A COMPARATIVE STUDY OF AGEING POPULATION WITH SOME ASIANCOUNTRIES

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Abstract

. The study was aimed to a comparative study of ageing population with some Asian countries. Many countries in the world are ageing quite rapidly; and are likely to double their population of older persons within a relatively short period of time. The ageing population follows directly to demographic changes that have been linked to economic development. Population ageing is one of the most crucial demographic and social problems facing in Asia. In most of the Asian countries, there has been the rapidly growth in aged persons and the particularly problems that the elderly person. The ageing of population follows directly from demographic changes that have been linked to economic development in response to rising per capital income. This study attempted to highlight the population structure of selected Asian countries (Japan, Republic of Korea, Singapore and China) during the period 1950 to 2050. The objectives of this research paper is (i) To investigate the changing process of fertility and mortality pattern related to ageing population (ii) To examine the causes and consequences of ageing population in some Asian countries . Procedures of demographic and statistical analysis are applied in this study base on secondary data from some reference books, articles, United Nations publications and internet. The measures used to examine the population ageing in this study are: sex ratio, dependency ratio, ageing index, potential support ratio, parent support ratio and labour force participation rate. According to the study, it is found that in all studied countries decline fertility and mortality rates. There will be only two young persons to support one elderly person over 65 in the year 2050.The potential support ratio has been significantly increased in the study period. The increasing number of older persons more women than men, are provided with appropriate living arrangements and adequate care. The process of population ageing will continue to accelerate in the future the financial crisis of the national pension is anticipated.

Keywords: Ageing Population, Some Asian Countries: Japan, Republic of Korea , Singapore , China

1.Introduction

Many developed countries have become concerned about ageing population at the beginning of the 21st century. Ageing populations is emerging as a serious problem in many Asian countries. Demographers have attested to Asian countries having the fastest ageing population in the world.

Political leaders, government planners and economists have been worried for long about the economic implication of the size of a nation's population and its rate of growth. Ageing populations is primarily a twentieth century phenomenon in most parts of Asia. In these countries, attention has been focused on the increased costs of proving pension payment and health care to the elderlypopulation and to the impact of ageing populations on

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labourproductivity and the rate of economic growth. Younger populations are rapidly confronted by the problems of older persons and ageing population.

During the second half of the 20th century, the ageing population has been occurred all over the world. Especially, in the 21stcentury are faced with the problem of population ageing in Asia. The percentage of the population age 60 year has increased from 8% to 11% in twentieth century and twenty-first centuries. In Asia, the ageing population was 94.51 million in 1950, 148.11 million in 1975, and 322.98 million in 2000. If so, it will be 706.27 million in 2025 and 1231.23 million in 2050, respectively. Moreover, the ageing population of the world will continue to grow in the future.

Furthermore, the ageing population causes the interplay between fertility and mortality. Higher life expectancy and lower fertility rateshave caused a trend toward population ageing. Besides, the shift in age structure associated with ageing. It is important to consider not only the age structure but also the socio - economic conditions. Japan has become the world's oldest country, with its more than one quarter of population over the age of 60. Other countries, including China, Republic of Korea and Singapore, caught up to Japan by the middle of the 20st century. These countries are ageing quite rapidly; and are likely to double their population of older persons within a relatively short period of time. Therefore, this thesis presents an overview of the ageing situation in some Asian countries: Japan, Republic of Korea, Singapore and China.

1.1Objectives of the Study

The objectives of this research papers are

(i)   To investigate the changing process of fertility and mortality pattern related to ageing population.
(ii)   To examine the causes and consequences of ageing population in some Asian countries (Japan, Republic of Korea, Singapore and China).
(iii)   To explore the future elderly population and their possible impact on socio-economic development.

1.2 Scope and Method of the Study

The study area is focused in some Asian countries such as Japan, Republic of Korea, Singapore and China. Procedures of demographic and statistical analysis are applied in this study based on secondary from some reference books, articles, United Nations Publications and internet. The scope of the study is from 1950 to 2050.

