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Kua Wongboonsin

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Growing Concerns for the Aging Population in Thailand

Kua Wongboonsin, Ph.D.*

Introduction

Since 1970, when the Thai government proclaimed the national population policy to encourage voluntary family planning, Thailand has experienced a declining rate of population growth, from 3.0% in the beginning of the Third National Social and Development Plan (1972-1976) to 1.2% at present. The average number of births during a woman's life time, or the so-called total fertility rate, has decreased from 6.4 during the period of 1960-1965 to about 2.0 during the period of 1995-2000.

According to the U.N. medium projection, the Thai population will continue to increase, but with a declining growth rate. The data and projections show the Thai population continually increasing from 44.8 million in 1980 to 55.8 million in 1990, and 62.4 million, 67.2 million, and 70.5 million in 2000, 2010, and 2020, respectively. On the other hand, the rate of population growth will continually decline from 1.8% per annum in 1980 to 1.1%, 0.7%, and 0.4% per annum in 2000, 2010, and 2020, respectively (Wongboonsin and Wongboonsin, 1995).

Such a declining rate of population growth has not only led to a decrease in governmental service expenditure, but has also brought about an increase in the capital reserves of the government for expansion and improvement of services. They do not only aim at the development of manufacturing and agricultural sectors, but also include investment for such basic needs as education, health care, and ecological preservation, as well as infrastructure in terms of roads, electricity, pipe water, etc.

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* Professor of Demography, Institute of Population Studies, Chulalongkorn University.

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The changing age structure of the Thai population has resulted in an increasing proportion of the elderly. However, social services provided by the government to most of the elderly have still been in terms of social welfare and are still inadequate.

Accordingly, this paper covers not only the demographic and social aspects of the elderly, but also their future well-being in terms of health and social security.

Demographic and Social Aspects

Looking at the population by age group, the data from NESDB (1995) reveal a declining number of children below 15 years of age, from 18.7 million in 1980 to 17.1 million, 16.5 million, 14.9 million and 13.9 million in 1990, 2000, 2010, and 2020, respectively.

At the same time, a 1.4% increase per year is found in the number of youth (15-24 years old), from 9.8 million 1980 to 11.3 million in 1990. Nevertheless, the trend will be followed by a decline from the year 2000 onward.

The number of adults (25-64 years old) was found to increase greatly during 1980-1990, with a 4.1% rise per year from 16.5 million in 1980 to 24.9 million in 1990. The rising trend is expected to continue to 31.3 million and 39.5 million adults in 2000 and 2020, respectively.

As for the elderly (65 years old and over), their numbers are also increasing continually, from 1.6 million in 1980 to 2.6 million, 3.7 million, and 7.1 million in 1990, 2000, and 2020, respectively.

The number of males per 100 females aged 60 years and over (in 1990) was 82 (Wongboonsin, 1995). That number decreases to 78 and 64 for the elderly aged 65 years and above and 75 years and above, respectively. The figures imply a trend towards a higher proportion of the female elderly than the male elderly when their age increases. Such a trend will maintain even until 2020 (United Nations, 1994). The proportion of the male to female elderly being less than 1 can be explained by the fact that, on average, the female elderly have higher life expectancy than the male elderly. For example, in 1989 the life expectancy of Thai women was as high as approximately 70.9, while it was only

about 65.6 for Thai men, increasing from 68.9 for the former and 63.8 for the latter during 1985-1986.

Population Distribution

According to the 1990 census, as shown in Table 2, only 16.3% (or 0.7 million) of the total elderly are municipal residents, while the majority of them (83.7% or 3.3 million) live outside the municipal areas. The elderly are found most in the Northeast (30.6%), followed by the Central region (25.5%), the North (22.4%), and the South (12.8%), respectively. Only 8.7% of the elderly live in the Bangkok Metropolis (The National Statistical Bureau, 1994).

Marital Status

Table 3 shows the pattern of marital status of the elderly provided by the 1970, 1980 and 1990 censuses. There is no difference in the pattern of marital status among the single, married, widowed, divorced, and separated elderly. Nevertheless, a declining trend is found in the female aging widowed, from 53.3% in 1970 to 53.2% and 48.6% in 1980 and 1990, respectively.

