Sauwaluck Koojaroenprasit, Kasetsart University, Thailand Sumaree Pumpinyo, Kasetsart University, Thailand

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Abstract

This research aimed to study 1. To study the reasons and the desirable characteristics of the elderly nursing home 2. To study the financially feasibility to invest in the elderly nursing home and 3. To study the sensitivity analysis to invest in the elderly nursing home. The primary data are from both the interview the small and medium sizes of the elderly nursing home and also collect data from the consumers by using the questionnaire. The sample size was 200. A questionnaire survey was used. The sample was 200. It was found that the respondents were female and male of 70 percent and 30 percent, respectively. The majority respondents were in age group more than 50 years old, with income more than 47,000 baht per month. The results indicated that the most important reasons to put their parents in the nursing home are; safer to stay in the nursing homes than stay at home, there are medical specialist in charge, and 24-hour care, respectively. Person influencing decision making to choose the nursing homes for their parents is themselves, parents, relatives, and friends, respectively. The results showed that gender difference affected only one reason to put parents in the nursing home; the nursing home is near their residences. The age group differences affected the two reasons to put parents in the nursing homes; well-known nursing homes and want their parents to have friends at the same age. The financial feasibility study found that investing in a nursing home for the elderly is worth the investment.

Keywords: Nursing Homes, Bangkok, Decision-Making

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Introduction

Thailand will rush into "aged society" when the percentage of the elderly reaches 22.7 percent in 2030 and will increase to 25.1 percent in 2035 (Thailand Population in the Future). Progress of modern medical technology has extended human life expectancy of Thai people from 62 years in 2009 to 75.4 years in 2017. Thai family structure changed from extended family to nuclear family. The fertility rate (average number of children per woman) declined from 4.9 percent in 1974 to 1.6 percent in 2017 and will decrease to 1.03 percent in 2033 and it is expected that the birth rate will be close to mortality rate in 2022 (Pramote Prasatkul, 2013). The Aging Index (the number of elderlies per 100 persons younger than 15 years old) will increase from 45 in 2005 to 174.4 in 2035 (table 1).

year	Number of Population (million)			Aging Index	
	Total	Youth	Elderly		
2005	62.2	14.3	6.4	45	
2010	63.7	13.2	7.5	57	
2015	64.6	12.3	9.0	73.4	
2020	65.1	11.2	11.0	98	
2025	65.1	10.4	12.9	123.6	
2030	64.5	9.8	14.6	149.9	
2035	63.4	9.1	15.9	174.4	

 Table 1: Number of Population by Age and Aging Index 2005-2035

Source: Thailand Population in the Future

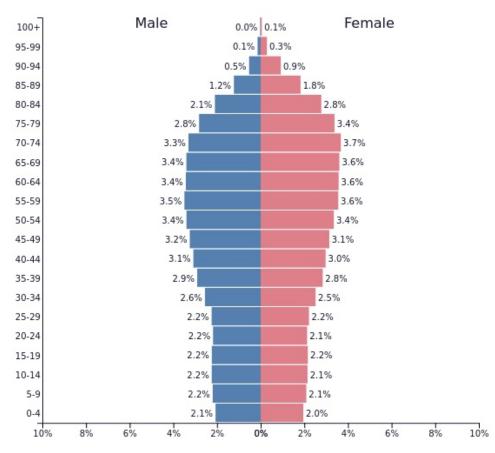


Figure 1: Thailand Population Pyramid in 2050

Source: populationpyramid.net

Figure 1 shows the distribution of the 62 million men and women in Thailand in 2050 by different age. This population pyramid is a 'constrictive pyramid' shape, which indicates the society with relatively high older population and with low fertility and mortality rates.

As the size of the elderly increases, family caregiving has become an important issue (Kong, 2007). Traditional culture for Thai society has taken for granted that the adult children take care of their parents. However, major changes in Thai society have altered traditional culture. Nowadays, Thai family structure is a nuclear family, especially in Bangkok. As a result, taking care of the elderly in the family tend to decrease and combined with various diseases that the elderly must face, in particular, chronic illnesses which are the health problems for the elderly, such as blood pressure, diabetes, heart disease, paralysis etc., making the elderly more dependent. Many families have decided to put their parents in the nursing home. Placing a loved one to a nursing home is perhaps one of the most painful and difficult decision to make for family caregivers (Caron, Ducharme & Griffuth, 2006).