2 .GENERAL FEATURES OF SOME ASIAN COUNTRIES

In this chapter, the population structure of some Asian countries which is divided into fourth parts such as population size, density of population size per square kilometer, percent urban and population growth rate, will be presented.

2.1 Demographic Background of Japan

Japan is one of the world developed countries .It is situated in the Eastern Asia. The total

land area is 377,835 square kilometers and the total population is 126.995 million in 2010.

Table (1) Demographic Background of Japan

Year	Population (in millions)	Population Growth Rate (%)	Urban	Density of Population(per sq km)
1950	82.824	1.45	34.9	219
1975	111.619	0.91	56.8	295
2000	126.706	0.12	65.2	335
2025	120.793	-0.57	71.1	320
2050	101.659	-0.79	-	269

Source: World Population Prospects: 2008

According to Table (1),the percentage of the population in living in urban area has steadily increased from 1950 to 2050. In 1950, 34.9% of Japan's population lived in urban areas. The changes of percent urban had more than twice from 1950 to 2025. The population density of Japan was 219 per sq km in 1950. It has increased to 335 per sq km in2000. From 2000 to 2050, it has decreased by 66 per sq km.

2.2 Demographic background of Republic of Korea

Republic of Korea's population is one of the most ethnically and linguistically homogenous in theworld. Korea situates in the North East Asia. The total land area is 98,480 square kilometers. The total population is 23.991 million.

Table (2)Demographic Background of Republic of Korea

Year	Population (in millions)	Population Growth Rate (%)	Urban	Density of Population(per sq km)
1950	19.211	1.94	34.9	193
1975	34.721	1.52	56.8	349
2000	46.429	0.48	65.2	466
2025	49.484	-0.14	71.1	497
2050	44.077	-	-	443

Source: World Population Prospects 2008

According to Table(2) In Republic of Korea changes of population had occurred since 1975.After 1975, populationstarted to increase and then the continuously increase until 2025.Again ,it has declined from 2025 to 2050.But,the population growth rate has steadily declined since 1950,It has declined from 1,94% in 1950 to -0.14% in 2025.

2.3 Demographic Background of Singapore

Singapore is located in Southeast Asian at the southern tip of the Malay Peninsula, about 137 kilometers north of the equator. The total population is 4.837 million in 2010.

Table (3) Demographic Background of Singapore

Year	Population (in millions)	Population Growth Rate(%)	Urban	Density ofPopulation (persqkm)
1950	10.22	4.90	100	1496
1975	22.63	1.30	100	3313
2000	40.18	1.20	100	5883
2025	52.62	0.36	100	7851
2050	52.21	-	-	7645

Source: World PopulationProspects:2008

According to Table(3),The annual growth rate has fallen, from 4.9% in 1950 to 0.36% in 2025.Population of Singapore was 10 million in 1950 to 52 million in 2050.The population density of Singapore was estimated at 1496 per sq km in 1950.It has increased to 3313 in 1975 and 5883 in 2000. It also shows that population density of Singapore has nearly double in these period. In 2050,the estimated population density of Singapore is 7645 persons per sq km.

2.4 Demographic Background of China

The total land area of China occupied the largest population all over the world. Land area for China is 9, 5969,603square kilometers. The total population is 1354.146 million in 2010.

Table (4) Demographic Background of China

Year	Population (in millions)	Population Growth Rate (%)	Urban	Density ofPopulation(per sq km)
1950	544.951	1.87	12.5	57
1975	911.167	1.48	17.4	95
2000	1266.954	0.70	35.8	132
2025	1453.140	0.13	57.2	151
2050	1417.045	-	-	148

Source: World Population Prospects: 2008

From above Table (4), the population density of China was 57 persons per sq km in 1950.The changes of population density were about nearly two times from 1950 to 1975 and nearly three times from 1950 to 2000.Population of China was 911 million with an annual growth rate of 1.48% in 1950 and 1266 million with an annual growth rate of 0.7% in 2000.Since the estimated population was increased decade but the annual growth rate was decreased decade after decade. The percentage of the population in living urban area was steadily increased from 1950 to 1975 .After the year 2000,it was sharply increased until the next two decades.