In 1990, there was high prevalence of the ever-married elderly, comprising 96.5% of the total elderly. Only 2.0% and 1.5% of the elderly are single or monks, respectively. Out of the 96.5% ever-married elderly, 59.9%, 33.3%, 1.8%, 0.6% and 0.9% are currently married, widowed, separated, divorced, and unknown ever-married, respectively. In addition, there are much more widowed elderly females (48.6% of the population aged 60 years and over) than widowed male (15.4%) (The National Statistical Bureau, *ibid.*).

Literacy

Table 4 compares the number and percentage of the literate elderly provided by the 1970, 1980, and 1990 censuses. It reveals an increasing percentage of the elderly who are literate, from 32.3%in 1970, to 44.2% and 70.5%in 1980 and 1990, respectively.

Despite a higher percentage of literate aging men than literate aging women, a smaller gap is found in 1990 than in 1980 and 1970, respectively.

Economically Active Aging Population

According to the census, the economically active aging population refers to all persons aged 60 years and over who were employed on the census date or had worked on a day during the seven days prior to the census date (April 1). Experienced workers and new workers looking for work or awaiting the farm season were also counted in the economically active population.

Table 5 identifies an increasing trend of population aged 60 years and over classified as non-economically active, from 57.1% in 1970 to 61.8% and 62.2% in 1980 and 1990, respectively. It also shows a higher percentage of non-working aging women than men. However, the proportion of the former was declining, from 72.3 percent in 1980 to 71.0 percent in 1990.

As shown in Table 6, the main reason for the elderly not being economically active is the fact that they are unable or too old to work. That reason accounted for 83.8% of the total reasons given in 1980, which increased to 87.0% in 1990. This is true for both aging men and women. A similar reason accounted for 81.9% and 82.6% of the total reasons given by aging men and 85.0% and 89.8% given by aging women in 1980 and 1990, respectively. A higher percentage of aging women not economically active than for aging men may be contributed to by the fact that the former has five years higher life expectancy than the latter. This increases the mean age of women compared with men.

The above-mentioned main reason for the elderly not being economically active has the following connotations: despite the fact that the Thai population has a longer life, health is a serious problem to them. More attention is accordingly needed to improve their health.

On the other hand, the proportion employed implies that some of the elderly have opportunities and good health to work. Table 5 shows an increasing percentage of the employed from 54.2% in 1970 to 62.9% and 65.9% in 1980 and 1990, respectively. This is true for both men and women.

Such a percentage increase of the employed is attributed to an increase in their population base, the denominator, at a rate lower than the economically active population, the numerator. The case has the following implication: there are enough opportunities and supplies of work for the healthy and capable elderly. This is particularly so to a remarkably increasing percentage of sales workers from 8.8% in 1980 to 9.2% in 1990.

The Aging Population and Their Families

Chayovan et al. (1992) found that 96% of the total aging population lived with their family, including their spouse, their children and/or relatives. Only 4% of them were found living by themselves. However, according to Chayovan (1995), in practice, the latter may not have really lived alone. This can be explained by the fact that the census or the survey defines a "household" according to its address number, while in practice the following is common in the Thai society, especially in the rural areas. When a son/daughter gets married, he/she may build a house next to the parents's house or in the same area as the latter's and share the same address number as the latter's. When the economic status of the couple reaches a satisfactorily level, they will have an address number for their own household. Accordingly, it is possible that elderly people who reported living alone may in fact have been living next door to or in the same area as their grown-up children.

Comparing between the 1980 and 1990 censuses, Chayovan (1995) finds that the trend was maintained with 76% and 77% of the total elderly found in 1980 and 1990, respectively, living with at least one son/daughter.

The comparative results seem to be supported by the findings of a study on the Thai families (Vibulsresth, 1995). According to the study, most of the respondents, irrespective of sex in both urban (87.5%) and rural areas (89.6%), preferred a household with the elderly to a household without them. The following are the reasons given: family members will be provided with warm-hearted feelings and advice; the elderly will help take care of the house and the children will take care of the elderly. On the other hand, these are some reasons given by those preferring a household without the elderly:

the elderly are fastidious and grumbling; and there is no need to worry about how to take care of the elderly.

