Willingness to Pay Assessment for Assisted Living Residences in Thailand

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Received: 28 November 2022

Revised: 15 December 2022

Accepted: 15 December 2022

Abstract

Thailand has become an aging society and would be a complete-aged society in a few years. Elderly population in Thailand has been increased according to lower fertility rate, lower birth rate, and longer life expectancy at birth of Thai population. In addition, Thai family size are smaller and Thai women who play important role as a main caregiver are more likely to be educated, be single and be in the labor market instead of being formally unemployed, so, a number of familial caregivers become inadequate and residential Long-term Care (LTC) institution for elderly become more important. Assisted Living Residences (ALs) are taken into account for residential LTC institutions and mainly aim to maintain or improve life satisfaction by encouraging Quality of Life (QOL) and well-being of residents. The purpose of this study is to determine price of ALs and observe the preference of ALs, so, we conduct Willingness to Pay (WTP) survey to estimate how people are willing to pay for ALs in Thailand. The double bounded WTP questions with three attributes related to QOL are conducted and the data is collected from two groups of respondents (Generation Y& Z, Baby boomers & Generation X). Based on Theory of consumer's choice and Random Utility Theory (RUT), the utility from choosing option is function of an option's price, respondents' preference for attributes, respondents' characteristics, and an error term. Then, WTP could represent individual's preference towards each ALs service (attitude). The findings from random logit model show that Baby boomers & Generation X respondents significantly have higher WTP than younger group for based case. It is interesting that older group are mostly focus on based case and willing to pay for additional features less than younger group. It is implied that Baby boomers & Generation X concern more about moving into ALs since they are becoming retirement age. While Generation Y & Z do not want to live in ALs reflecting from negative sign of their WTP, but if they have to inevitably live in ALs, they would pay more for additional features such as extended medical services, dinner added, and private room.

Keywords: Assisted Living Residences, Contingent Valuation, Long-term Care Residence in Thailand, Quality of Life, Willingness to Pay

Introduction

Thailand has become an aging society since 2005 and is going to be a complete-aged society in a few years according to rapid increase in Thai elderly population in a half century ago. Foundation of Thai Gerontology Research and Development Institute (2019) claimed that this change in elderly population is caused by the longer life expectancy and the lower birth rate per woman. Furthermore, Thai women who used to be important role as a main caregiver are more likely to be educated, be single and be in the labor market instead of being formally unemployed and staying at home. Also, family size is smaller overtime and spouses are more willing not to have children. So, a number of familial caregivers become inadequate and parental care efficiency becomes an issue.

Additionally, the majority of elderly are experiencing aged-related problems and degenerative diseases. It could be referred that their physical and mental health are typically getting worse over time and elderly would encounter the risk of mortality, activity limitation and chronic illness which lead to worse Quality of Life (QOL). Therefore, demand for personal caregiving and health care system are increased in both family and social level.

According to the greater in elderly population together with less informal health services by family, and more elderly living alone. These contribute to a larger number of frail elderly who need supervision and personal care. Consequently, it implies that demand or preference of residential long-term care (LTC) institutions is growing. So, it leads to the objectives of the study that is to determine price of ALs based on demand sides by using WTP method.

Review of literatures

ALs are taken into account for residential LTC institutions that provide residential facilities involving long-term living which are included housing, support services, and health care for frail elderly residents who require more help on daily tasks as family could not provide. ALs are typically designed to be homelike and primarily serve assistance with Activities Daily Life (ADL) such as eating, bathing, dressing, transportation, etc., staffs' supervision, health services, and emergency call service. The purpose of ALs is to encourage QOL of residents with mainly emphasizing to maximize dignity, autonomy, privacy, independence, and safety.

Stage of life theory indicate that human life could be classified into 6 periods. First is 'infancy period' which includes intrauterine period to one year after birth. Next is 'childhood period' involving from 1 to 13 years old. Next is 'youth period' aging from 13 to 25 years old which is generally healthy and active. Next, 'maturity period' is from 25 to 61 years old which physical degeneration gradually occurs. Lastly, elderly period who would be inevitably more vulnerable in physical and mental way when getting older. Therefore, elderly need higher level of assistance and intensive care for more convenient living and their safety. So, medical services are necessary for elderly and would be an attribute for evaluating WTP for ALs in this study.