3. COMPARISON OF INDICES OF AGEING WITH SOME ASIAN COUNTRIES

The demographic impact of rapid ageing population can be measured by a variety of indicators that reflect of different dimensions of the age composition of the population. Thischapter including the sex ratio, dependency ratio, ageing index, potential support ratio and parent support ratio,etc. Each of these indicators measures a different aspect of ageing.

3.1 Sex Ratio of Elderly Population

The sex ratio is calculated as the number of males per one hundred females in a population. The sex ratio may be calculated for a total population or for a specific age group.
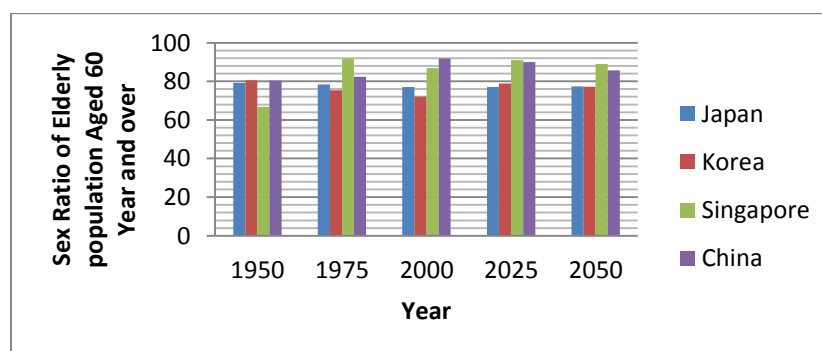
Table (5)Sex Ratio of Elderly Population Aged 60 Years and over in Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	79.2	78.4	77.0	77.1	77.4
Rep:of Korea	80.6	75.4	72.0	78.9	77.2
Singapore	66.8	91.7	86.9	90.9	89.0
China	80.3	82.4	91.8	89.9	85.6

Source: World Population Ageing:2007

Table(5)presents the age-sex ratio of the elderly population aged 60 years and over in some Asian countries. In 1950, it was 79 males per 100 females in Japan,81 males per 100 females in Republic of Korea,67 males per 100 females in Singapore and 80 males per 100 females in China. As a result, it was decreased in Japan and Republic of Korea and was increased in Singapore and China from 1950 to 2000. In 2000, the sex ratio of the population aged 60 or over was declined in all countries except China. From 1950 to 2050, the ratio was little decreased in Japan and Republic of Korea. But, it was little increased inChina andsharply increased in Singapore.

Figure(1)Sex Ratio of Elderly Population Aged 60 Years and over in Some Asian Countries
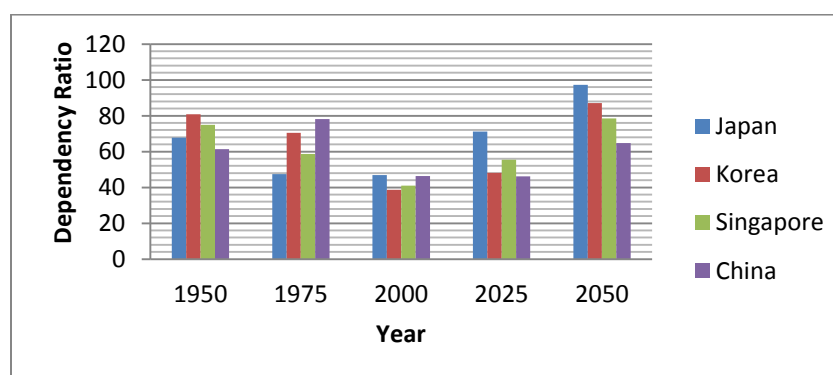

Source: Table (5)

3.2 Dependency Ratio of Elderly Population

Dependency ratio is an approximation of the average number of dependents that each person of working age must support. It is calculated as the ratio of the number of children (persons under age 15) and older persons (persons aged 65 years or over) to the number of persons in the working ages (persons aged 15 to 64) expressed per 100 population.