Objective

- 1. To study the reasons to put parents in the nursing home in Bangkok, Thailand and to examine the differences in sex and age on the reasons to put parents in the nursing homes
- 2. To study the financially feasibility to invest in the elderly nursing home
- 3. To study the sensitivity analysis to invest in the elderly nursing home

Methodology

The study was done in Bangkok, Thailand. The samples were 200. The current study used a questionnaire survey as a primary data source. Data analysis applied both quantitative and qualitative methods. The questionnaire was divided into three parts. The first part probed for personal data. The second part inquired about behavior of using the Nursing home service. The final part was used to determine on the use of consumer services. The questionnaire was tested for reliability and internal consistency. Its internal consistency was estimated using Cronbach's Alpha. Coefficients over 0.7 are considered acceptable, with coefficients greater than 0.8 considered good (Malthotra and Birks, 2006). In this study had a Cronbach's Alpha of 0.915, indicating a highly reliable instrument.

The t-test and F-test were used for testing personal factors (gender, age) and the reasons to put parents in the nursing homes with the following hypothesis.

H0: personal factors (gender, age) affect the reasons to put parents in the nursing homes H1: personal factors do not affect the reasons to put parents in the nursing homes

Results

The respondents were female and male of 70 percent and 30 percent, respectively. The majority respondents were in age above 50 years old, the majority level of income more than 47,000 baht per month.

The reasons to put their parents in the nursing home were summarized in table 2. The most important reasons to put their parents in the nursing home are safer to stay in the nursing homes than stay at home, there are medical specialist in charge, and 24-hour care, respectively.

Reasons		S.D.	Level of Importance
24-hour care	4.29	0.848	The most important
There are medical specialists in charge	4.35	0.867	The most important
Well-known	3.76	0.909	Very important
Safer than stay at home	4.48	0.776	The most important
Do not have time to care of their parents	3.86	1.018	Very important
Want their parent to have friends at the same age	4.11	0.0007	Very important
The nursing home is near their residences	4.06	1.033	Very important

Notes: \bar{x} : 4.21-5.00 = the most important; 3.21-4.20 = very important; 2.61-3.40 = moderate; 1.81-2.60 = less important; 1-1.80 = the least important

Person Influencing	\overline{x}	S.D.	Level of Importance
Themselves	4.07	0.086	Very important
Parents	3.91	1.062	Very important
Relatives	3.49	0.902	Very important
Friends	2.86	0.986	Moderate

Table 3: Person Influencing Decision Making to Choose the Nursing Homes

Notes: \bar{x} : 4.21-5.00 = the most important; 3.21-4.20 = very important; 2.61-3.40 = moderate; 1.81-2.60 = less important; 1-1.80 = the least important

From table 3, person influencing decision making to choose the nursing homes is ourselves, parents, relatives, and friends, respectively.

Table 4: Hypothesis test for Gender and Reasons to Put Parents in the Nursing Homes

Reasons	t value
24-hour care	0.658
There are medical specialists in charge	1.311
Well-known	-0.61
Safer than stay at home	-0.58
Do not have time to care of their parents	-1.15
Want their parent to have friends at the same age	-1.64
The nursing home is near their residences	-2.17**

Note: *** denotes statistically significance at the 0.01 level

** denotes statistically significance at the 0.5 level

* denotes statistically significance at the 0.1 level

Table 4 shows that differences in gender do not affect all the reasons to put parents in the nursing homes except the reason that the nursing home is near their residences.

Reasons	F value
24-hour care	0.967
There are medical specialists in charge	0.136
Well-known	2.708**
Safer than stay at home	1.43
Do not have time to care of their parents	0.642
Want their parent to have friends at the same age	2.261*
The nursing home is near their residences	1.433

Table 5: Hypothesis test for Age and Reasons to Put Parents in the Nursing Homes

Note: *** denotes statistically significance at the 0.01 level

** denotes statistically significance at the 0.5 level

*denotes statistically significance at the 0.1 level

Table 5 shows that differences in age have the two reasons to put parents in the nursing homes; well-known nursing homes and want their parents to have friends at the same age. However, differences in age have not affect the reasons for 24-hour care, there are medical specialists in charge, safer than stay at home, do not have time to care of their parents and the nursing home is near their residences.