Social Insurance and Social Welfare

According to Gill, et al. (1992), there are two main approaches to social security: social insurance and social welfare. In addition, these two terminologies make a base for such approaches: equity and adequacy.

Gill, et al. (1997 : 7, *ibid.*) define equity as the fairness of the system in terms of providing a reasonable return to participants on the basis of their past contributions. On the other hand, adequacy means the capacity of the system to provide reasonable support to those elderly persons in need of such support.

Pananiramai and Ingpornprasit (1994) maintain that, to prevent social problems, an arrangement system allowing the retired elderly to survive is needed. Answers to the questions of the standard of living after retirement can be divided into two approaches.

On the one hand is the idea that what the society needs is only to allow the elderly to live by a minimum standard acceptable to the society -- (the so-called "social welfare" approach ... author). According to this concept, the retirement benefits are paid from taxes. Those entitled to the benefits are proved to have no other sources of income and essentially to be in need. The rates of benefits are not based on their income or the number of years in service before retirement.

On the other hand, the social insurance concept is that the standard of living after retirement should not be significantly different from that before retirement. Social insurance is common in today's world. The recipients have to contribute to the benefits from their own salary. In this respect, the benefits vary according to the number of years in service and the amount of money the recipients pay in contributions.

However, neither the social insurance nor the social welfare concepts discuss much about the quality of services, which is also related to equity of and accessibility to the services. In other words, social insurance and welfare may reach the level of equity

and adequacy while still being at a low level of quality or with a difficult access to quality services.

In the case of Thailand, only a small fraction of the population is provided with old age security. According to Pananiramai and Ingpornprasit (1994 : 3, *ibid.*), there are only two groups of population provided with reasonable retirement benefits. They are government employees and the employees of certain state enterprises. Both groups together account for 6 percent of the total economically active population in Thailand. In the future, when the benefits are extended to private enterprise employees, the percentage of those reasonably provided with retirement benefits will increase to about 18 percent of the total economically active population. The figures reflect the problem that the majority of the elderly in Thailand are not adequately provided with old-age security.

Such a problem of inadequate old age security is also reflected in the following empirical information: the currently available old age benefits are operated in the form of a provident fund. It has been run by the Department of Public Welfare, the Ministry of Interior, since 1993 to provide monthly allowances of TB 200 to an elderly person until the end of his/her life. In 1993, the government budget amounting to TB 12 million was allocated to the fund and paid to 20,000 elderly people in 5,332 villages in three months (Chanprasert, 1994). The budget rose to TB 48 million in 1994 and to TB 140 million to reach the target of 55,000 elderly people in 1998 (Pramani, 1995).

At present, the Department of Public Welfare has also provided welfare social services to the elderly. They include, for example, public welfare institutions providing residential care for the elderly, welfare services at social service centers and mobile units to enable the non-institutionalized elderly to live happily with their families, emergency home care for the elderly, encouragement and support of activities in the private sector, etc. (Chanprasert, 1994, *ibid.*).

According to Siripanich (1994), the operation of old age plans in Thailand can be divided into three categories :

1. By the government :

Most old age services are integrated into the governmental regular services. Geriatric clinics are available in some state-run general hospitals throughout the country. However, free-of-charge services to the elderly are offered by the Ministry of Public Health and in the Bangkok Metropolis only, beginning in 1993. However, according to Siripanich (1994 : 6/3.), the process of services is complicated. As an example, recipients entitled to services free of charge are those who prove that they are entitled to no other privileges.

2. By the private sector :

There are lots of services provided by the private sector. Nevertheless, they are available only in the urban areas and with high prices.

3. By the elderly themselves :

There are elderly clubs providing health services in terms of prevention, cure, and rehabilitation in many communities throughout the country. These clubs have formed a national aging council.