Table (6)DependencyRatio in Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	67.8	47.5	46.8	71.1	97.3
Rep:of Korea	80.8	70.5	38.7	48.2	87.0
Singapore	75.0	58.6	41.0	55.4	78.4
China	61.3	78.2	46.4	46.2	64.8

Source: World Population Ageing 2007

Figure (2)Dependency Ratio in Some Asian Countries

Source: Table(6)

According to Table (6) ,in 1950, all countries were above 60 dependents by 100 economically active persons. During the period 1950-1975, the dependency ratio was declined in all Asian countries except China. Based on Table(6) the total dependency ratio was slowly declined in Japan ,fairly declined in Singapore and rapidly declined in China and Republic of Korea from 1975 to 2000.During the next 25 years, it is sharply increase in Japan and fairly increase in Singapore and Republic of Korea .But, dependency ratio of China is remained constant. At the end of the years 2050, it is projected to be nearly 97 in Japan. It can be said that there is one people of working age per every dependent.The old age dependency ratio is the number of persons aged 65 years or 3 over per one hundred persons 15 to 64 years.

Table (7)Old-age Dependency Ratio in SomeAsian Countries

Country	1950	1975	2000	2025	2050
Japan	8.3	11.6	25.2	49.7	70.8
Rep:of Korea	5.5	6.2	9.8	29.0	64.6
Singapore	4.2	6.5	10.2	34.7	55.9
China	7.2	7.8	10.0	20.0	39.0

Source: World Population Ageing 2007

The above table shows old-age dependency ratio of some Asian countries. From Table (7), Japan has the highest old age dependency ratio among other countries. It was followed closely by China; where the old age dependency is 7.2. In other countries, Republic of   Korea and   seen inSingapore. In 1975, the lowest old age dependency ratio can be seen in republic of Korea and the highest old age dependency ratio can be seen in Japan. The same pattern of old age dependency ratio can be seen in the year 2000.But, the lowest old age dependency ratio can be seen in China in the year 2025 and 2050.

Figure (3)Old-ageDependency Ratio in Some Asian Countries
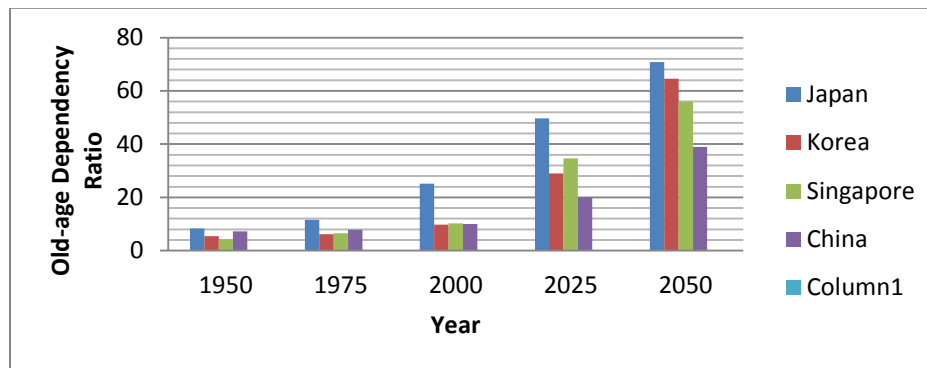
Source: Table(7)

3.3 Ageing Index, Potential Support ratio and Parent Support Ratio

3.3.1 Ageing   Index

The ageing index is calculated as the number of persons aged 60 years or over per hundred persons under age 15.

3.3.2 Potential Support Ratio

The potential support ratio is the number of persons aged 15 to 64 per every person aged 65 or over.   **3.3.3 Parent Support Ratio**

The parent support ratio is the number of persons aged 85 years or over divided by the number aged 50 to 64 and expressed per 100 persons.The following table shows ageing index, potential support ratio and parent support ratio in some Asian countries.