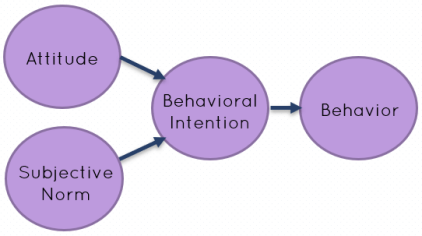

Figure 1 The Theory of Reasoned Action

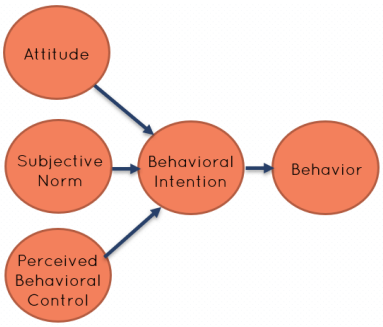

Figure 2 The Theory of Planned Behavior

Source: (J. Madden et al., 1992).

From these the Theory of Reasoned Action and the Theory of Planned Behavior, it could be concluded that performing behavior of Thai people about taking care of elderly parents follows these two theories because Taking care of elderly parents of Thai children is influenced by attitudes such as closeness in family (that Thai children are taught since they were young to stay and support their elderly parents when growing up), subjective norm such as filial culture, religious beliefs based on Buddhist teachings and repayment system, and perceived behavioral control or other related factors such as income level, marital status, and individual welfare. In the other side, Asian and Thai parents generally expect their children to be their caregiver when getting older. However, Thai children might be suffered from various negative effects and difficulties from being caregiver such as tiredness, stress, disencouragement, work overload, and financial problems from quitting their job to be full-time caregiver. These contribute to opportunity loss and emotional problems of children being caregiver, then, these children would give up and no longer control their behavior.

Nevertheless, subjective norm in Thai context have already changed. Filial culture and repaying parents become more resilient than the past that is Thai children are more likely to

bring their parents to live in ALs without guilty. Therefore, ALs is where elderly could comfortably live in their retirement life as well as children could repay parents by finding appropriate and convenient residences for them. We could summarize that these theories involve attitude about elderly living with children that is how much respondents value assisted living residences that would be factors in this study.

Thai people could be divided into 4 generations according to parenting, conception, and experience which lead to different behavioral intention or behavior. First is 'Baby boomers' that were born between 1946 and 1964 (age 57-75). Baby boomers strongly believe about seeking for better tomorrow, have good social skills but lack of technological skills, so, baby boomers are diligent, patient, and thrifty, so, they are rational, dedicated, loyal, earnest and willing to be employed by a single company for their whole life and retirement is not preferred. Second is 'Generation X' which were born between 1965 and 1979 (age 42-56). (Parents of Gen X generally work hard and leave them alone at home. Thus, they have to use their personal skills to live on.). In contrast with Baby boomers, Gen X are lack of social skills but technologies are initially involved with Gen X. Therefore, this generation have more choices. Then, they become less patient, less loyal, more independent, more creative than Baby boomers and seek for work-life balance. Third is 'Generation Y' or 'Millennial Generation' which were born between 1980 and 1997 (age 23-41). Gen Y are coming of age during economic expansion and the rise of internet and social networking in line with they have high level of education and high technological skills. Thus, they prefer to consume and explore information through online rather than face-to-face or traditional interaction. Lastly, 'Generation Z', 'Net Generation' or 'Digital Kids' were born since 1997 and younger (age up to 23). They are more likely to prefer simplicity and become responsible because they could aware of current situations surrounding them from convenient accessibility to technologies, information, and news.