Scenarios to Consider

As mentioned earlier, the current trend towards an increasing number and proportion of the elderly, as part of the structural change of population in Thailand is contributed to by an increase in the average life expectancy of the population. Such an increase is the result of public health improvement. To explain the process, Mohs's (1991) sequential paradigms in health can be considered. In other words, the paradigm of ill health in Thailand has shifted from malnutrition to infectious disease and to chronic disease. According to Mohs (1991), the third, chronic disease paradigm considers the cause of ill health as insufficient prenatal and maternity care, which relates in part with unwanted children. Moreover, inadequate environmental conditions, inadequate life style and social pathology are also assumed as the causes of chronic diseases. A holistic approach is suggested. It includes the development of knowledge and responsibility of the population at the individual, family, and community levels. In addition, efficient use of

appropriate science and technology is part of the philosophical base. In this regard, weight must be put equally on prevention, care, and rehabilitation.

One should note that a higher life expectancy, or a longer life, does not necessarily reflect healthy aging, unless with proper health care before retirement. In other words, improper health care before retirement may decrease health expectancies to the states of illness, disability, or even handicap, despite a long life. One may consider the Australian experience. As shown in Graph 1, more than 80 percent of Australian women in 1988 survived to the age 70. However, only half of the survivors were free of disability (Mathers, 1991).

It is notable that the states of health in Australia, as categorized in Mathers's study (1991, *ibid.*) cannot be considered an international standard. Nevertheless, the author finds that the Thai experience does not differ much from what identified in Mathers' study (1991, *ibid.*). One may see it from the reasons for not working as reported by population aged 60 years and over. As mentioned earlier, 85 percent of them said they were unable or too old to work. From the reason given, one cannot tell if it relates to disability or handicap, whether severe or not. Nevertheless, the reason given implies its relation in part with improper health care before retirement. A study by Chayovan (1992) supports the notion. She finds that what the elderly prepare for themselves are financial and living places. They seem to forget about their health. This is also true for youths. A study of mortality of the youth reveals the main cause as diseases associated with deteriorating health as time passes by. The diseases are, for example, heart failure, diabetes, and hypertension (Kiranandana, et al., 1989). The problems can be alleviated should one prepare oneself properly, particularly with appropriate health care. Such a pattern of illness should affect a person's health when he/she becomes elderly. The above notion implies that the pattern of health of the future elderly in Thailand may not be much different from that of the current elderly.

Conclusion

One can see that the health problems of the elderly due to improper health care before retirement will affect the well-being of the elderly. This is true for both the 6% who have security coverage and the uncovered majority. Besides, the latter will face more serious problems than the former. This is due to the fact that the uncovered majority can rely only upon social welfare, which focuses on the curative aspect of public health.

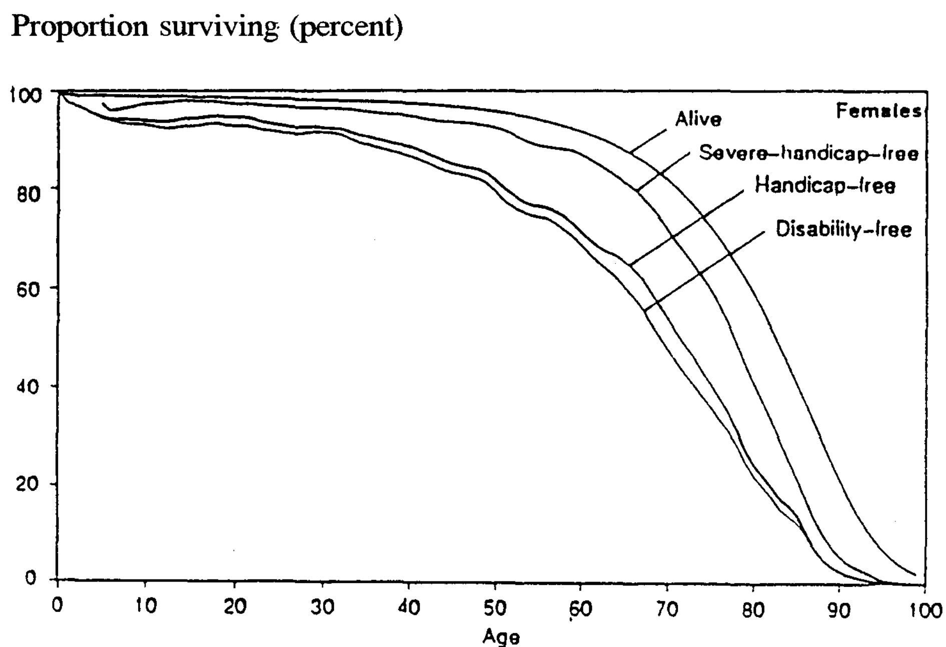
In fact, prevention, cure, and rehabilitation should be weighted equally for healthy aging. Social-related health services are also required. They include programs facilitating the elderly to live happily by themselves and with dignity. Commuting buses specially designed to facilitate the elderly, street fly-overs with escalators, and shop-by-phone services could, for example, be made available, particularly in the urban areas. At the same time, the elderly in the rural areas need to be provided with, for example, more bus services and other assistance provided at social service centers and midwifery. Such social services not only help support the status and dignity of the elderly, but also improve their moral health and as a result their longevity. Adjustment to jobs after retirement should also be part of social services.