Table (8)Ageing Index in Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	21.7	48.1	157.9	282.6	310.2
Rep:of Korea	13.1	15.4	52.7	210.2	343.7
Singapore	9.2	20.4	48.3	233.5	301.3
China	22.3	17.6	40.7	112.2	197.6

Source: World Population Ageing 2007

Figure (4)Ageing Index in Some Asian Countries
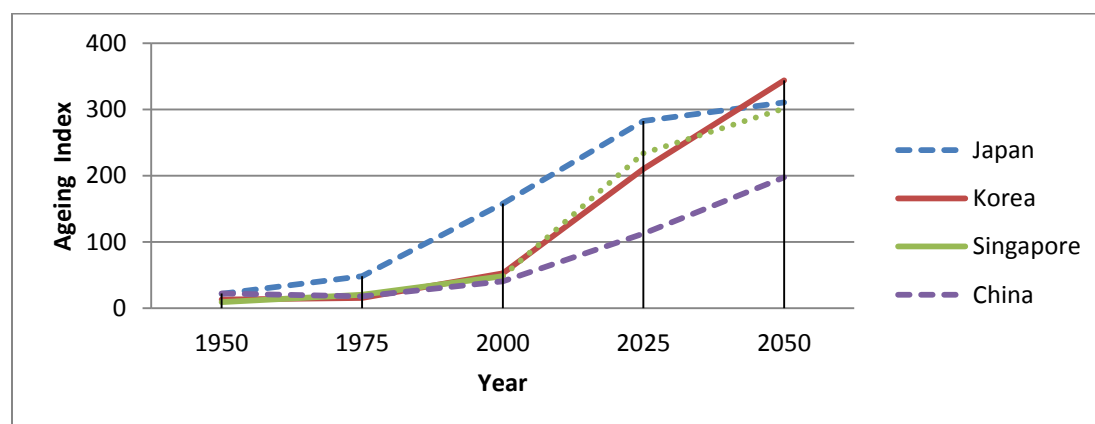
Source: Table(8)

According to Table(8) the ageing index was increased in Japan, Republic of Korea and Singapore from 1950 to 1975. It was nearly 22 older persons per 100 children to 48 per 100 children in Japan and nearly 9 older persons per 100 children to 20 older persons per 100 children in Singapore. But, the ageing index was decreased in China in these period. Over the next 25 years, the ageing index was 157.9 in Japan. It was more than triple from 1975 to 2000. Moreover, it is projected to be accelerated in 2025 and 2050. Similarly, the same pattern of ageing index can be seen in other remaining countries in 2025 and 2050. In 2025 and 2050, this index will be above 100. It means that there are more older population than children.
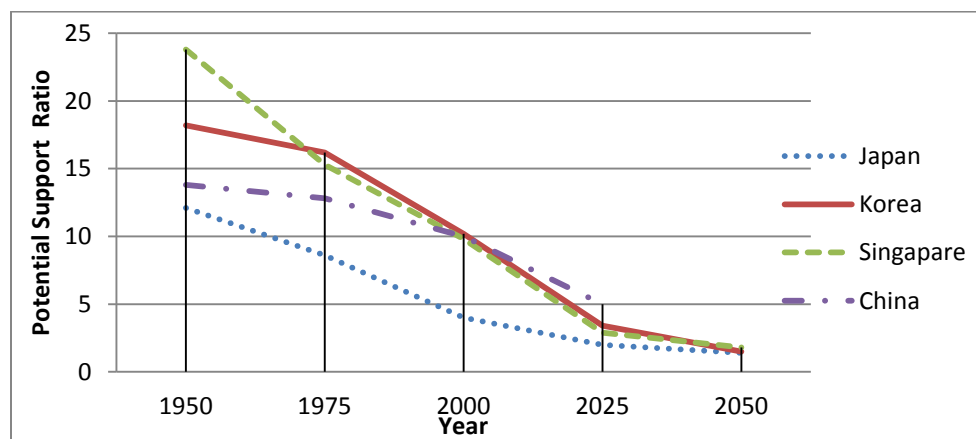
Table (9)Potential Support Ratio in Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	12.1	8.6	4	2.0	1.4
Rep:of Korea	18.2	16.2	10.2	3.4	1.5
Singapore	23.8	15.3	9.8	2.9	1.8
China	13.8	12.8	10.0	5.0	2.6

Source: World Population Ageing 2007

Between 1950 and 2000, the ratio of people aged 15-64 to persons 65 or older has decreased from 12.1% to 4.0% in Japan .It is continuously decline until 2050.The potential support ratio has been nearly half of the declined in republic of Korea and Singapore from 1950 to 20000. But, it was slowly declined in China in this year. The potential support ratio will be significantly decreased in 2025.At the end of year2050,it is nearly 2.This mean that there are nearly 2 persons in working age per old person.