QOL estimation is used to be a proxy for health and well-being of individual. QOL could be influenced by many factors; first is supportive facilities, environments or privacy, and the remaining are health conditions, social relation, and socio-economics status. If surrounded environments in the ALs do not provide as better or equal QOL as staying at home, living in the ALs would not be the best option for elderly. In this study, I pick mealtime and privacy as the two of three attributes influencing WTP for ALs. Since mealtime is claimed that it has an important effect on physical and psychological health of residents. Gathering elderly to have

meal together in ALs could enhance social participation and improve their QOL from keeping elderly to stay away from isolation and depression because they could share experiences and develop short-lived emotional bonds during mealtime. Physically, it could improve food intake and nutritional level rather than eating alone. While privacy in residence is basic issue of residents' well-being. Moving to ALs might lead to feelings of loneliness and isolation for elderly who are not willing to live here. If ALs could provide choices which offer balance of socialization and privacy for elderly's needs, it ensures that their well-being is still maintained. A private room could provide privacy but resident might be isolated and depressed if he/she does not have opportunity of social interaction. While a shared room with roommates could provide more opportunity of social participation but trading off with lack of privacy.

Methodology

Contingent Valuation approach is based on theory of consumer's choice of Lancaster (1966) and Random Utility Theory (RUT) of McFadden (1973).

$$U_{\mathrm{is}} = \beta_0 + \gamma price_{is} + \sum_{k=1}^{K} \beta_k D_{kis} + \sum_{j=1}^{J} \alpha_j X_{jis} + \alpha_i + \varepsilon_{is} \quad (1)$$

As shown in equation (1), Where U_{is} represents the utility of respondent s obtaining from choosing option i, γ is the coefficient related to $price_{is}$. $price_{is}$ is bid price, D_{kis} is k^{th} attribute levels of ALs for respondent s choosing option i, β_k is k^{th} coefficient related to each attribute in the vector D_{kis} (marginal utilities) which represents respondents' tastes, X_{jis} is j^{th} personal characteristics of respondent s choosing option i (control variable), α_j is the coefficient related to X_{jis} deviating from β_k which represents other personal characteristics that influence choice, α_i is a random effect, and ε_{is} is an error term. Conditional on x, the choice probability of respondent s choosing option i which provides maximum utility is written as equation (2).

$$P_{is} = Pr(y = 1|x) = \frac{1}{1 + e^{-U_{is}}} \quad (2)$$

When respondent chooses a choice, trading-off between attributes and ALs cost would be occurred. Therefore, individuals' preferences could be estimated by WTP of attribute (D_k) as shown in equation (3).

$$WTP_k = \frac{\partial price}{\partial D_k} = \frac{\partial U}{\partial D_k} \div \frac{\partial U}{\partial price} = \frac{\beta_k}{\gamma} \quad (3)$$

I design 3 attributes extracted from the earlier concepts and theories for using in WTP survey. 3 attributes consist of 2 levels in each which are standard and extended for medical services attribute, breakfast and breakfast and dinner for mealtime attribute, shared and private room for room type attribute (as shown in table 1).

Table 1 All combinations and bid price of assisted living facilities' profiles *(Source: Author)*

Profiles	All combinations of facilities			Initial bid price (baht/month)	Second bid price (baht/month)	
	Medical services	Mealtime	Room type		Lower second bid price	Upper second bid price
1	Standard	Breakfast	Shared room (2 persons)	13,000	10,000	16,000
2	Standard	Breakfast	Private room	16,000	13,000	19,000
3	Standard	Breakfast and dinner	Shared room (2 persons)	15,000	12,000	18,000
4	Standard	Breakfast and dinner	Private room	18,000	15,000	21,000
5	Extended	Breakfast	Shared room (2 persons)	16,000	13,000	19,000
6	Extended	Breakfast	Private room	18,000	15,000	21,000
7	Extended	Breakfast and dinner	Shared room (2 persons)	20,000	17,000	23,000
8	Extended	Breakfast and dinner	Private room	25,000	22,000	28,000

According to this, we obtain 8 combinations in total. Since we apply double-bounded question, if respondent accepts a profile at the initial bid price, he/she would further decide to accept or reject the same profile at higher second bid price in the next question. Otherwise, if he/she rejects a profile at the initial bid price, the same profile at lower second bid price would be asked in the next question instead. As a result, each respondent has to complete 16 WTP questions because each profile is asked to accept or reject twice.