Policy formulation should respond to the fact that the majority of the population needs more social welfare than insurance. Accordingly, the aspects of "equity", "adequacy", and "quality" of old age or retirement benefits are of equal importance in the Thai society.

In order to upgrade the quality of services, one should not forget the increasing roles of medication, medical doctors, hospitals, and advanced technologies in the near future (Wongboonsin, 1995). Such a trend will make the policy makers work hard so as to allow all the population, from the grass-root to the top, to gain access equally and adequately to quality services. The governmental task of weighing between "welfare" and "human capital" investment is more difficult and complicated than the task of a private enterprise aiming only at profit making.

Graph 1 Survival Curves for Australian Females, 1988.

Proportion surviving (percent)



Source: Mathers, Colin, 1991, *Health Expectancies in Australia 1981 and 1988*, Australian Government Publishing Service, Canberra. Commonwealth of Australia copyright reproduced by permission.

Table 1 Population projection by age group, 1990-2020

Age Group	1990	1995	2000	2005	2015	2020
0-14 yr.	17,062	16,544	15,960	15,473	14,399	13,884
15-24	11,253	11,550	11,466	11,059	10,390	10,025
25-64	24,896	28,284	31,306	34,094	38,421	39,541
65+	2,629	3,022	3,676	4,411	5,866	7,055

Source : National Economics and Social Development Board, 1995.

Table 2 Percentage of the population aged 60 years and over by area and region: 1960, 1970, 1980 and 1990

Area and Region	1960	1970	1980	1990
Whole Kingdom				
Pop. aged 60+	100.0	100.0	100.0	100.0
Municipal Area				
Pop. aged 60+	-	12.8	16.4	16.3
Non-Municipal Area				
Pop. aged 60+	-	87.2	83.4	83.7
Bangkok Metropolis				
Pop. aged 60+	8.2	8.4	9.7	8.7
Central Region (excluding BKK.)				
Pop. aged 60+	27.4	26.2	26.3	25.5
Northern Region				
Pop. aged 60+	22.2	22.9	21.8	22.4
Northeastern Region				
Pop. aged 60+	28.4	27.8	28.1	30.6
Southern Region				
Pop. aged 60+	13.8	14.7	14.1	12.8

Source : National Statistical Office, 1994. **Analytical Report II : Aging Population in Thailand.** Population and Housing Census, 1990, Table B : 92 (from 1960, 1970, 1980 and 1990 Population and Housing Census, National Statistical Office.

Table 3 Percentage[1] of the population aged 60 years and over by marital and sex: 1970, 1980 and 1990

Marital Status and Sex	Total			Male			Female		
	1970	1980	1990	1970	1980	1990	1970	1980	1990
Single	1.9	1.8	2.0	1.7	1.5	1.5	2.0	2.1	2.4
Ever-Married	96.7	96.8	96.5	95.2	95.5	95.1	98.0	97.9	97.6
Currently Married	57.4	56.9	59.9	76.9	76.6	77.6	41.6	41.8	44.9
Widowed	36.1	35.8	33.3	16.0	16.9	15.4	53.3	53.2	48.6
Divorced[2]	0.8	2.4	0.6	0.5	2.0	0.3	1.0	2.9	0.8
Separated	1.9	-	1.8	1.8	-	1.4	2.1	-	2.0
Unknown Ever-Married	0.5	1.7	0.9	-	-	0.4	-	-	1.3
Priests	1.4	1.4	1.5	3.1	3.0	3.4	-	-	-

[1]Excluding unknown marital status.