**Figure (5)Potential Support Ratio in SomeAsian Countries**

Source: Table (9)

Table (10)Parent Support Ratio in Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	1.6	2.6	8.1	28.7	57.8
Rep:of Korea	0.8	1.3	2.3	9.1	36.0
Singapore	2.3	1.4	4.4	7.4	38.0
China	0.8	1.6	2.5	4.1	15.2

Source:World Population Ageing 2007

The parent support ratio provides an indication of the family's support that family may need to provide their oldest members. The highest ratio can be seen in Singapore. There were more than 2 persons aged 85 or over per 100 persons aged 50-64. In 1950,there were fewer than 2 persons aged 85 or over per 100 persons aged 50-64. In 1950, there were fewer than 2 persons aged 85 or over per 100 persons aged 50-64 in other remaining countries. It was significantly increased in Japan in 2000. The ratio is projected to reach nearly 58 per 100 in 2050. It is expected to grow significantly faster after the year 2000. As a result, the potential support ratio has been steadily declined and parent support ratio has been significantly increases in the study period.

Figure (6)Parent Support Ratio in Some Asian Countries
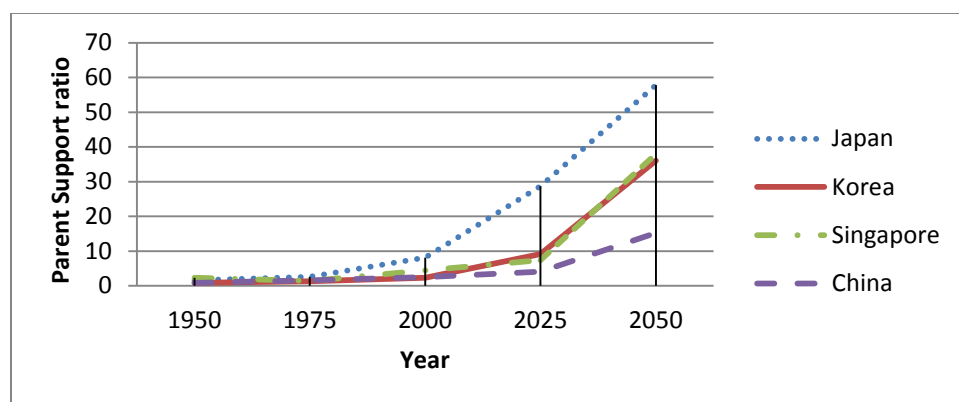
Source: Table (10)

4. DEMOGRAPHIC IMPACT OF AGEING POPULATIO INSOMEASIAN COUNTRIES

4.1Trends in Ageing Population

Four distinct features of the changing age and sex structure of the older population have implications for the provision of elderly care and support. These are (i) trends in ageing population. (ii) feminization of ageing population (iii) statutory pensionable age (iv)living arrangement and health care costs.

As shown in table (11) and figure (7) describe the percentage of elderly population aged 60 years and above of some Asian countries. In 1950, the rate of growth of the elderly population was 7.7% in Japan, 5.4% in Republic of Korea, 3.7% in Singapore and 7.5% in China. The next two decades, it was expected to rise slightly increase except China. In 2000, the rate of growth in the population was more than double in Japan and Republic of Korea and it was nearly triple in Singapore . It will continue at a fast pacethrough to 2050. In 2050, the annual growth rate is expected to reach nearly 40 percent except China. In this year, the highest growth rate of elderly population can be seen in Japan and the lowest growth rate of elderly population can be seen in China.