A cost-effectiveness study in the case of a small nursing home with only 10 beds, with the cost assumption as follows: 1. Build 10 single-detached houses or 1-storey villas. 2. Each house has a usable area of 36 square meters per house. Construction cost per square meter 12,000 baht per square meter (Standard price list per unit of greenhouses, Property Appraisers Association of Thailand 2020 – 2021) 3. Total construction area 360 sq.m. 4. Design costs account for 7.6 percent of the construction cost. 5. Investment uses 50 percent of private investment and 50 percent of borrowing. 6. Monthly rent increases by 5 percent per year and remains constant from the 5th year onwards. 6. Labor wages increase 5 percent per year according to inflation and stable from the 5th year onwards. 7. Project life 20 years 8. Medical equipment and exercise equipment replaced every 5 years 9. Salvage value is 2percent of investment expenses, excluding land. The cost structure of the elderly care business consists of: Investment expenses which are fixed costs of the project and operating expenses which are variable costs, capital expenditures, investment expenses land 3 rai at 4,000,000 baht per rai, total 12 million baht, Design cost accounted for 7.6 percent of the total construction cost of 340,000 baht. One-story house 36 square meters The average price per square meter is 12,500 baht, with a total of 10 rooms per square meter, including a construction cost of 4,500,000 baht. Construction of roads, garden areas and common areas 1,600 square meters, a price of 500 baht per square meter, a total of 800,000 baht, and furniture costs of 989,000 baht. Operating expenses include: Variable costs such as salaries, raw materials, water, electricity, taxes, etc. In this study, the following include: Wages for workers consist of: Salaries of all personnel working in nursing homes for the nursing home. Water, electricity about 1,000 baht per room 7 rooms, total 7,000 baht per month or 84,000 baht per year Water and electricity Central area accounted for 2 percent of revenue, equal to 109,200 baht/year. Cost of food, budget for purchase of food ingredients 800 baht/day, total 292,000 baht per year. 4. Repair expenses accounted for 2 percent of total revenue, equal to 109,200 baht/year. 5. Other miscellaneous expenses (such as escort to the doctor, cleaning supplies, miscellaneous items) accounted for 3 percent of total revenue, equal to 163,800 baht/year. 6. Loan interest Principal 4,614,500 baht, loan term 10 years, monthly installments, interest rate 5.47 percent.

Scienario	NPV (Baht)	IRR (%)	B/C ratio	SVTb	SVTc
Basic Case	19,869,831.63	20	1.47	24.13	35.59
Case:monthly rent reduction by 10%	13,012,105.39	16	1.34	17.51	23.52
Case:Cost increase by 10%	14,286,983.04	16	1.34	17.35	23.26
Case:Monthly rent reduction and cost increase	7,480,874.09	13	1.22	10.07	12.3
Case:No tax	28,687,750.23	23	1.75	61.02	34.84

Table 6: Summary of cost-effectiveness analysis nursing home with 10 beds

Source: own calculation

The financial feasibility study found that investing in a nursing home for the elderly is worth the investment. In the case of houses, or 10 houses that can accommodate 10 elderly people. The project has a return of 20 percent. For analyzing the sensitivity of the project, the benefits are reduced by 10 percent, the total cost is increased by 10 percent, or the benefit is reduced by 10 percent and the total cost is increased by 10 percent. The project is also worth the investment. However, the return is not much compared to some businesses. This is because there is a high operating cost of personnel that require special expertise. So if the government has a tax exemption, the returns will increase, which will incentivize more people to invest in this business to accommodate the rapid rise of the elderly.

Conclusion and Recommendation

The respondents were female and male of 70 percent and 30 percent, respectively. The majority respondents were in age group more than 50 years old, with income more than 47,000 baht per month. The results indicated that the most important reasons to put their parents in the nursing home are safer to stay in the nursing homes than stay at home, there are medical specialist in charge, and 24-hour care, respectively. Person influencing decision making to choose the nursing homes for their parents is themselves, parents, relatives, and friends, respectively. The results showed that gender difference affected only one reason to put parents in the nursing home; the nursing home is near their residences. The age group differences affected the two reasons to put parents in the nursing homes; well-known nursing homes and want their parents to have friends at the same age. The financial feasibility study found that investing in a nursing home for the elderly is worth the investment.

According to this study the most important reason to put parents in the nursing homes is the nursing homes are safer than stay at home and the person influencing choosing the nursing homes was themselves so the nursing homes should provide the nice, clean and attractive place to attract more clients.

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Contact email: fecoslp@ku.ac.th