[2]For 1970 data include persons who marital status were divorced and separated.

Source : National Statistical Office, **ibid.**, Table D : 12.

Table 4 Percentage of the population aged 60 years and over by literacy and sex: 1970, 1980 and 1990

	1970	1980	1990
Total	32.3	44.2	70.5
Male	58.5	63.3	81.3
Female	10.6	27.9	61.3

Source : National Statistical Office, **ibid.**, Table F : 18.

Table 5 Percentage of the population aged 60 years and over by economic activity and sex: 1970, 1980 and 1990

Type of Economic Activity	Total	Male	Female	Total	Male	Female	Total	Male	Female
Economically active	42.9	57.2	31.0	38.2	50.7	27.7	37.8	48.1	29.0
Employed	23.3	-	-	24.0	-	-	24.9	-	-
Looking for work	0.1	-	-	0.3	-	-	0.9	-	-
Waiting for farm season	19.5	-	-	13.9	-	-	12.0	-	-
Non-Economically active	57.1	42.8	69.0	61.8	49.3	72.3	62.2	51.9	71.0
Percentage of the employed	54.2	57.9	48.5	62.9	62.5	63.4	65.9	65.3	66.7

Source : National Statistical Office, **ibid.**, Table G and H : 19-20.

Table 6 Percentage of the population aged 60 years and over by reasons for not working and sex : 1980 and 1990

Reasons for Not Working	1980	1990
Total		
Home Worker	10.7	5.5
Unable to Work or Old	83.8	87.0
Sick	-	1.4
Pension	-	3.0
Others	5.5	3.1
Male		
Home Worker	6.0	1.4
Unable to Work or Old	81.9	82.6
Sick	-	2.3
Pension	-	6.6
Others	12.1	7.1
Female		
Home Worker	13.3	8.0
Unable to Work or Old	85.0	89.8
Sick	-	0.8
Pension	-	0.8
Others	1.7	0.6

Source : National Statistical Office, **ibid.**, Table L : 23.

Table 7 Percentage of employed population aged 60 years and over by last year's occupation: 1970, 1980 and 1990

Last Year Occupation	1970	1980	1990
Total	100.0	100.0	100.0
Professional, Technical and Related Workers	0.7	0.7	0.8
Administrative, Executive, Managerial Workers and Government Official Not Classify Somewhere Else	0.5	0.6	0.7
Clerical and Related Workers	0.3	0.3	0.4
Sales Workers	7.6	8.8	9.2
Agricultural, Animal Husbandry and Forest Workers, Fishermen and Hunters	83.5	81.6	81.3
Miners, Quarrymen, Well Drillers and Related Workers	0.2	0.1	a
Transport Equipment Operators and Related Workers	0.3	0.3	0.5
Craftsmen, Production Workers and Laborers	4.9	5.8	6.0
Service Workers	2.0	1.7	1.0
Workers Not Classifiable by Occupation or Unknown	a	0.1	0.1

Note : a = less than 0.1

Source : National Statistical Office, **ibid.**, Table J : 21.

Reference

CHANPRASERT, Iravat.

1994 "Social Welfare and Insurance for the Elderly in Thailand." Paper presented at a Seminar on Measures for the Elderly on July 4, 1994 at the House of Representatives, Thailand. (in Thai).

CHAYOVAN, Napaporn.

1995 "Is There an Increasing Number of the Deserted Elderly?" **Journal of Demography** 11,1 (March) : 49-55. (in Thai).

CHAYOVAN, Napaporn, John Knodel and Siriwan Siriboon.

1992 **Familial Support and the Life Course of Their Elderly and Their Children.** Monograph Series No. 197/35. Bangkok: Institute of Population Studies, Chulalongkorn University. (in Thai).