Table (11)Trends in Ageing Population of Some Asian Countries

Country	1950	1975	2000	2025	2050
Japan	7.7	11.7	23.2	35.2	41.7
Rep:of Korea	5.4	5.8	11	27.3	41.2
Singapore	3.7	6.7	10.6	31.1	38.8
China	7.5	6.9	10.1	20.1	31.0

Source: World Population Ageing, 2007

Figure (7)Trends in Ageing Population of Some Asian Countries
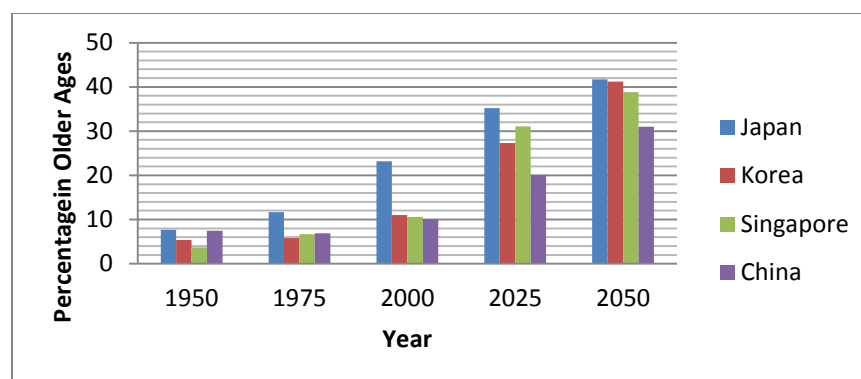
Source: Table (11)

4.2 Feminization of Elderly Population

Table (12)indicates the percentages of females in elderly population (60 years and over) some Asian countries from 1950 to 2050. Women have lower death rates than men , a higher proportion of women than men survive into older ages. In 1950, 8% of the older population was male in Japan and China, 6% the older population was female in Republic of Korea and 3% of an older population was female in Singapore.   During the period 1950-2000 , the percentage of female in the older population was double in Republic of Korea and triple in Japan and Singapore. A slightlyincrease of olderpopulation can be seen in China. The feminization of ageing is steadily increase by 2050. In 2050, this proportion will be more than 45% in Japan and Republic of Korea and above 33% in Singapore and China

.**Table(12)Percentage of Females in Elderly Population(60 years and over)**

Country	1950	1975	2000	2025	2050
Japan	8.4	12.9	25.7	38.5	45.1
Rep:of Korea	6.1	6.7	12.9	30.1	44.8
Singapore	3.7	6.7	10.6	31.1	38.0
China	8.6	7.8	10.9	21.6	33.6

Source:World Population Ageing,2007

4.3 Statutory Pensionable Age

     In many countries, women become eligible for pension benefit at lower age than men, because women generally survive longer than men. Naturally, pensioners are to be found not only among the elderly population (aged 60 years and over) but also among younger persons. A person is a pensioner, it does not mean that he or she does not work. As of 2006, men and women had the same structure pensionable age in all study countries.

Table(13)Statutory Pensionable Age in Some Asian Countries

Country	2006	
	Male(years)	Female(years)
Japan	65	65
Rep: of Korea	60	60
Singapore	55	55
China	60	60

Source:World Population Ageing 2007

Population ageing leads to increase health-care costs in almost all developing countries. The impact can be evaluated by government health expenditure as well as overall societal perspective. After the age of 65, the probability of disability or of impairment in general functioning increases dramatically. As the number of the elderly grows, these individuals will need additional support in order to maintain themselves.

The main source of social security for elderly consists of psychical, emotional and monetary support provided by the family. The problem of care for the elderly is likely to be especially acute for older women, who constitute the majority of the elderly in virtually all low-mortality populations. Because of the greater longevity among women in most countries in Asia, and the tendency for the men to marry women younger than themselves,women are more likely than men to end their lives as widows. The implication of this is a serious gender asymmetry in the support and care for the elderly.

In many Asian countries, because of the increased life expectancy of women and the higher proportions of windowed, divorced or lonely among them, the economic and social problem for women are often worse than for men. With increasing psychical and mental capacity, their economic dependence on family members is higher than of men. The prolonged care of such women necessitates that on whom they depend for their livelihood have sufficient financial resources.