In addition, respondents are asked whether they make decision on ALs for themselves or their parents at first. Also, the questionnaires include respondents' personal characteristics questions asking about age and gender of respondents and their elderly, education, government or non-government jobs, monthly income; and 5-Likert scale questions of attitude towards ALs and preference of residential socialization are also asked.

Empirical results

Sample data of 305 respondents, which are divided according to gender and willing to choose ALs for whom. Grouping by age results in 198 Gens Y and Z respondents (age less than 42) and 107 Baby boomers and Gen X respondents (age 42 and over). Grouping by willing to choose ALs for whom results in 150 and 48 Gens Y and Z respondents choosing ALs for themselves and for their parents, respectively; and 85 and 22 Baby boomers and Gen X choosing ALs for themselves and for their parents, respectively.

Table 2 shows factor analysis is to compute how many factors can determine the attitudes toward ALs and the residential socialization preferences and investigate whether these questions are reliable and valid for estimating WTP.

Table 2 Factor loading analysis for residential socialization preference

	Factor Loading	% Total Variance	Cronbach Alpha
Are respondents interested in choosing ALs for living?		0.68	0.76
1. You are interested in choosing ALs for yourself in the future/elderly in your family.	0.82		
2. Living in ALs is suitable for elderly at the end of his/her life.	0.82		

	Factor Loading	% Total Variance	Cronbach Alpha
3. Living in ALs is a good choice for decreasing family's responsibility.	0.83		
Is ALs be a good choice for living?		0.70	0.78
4. ALs is a good choice, if elderly is unhealthy and need caregiving.	0.84		
5. ALs is a good choice, if it could provide caregiving and assistance for residents.	0.87		
6. ALs is a good choice, if there is no caregiver in family.	0.80		
Are elderly supposed to move into ALs?		0.69	0.54
7. ALs is a good place for living.	0.83		
8. Elderly is supposed to move into ALs because children should not be caregiver.	0.83		
How often do respondents interact with neighbors?		0.72	0.81
9. You often talk to your neighbors.	0.90		
10. You often make friend with many neighbors.	0.90		
11. You often enjoy doing activities outside your home.	0.75		
Is public space important for making friend?		0.77	0.71
12. There should be public space for making friend in your residence.	0.88		
13. Being able to make friend with neighbors is an important factor for moving into the residence.	0.88		
When interacting with neighbors, respondents feel that they do not lose their privacy.		0.72	0.61
14. You feel comfortable when telling your private stories to neighbors.	0.85		
15. Making friend with neighbors does not impact on your privacy.	0.85		

The overall result shows that the % total variance and Cronbach's alpha are around 0.54–0.78, along with high factor loading in each question around 0.75–0.90. The lowest Cronbach's alpha is "Are the elderly supposed to move into ALs?" This factor has a low level of reliability, or, in other words, the items leading to this factor are not highly correlated with one another underneath the same concept, or the answer to these questions are diverse. However, each item of this factor has a high factor loading (approximately 0.83), which indicates that the two items can sufficiently indicate this factor. Thus, for in-depth estimation, I run a factor analysis divided by generations because the attitudes and preferences might be different depending on lifespan and individual perspective.

Table 3 shows the WTP estimated from all generations of the respondents for based case, extended medical service, dinner added, and private room. For the overall estimation, WTP for based case, extended medical service, dinner added, and private room are around 9,893, 13,217, 11,016, and 2,424 baht/month, respectively. Although the initial bid price of the based case that I offered in the survey starts at 13,000 baht/month, the respondents prefer to pay lower than the offered price. For extended medical service, it seems to be the significantly highest WTP compared with other additional features. Thus, the respondents mostly agree with spending on extended medical services, because they might realize that it is necessary for elderly living. The dinner added feature is significant and slightly lower than the WTP for extended medical services; hence, the respondents are also concerned about daily mealtime. WTP for private room is significant but has the lowest WTP; thus, the respondents do not focus on private room feature as much as our initial thinking that it affects QOL and wellbeing. The respondents might not be concerned about staying in a private room for their living. According to the results, the features with high WTP will be highly demanded.