GILL, Richard T., et al.

1992 **Our Changing Population.** Englewood, New Jersey : Prentice Hall.

HUMAN RESOURCES DEVELOPMENT PLANNING DEPARTMENT, Office of National Economic and Social Development Board.

1995 **Thai Population Projections 1990-2020.** Bangkok. (in Thai).

INSTITUTE OF POPULATION STUDIES, Chulalongkorn University.

1993 "Population Trends in Thailand," **Population Newsletter** 51 (August) : 1-5. (in Thai).

KIRANANDANA, Thienchay, K. Wongboonsin and S. Kiranandana.

1989 "Population and Development in Thailand: With Special Reference to Healh/Nutrition, Education and Old-Age." In **Frameworks for Population and Development Integration.** Vol.II, Part 5, pp. 291-415. Asian Population Studies Series No. 93. Bangkok: ESCAP, United Nations.

KIRANANDANA, Thienchay, et al.

1989 **Patterns of Ill Health and Mortality.** Bangkok: Chulalongkorn University Printing House. (in Thai).

MATHERS, Colin.

1991 **Health Expectancies in Australia 1980 and 1988.** Canberra: Australia Government Publishing Service.

MOHS, E.

1991 "General Theory of Paradigms in Health." **Scandinavian Journal of Social Medicine Supplementum** 46: 14-24.

NATIONAL ECONOMICS AND SOCIAL DEVELOPMENT BOARD.

1995 **Population Projection in Thailand, 1990-2020.** Bangkok. (in Thai).

NATIONAL STATISTICAL BUREAU.

1994 **Analytical Report No. 2: Aging Thai and the 1990 Census.** Bangkok: R.S.P. Printing House. (in Thai).

PANANIRAMAI, Matana and Nirat Ingpornprasit.

1994 **Population and the Survival of Social Security: Old-Age Benefits.** Research Report No. 5 of "Population Trends in Thailand: A Macro-Level Study for Policy-Making Purposes in the Upper North and the Lower South." Bangkok: Office of National Economic and Social Development Bureau. (in Thai).

PRAMANI, Swai.

1995 "Governmental Policies Concerning the Elderly." In **Seminar of a Comprehensive Research Project on the Elderly Research in Thailand**, pp. 15-25. Bangkok : Mahidol University. (in Thai).

ROGERS, Richard G.

1995 "Sociodemographic Characteristics of Long-Lived and Health Individuals." **Population and Development Review** 21 (March) : 33-58.

SIRIPANICH, Banlu.

1994 **"Measures for the Elderly in the Present and Future Thai Society: Health and Public Health."** Paper presented at a Seminar on Measures for the Elderly on July 4, 1994 at the House of Representatives, Bangkok, Thailand. (in Thai).

VIBULSRESTH, Suvatana.

1995 "The Elderly and Their Attitude and Values Concerning a Family." In **Summary Report on the General Family Survey,** pp. 75-89. Bhassorn Limanonda, et al. Monograph Series No. 227/38. Bangkok : Institute of Population Studies, Chulalongkorn University. (in Thai).

WONGBOONSIN, Kua.

1995 "Growth of Aging Population Structure: Public Health and Marketing Trends." **Chulalongkorn Journal** 29 (October-December) : 76-91. (in Thai).

1995 **Population and Development**. (2nd Edition). Bangkok : Chulalongkorn University Printing House. (in Thai).

1996 "Demos: Life Changes Among Population in Thailand." In **Visions For Thai Studies,** pp.129-178. Chaiwat Sta-Ananda, ed. Bangkok : Thailand Research Fund Institute. (in Thai).

WONGBOONSIN, Patcharawalai and K. Wongboonsin.

1995 "Population and Human Development in ASEAN, Indochina, and Myanmar," **Journal of Demography** 11,2 (September) : 43-76.

UNITED NATIONS. Department for Economic and Social Information and Policy Analysis.

1993 **World Population Projection: The 1992 Revision.** New York: United Nations.

1994 **The Sex and Age Distribution of Population: The 1994 Revision**. New York : United Nations.