5.Conclusion

Population ageing is one of the growing concerns of the world . Population ageing is emerging as a serious problem in many Asian countries. The demographic consequences of low fertility and mortality rates have been occurred population ageing for countries , regions and cities. The increasing population ageing is associated with labour shortages and social security systems in Asian countries.

Most of the countries in Asia have begun to pass through the demographic transition shifting from high levels to lower levels of fertility and mortality rates. These changes in

age structure are very important for consequences not only in demographic trends but also on the entire social and economic development. In East and South-East Asia, Japan together with Singapore, the Republic of Korea and China has the fastest growing 60 years and older population.

In Asia, the people aged 60 and over numbered 94.51 million, accounting for 6.76% of the total population in 1950. It was estimated that by the year 2000., the total number of the elderly in Asia was 322.14 million, accounting for more than 8.77% of the total population . It is estimated that by the year 2050 , the total number of the elderly in Asia will be 1231.23 million, accounting for more than 23% of the total population.

According to the results, the rapid ageing population was occurred in allstudy countries. It is due to fertility declined and to the continuing drop in mortality rates . On the other hand, the levels of urbanization in these countries are increased rapidly. Moreover, improved health care, health insurance and socio-economic conditions, life expectancy has increased in these countries.

An increase in the proportion of elderly persons aged 60 years or older is accompanied by a decrease in the proportion of children under 15 years of age, the two age groups are not directly comparable. Among those aged 60 years or over, the fastest growing population is the oldest-old, that is, those aged 80 years or over. By 2050, the ratio is expected to increase to approximately 2persons ages 80 or over in every 10 older persons in all study countries.

The dependency ratio is considered to be one of the most important measures of population structure, because the revenue obtained from the active population has to support the non-economically active sector for things such as schooling, pensions, food, clothing and shelter, health care and housing. The old age dependency ratio provides the indication of economic burden that younger generation may face in supporting the older generation. Increase in the proportion of older persons (aged 65 years or over) are accompanied by reductions in the proportion of children (persons under age 15) and then by decline in the proportion of persons in the working ages (15 to64). According to the

results , there will be only two young person's to support one elderly person over 65 in the year 2050

The potential support ratio is the inverse of the old –age dependency ratio. It is used to indicate the support base on the burden of the population. By 2050, the potential support ratio is projected to drop further to reach nearly 2 potential workers per older person .As a result, the potential support ratio has been steadily declined and parent support ratio has been significantly increased in the study period.

Decreasing fertility has been the primary cause of population ageing. Life expectancy at birth increaseyear by year. In almost all countries, women enjoy longer life expectancy than men. Gender longevity for women is accompanied by more years of disability.

The majority of the world's older people are women. The proportion of women in the oldest old population is considerably higher than that of women in theolder population. Moreover, the labour force participation rateof elderly women is increased decade by decade and the labourforce participation rate of elderly women is increased decadeby decade. Therefore, the increasing number of older persons, more women than men, is provided with appropriate living arrangements and adequate care.

Trends in the age structure and the change in the number of the elderly person are important. Changes in the proportion and composition of the elderly may serve as a basis for important social measures. Population ageing leads to increased health-care costs in some Asian countries. Elderly people are living longer, which means that they have more health problems which may demand long term trend treatment and nursing care.Government should formulate for ageing population policy, projects and programs and specific plans of action.

5.1 Recommendations

In order to maintain the current ageing population, the following suggestions should be considered.

(a) To develop and enlarge the appropriate works opportunities for the elderly;
(b) To make public the necessary of providing job activities for the elderly ;
(c) To establish and enlarge the joint workplace for the elderly;
(d) To create awareness among people about health ageing;
(e) To set up public health goals for different segments of the older population.

On the basis of the findings of this research paper, the following recommendation can be put forward for older persons. In adding, research studies on policy responses to population decline and population ageing should be continuously conducted, and further efforts should be directed towards making policy makes understand the importance of population policy for their success.

Acknowledgements

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