Table 3 WTP

	N	Based case	Extended medical service	Dinner added	Private room
Overall	**305**	9,893.92***	13,217.60***	11,016.03***	2,423.69***
Age of respondents					
Gene Y & Z	**198**	-3,240.54	17,907.82***	14,825.33 ***	10,771.70 **
Baby boomers & Gen X	**107**	18,251.94 ***	8,991.09***	7,512.42***	-3,871.03***
Choose ALs for whom					
Choosing for themselves	**235**	10,131.24 ***	13,657.52***	11,306.10 ***	2,797.96**
Choosing for their parents	**70**	9,213.65***	11,738.73***	10,010.11 ***	1,183.76

	N	Based case	Extended medical service	Dinner added	Private room
Gender					
Female	**232**	9,086.51***	13,464.71***	11,956.79 ***	2,360.70*
Male	**73**	12,640.74***	12,028.47***	7,668.47 ***	2,359.97
Marital status					
Single	**225**	3,930.51	15,694.56***	13,300.93 ***	5,592.36**
Married/couple	**80**	17,959.11***	8,956.44***	7,110.40 ***	-2,627.60***
Children					
Not having children	**224**	56.40	17,268.83***	14,510.18 ***	9,048.04**
Having children	**81**	18,752.25***	8,208.47***	6,704.30 ***	-4,540.51***
Educational level					
Lower than/equal to bachelor	**203**	7,586.48***	13,586.37***	11,632.36 ***	2,406.89
Higher than bachelor	**102**	13,534.21***	12,575.85***	9,957.73 ***	2,434.19
Job's characteristics					
Government employee	**105**	4,337.23***	14,234.89***	11,235.55 ***	-52.30
Non-government employee	**200**	7,987.07***	12,589.15***	10,778.23 ***	3,401.00**
Monthly income (baht)					
Less than 30000	**185**	9,242.33***	12,336.03***	10,386.24 ***	3,759.22**
Between 30001-50000	**62**	11,004.46***	14,610.92***	11,481.55 ***	930.67
Higher than 50001	**58**	10,924.48***	14,142.72***	12,244.71 ***	-643.47
Health status					
Having underlying disease	**69**	12,186.11***	17,844.77**	14,768.78 **	8,670.74
Not having underlying disease	**236**	9,454.75***	12,497.80***	10,423.39 ***	1,442.43
Are respondents interested in choosing ALs for living?					
Less interested	**94**	14,873.41***	13,039.98 ***	10,482.16 ***	2,706.25
Moderate interested	**99**	11,156.51 ***	11,715.32 ***	7,980.97 ***	2,807.52*
Most interested	**112**	2,355.08	14,990.34***	15,636.69***	1,035.75

Conclusion and recommendation

According to the estimated results, the younger generations do not prefer to live in ALs at least for now because the WTP for based case is significantly negative, which indicates that even when they are offered standard ALs with the lowest expenses compared with other cases, they are not willing to pay for it. However, if additional features including extended medical services, dinner added, and private room are offered, they still prefer to spend more on these features because they believe that these additional features should be included in ALs, because planning to live in ALs is still too early for them, because they are not reaching the retirement age who already have or become poorer with health from physical and mental

degeneration; thus, they do not realize that ALs are necessary for them to maintain and improve their QOL yet.

The other possibility is that choosing ALs for respondents significantly have higher WTP than for parents regarding over expenses on children. Younger workers earn monthly income starting around 15,000 baht, which is not compatible with living allowance. Due to Thai hierarchical tradition and Buddhist-based beliefs, Thai children had been taught and are expected to repay their parents who raised them up. In addition, Thai parents often require children to take care of them when reaching retirement age, and most Thais reject to bring their parents into ALs because they feel that they overlook the responsibility to take care of their parents (Choowattanapakorn, 1999; Basten et al., 2014). Thus, even children are sent to study and work downtown; their lives are not completely independent because they have parents or relatives waiting behind. Moreover, deficient social welfare for the elderly is supposed to support elderly population in aspect of health and wellbeing; thus, the easiest way to repay their parents that Thai children were taught since they were young is to send money back to their family to assist them and improve their standard of living. However, working in the city does not mean children will always earn sufficient income to support their family. Spending on choosing ALs for parents might be over expenses and over responsible for children. Thus, the results reflect that children who intentionally choose ALs for parents negatively have WTP.

