended policy and plan of actions on older Malaysians. In 2014, she headed the local team counterpart and work with the World Bank to review social protection system for Malaysia.

She also sits in several national committees on ageing such as the National Advisory and Consultative Council for the Elderly, Ministry of Women, Family and Community Development, Malaysia; Technical Committee on National Policy of Older People, Technical Committee on Health of the Elderly Programme, Ministry of Health. She sits in a number of committees such as the Private sector retirement review committee under the Ministry of Human Resource and Development, Activity Committee for the Yayasan Keluarga Terengganu, just to name a few.

Prof. Dr. Tengku Aizan has published her writings in various forms including journal articles, chapters in books, books, proceedings, modules, seminar posters and conference papers. To date, she has written more than 200 articles, publishing in a number of journals such as the Asia Pacific Journal of Public Health, Cochrane Database of Systematic Reviews, Mental Health, Religion and Culture, Journal of Gerontology, Educational Gerontology, American Journal of Alzheimer's Disease & Other Dementias, Social Indicators Research, Aging, Neuropsychology, and Cognition, and Social Science and Medicine Journal. She is the co-author of *Pemakanan Warga Tua* (Nutrition for the Older Person), *Modul Gerontologi Asas dan Perkhidmatan Geriatrik* (Basic Gerontology and Geriatric Services) and editor of *Older Population and Health Care System in Malaysia: A Country Profile* (2007) and *Profile of Older Malaysians: Current and Future Challenges* (2012). Through her publications and presentations both at the international and national levels, she has shared her knowledge, views and research findings to various interest groups such as the civil society members, gerontologists, medical practitioners, administrators, as well as policy makers from many different agencies, and federal and state ministries.

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She has had early exposure to multicentre collaborative research programmes in Malaysia. She was the programme head for the Mental Health and Quality of Life of Older Malaysian study in 2004, a collaborator under the experimental and applied research (EAR) with International Islamic University Malaysia (UIAM), University of Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Malaysia Sabah (UMS), Universiti Malaysia Sarawak (UNIMAS), and College University of Science and Technology (KUSTEM). She is now involved in a long term research (LRGS) together with UKM and UITM to study the neuro-protective factors of mild cognitive impairment. Professor Dr. Tengku Aizan has also won several research poster medals on her work at national and international levels. She also won medals at UPM Invention, Research and Innovation Exhibition between 2002 and 2012. In recognition of her research excellence she was awarded the Vice Chancellor Research Excellence Award in 2012.

ACKNOWLEDGEMENTS

In the name of Allah, the Most Compassionate and the Most Merciful.

Oh Allah, please bless Prophet Muhammad and the Household of Muhammad.

Alhamdulillah, I am most grateful to Allah SWT for His Blessings and Guidance. I am also grateful to Universiti Putra Malaysia (UPM) for giving me the opportunity and trust to direct the operations of the Institute of Gerontology (IG) since its establishment, together with my role as a faculty member of Faculty of Human Ecology, Universiti Putra Malaysia. I would like to take this opportunity to express my sincere gratitude to Tan Sri Dato' Hj. Napsiah Omar, who saw the scholastic potential in me all those years ago and provided a scholarship from the Public Service Department to pursue my studies in Home Economics at Iowa State University, USA, and to Tan Sri Dato' Setia Dr. Nayan Ariffin for his inspiration and support in awarding a Ph.D. scholarship for me to venture into the field of gerontology at the same university, as it was a very new discipline at that time. Not forgetting that I am indebted to Dato' Dr. Ir. Muhamad Zohadie Bardaie for appointing me as the Director of the Institute Gerontology, my first senior administrative post in UPM. I am also grateful to Prof. Datuk Abdullah Al Hadi Hj. Muhamed for entrusting me with the task of developing the proposal which led to the establishment of the Institute.

I would like to extend my appreciation to all my mentors who have guided and made me into what I am today. They are my teachers - Prof. Dr. Jariah Masud, Assoc. Prof. Dr. Zaitun Yassin, Dr. Husna Sulaiman and Assoc. Prof. Dr. Mary Huang So Lee, all who were responsible in my joining the Department of Human

Development Studies, Faculty of Agriculture, Universiti Pertanian Malaysia. My most sincere gratitude goes to all my co-authors, co-researchers, research fellows, colleagues, post-doctoral fellows and graduate students, whether at the Institute of Gerontology, the Faculty of Human Ecology, the Faculty of Medicine and Health Sciences, the Faculty of Engineering, the Faculty of Economics and Management, the Faculty of Computer Sciences and Information Technology, the Faculty of Design and Architecture, the Faculty of Educational Studies and the University-Community Transformation Center of Universiti Putra Malaysia, as well as from Universiti Malaya, National University of Malaysia, Universiti Sains Malaysia, Universiti Malaysia Sabah, Universiti Malaysia Sarawak for their inspiration, encouragement and cooperation in all our research projects and other activities that we have undertaken together thus far.

I am also indebted to all the dedicated and committed staff of IG. Special mention goes out to Chai, Farra, Fadil, Norisma, and Rizal, as they have been working along with me as both research staff and colleagues. Thanks is due to the countless number of enumerators who travelled tirelessly up and down the country, from the kampongs, towns and cities in Peninsular Malaysia, Sabah and Sarawak who conducted the interviews and collected data on the aged living in the community. Special gratitude also goes to the thousands and thousands of respondents who participated in our studies over the years.

I would like to acknowledge and thank the following national and international agencies for sponsoring and supporting my research projects and activities, namely the Ministry of Science, Technology and Innovation (MOSTI); the Ministry of Education (MOE), the Ministry of Women, Family and Community Development (MWFCD); the Ministry of Health (MOH), the Ministry of Rural

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and Regional Development; the Employees Provident Fund (EPF); the Public Service Department; World Health Organization (WHO); the Food and Agriculture Organization (FAO) of the United Nations; the United Nations Population Fund (UNFPA); the United Nations Organization for Education, Science and Culture (UNESCO); the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP); World Bank; the International Institute on Aging, UN-Malta (INIA); the Oxford Institute of Population Ageing; Citi Foundation; the Tsao Foundation of Singapore; and the National University of Singapore.

Last but not least, my love, appreciation and gratitude to my late parents, my husband, Dr. Mohamed Mohd. Salleh and my children, Ahmad Nasrin, Alyaa Shazwina, and Ahmad Zuhayri for their endless love, understanding, support, sacrifices and encouragement. I would also like to welcome our new member to the family, Ahmad Syuhadah. My life would not have been the same without the support of Ayah Leigh and the larger KTH clan who are always there for all of us.

Oh Allah, give us all the good of this world and the good in the hereafter, and save us from the punishment of the hell-fire.

Wassallam.



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