Typically, the main purposes of ALs are that it provides increased opportunities in social interaction among elderly, together with providing medical service and ADL assistance (Sheehan, 1986). Social relations are often considered to be basic needs of the elderly because lacking satisfactory social interaction will lead to negative effects, such as depression, suicide, poor nutrition, decrease in immunological function, and abuse, which affect the overall health conditions (Rubinstein et al., 1994; Dehi & Mohammadi-shahboulaghi, 2020). Previous study has shown that the elderly who are socially isolated are associated with high risk of neglect and abuse. Social isolation has a negative effect on persons, especially their health and QOL. Therefore, promoting social interaction can clearly pull depressed people out of distress and keep them safe from negative feelings. However, individuals have different needs at different moment of their lives; thus, social relations will be positively supportive or negatively affect individually (Rubinstein et al., 1994). Nevertheless, in this study, the results show that private room has a significantly negative WTP in the older group, which indicates that the shared room

feature is more preferrable for the older because it can enhance supportive environments in the residence. Ingersoll-Dayton et al. (2001) interviewed Thai elderly and found that most elderly think that gathering elderly together can promote better mental health and state of mind because when they see other people smile, then they smile as well. In addition, when getting older, people lose their family and friends through death or relocation and they end up living alone. Moreover, they have less chance to go outside because of mobility difficulties. Thus, fragile elderly is related to social isolation (Gowland, 2017). Even some elderly deeply prefer to live alone because of more comfortability, but moving into ALs with a shared room might benefit the older in aspect of interdependence, such that they are monitored and supervised by surroundings if they feel unwell and something dangerous happens (Ingersoll-Dayton et al., 2001). Therefore, private room feature has importance for the older people who are the targeted group for ALs because they prefer more to stay in a shared room, which is better for their physical and mental health to do so.

ALs seem to become more of a concern in Thailand, especially for people who are close to retirement age because of changes in their attitude toward ALs and social structure that Thailand is already an aging society and becoming a completely aged society in a few years. For ALs' future consumers, they can explore themselves what features they want for ALs' living, and they can easily have an explicit purpose and plan for reserved savings to prepare themselves to move into ALs.

The results show that standard ALs are sufficient for maintaining older people's QOL, whereas extended medical services and dinner added features have to be attached to reach the youngers' minimum requirement, and private room is not necessary for the older people and is sometimes necessary for the younger people. However, the target group of ALs is not the younger but the older. Therefore, the operations in ALs should be similar to medical staff, and skilled nurses are day shifts to take care, perform physical exam, and treat residents who have health problems in daytime, whereas nurse assistants are night shifts to supervise and for emergency case during nighttime. This study also benefits hospital administrators who plan to extend their services to cover LTC, which is easy to do so for hospitals because they already have medical resources, such as physicians, medical staff, tools, innovations, and ability to refer residents who have severe health problems. Moreover, entrepreneurs who plan to establish ALs should build public space for elderly's meetings and recreational activity instead of building too many private rooms. For financial institutions, ALs are increasingly demanded;

thus, if they design savings plan with higher profits, especially for those who intend to move into ALs, they might attract consumers who are interested in ALs as well.

For the government and policy makers, this study tells us that standard ALs seem to be important for the older people. Thus, a scheme should be developed to subsidize people or ALs for those who are willing to move into ALs but not have enough money to spend on it. This solution can fix problems about abandoned elderly and homeless people who do not have a chance to access medical services.

Limitation

Due to the COVID-19 pandemic, conducting offline surveys is less accessible. Therefore, online survey is proceeded through Google Form. However, given that the questionnaires are online and take approximately 8–10 minutes to complete all questions in the survey, then meeting the respondents face-to-face and see whether they intentionally finish the tasks would have been better. Moreover, the respondents are 305 because of the limited time to collect the data. However, the estimated results from these number of respondents can represent some contributions and can be an advantage for further study.

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