



Happiness among the Disabled Elderly: A Study based on Micro Data in Udonthani Thailand

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Abstract

The objective of this study is to investigate the factors affecting the happiness of the elderly having to cope with disabilities. The panel data set consists of 246 home- and bed-bound elderly citizens drawn from the Thai Health Promotion Foundation data for the years 2015 and 2016 and a random effects model is used to analyze happiness-related equation. The results show that happiness increases with 1) household income, 2) level of health status of the respondent measured by the Barthel Index for Activities of Daily Living (ADL), and 3) satisfaction with the long-term care program or home visits implemented by the government, whereas happiness decreases with living alone. Furthermore, despite the fact that satisfaction with government care programs affects the happiness of the elderly, the frequency of home visit service variable does not significantly affect happiness at all. It can be implied that if happiness is a principle goal driving the governments' long-term care policy, the quality of care seems to be more important in terms of the happiness of the disabled elderly than the regularity of such services.

Keywords: Happiness, Disability, Ederly

JEL Classifications: J14, J18, I31

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1. Introduction

Demographic change has resulted in Thailand becoming an ageing society. The World Bank (2016) forecasted that by 2040 Thailand's ageing population (aged more than 65) is going to represent 25% of the total population. The Ministry of Public Health has assessed and investigated the health status of 6.4 million senior citizens and classified them by Activities of Daily Living (ADLs) into three groups. These include 1) active elderly 2) home-bound elderly 3) bed-bound elderly. There are five million old people in the active aging group, or about 79% of the aging population. Home- and bed-bound elderly comprise 1.3 million or 21% of the total ageing population (National Health Security Office, 2016). At present, the Thai government is focusing more on issues concerning the disabled elderly. This is evident from the development of the long-term care system that was initiated officially in 2016 with a budget of 600 million Baht. This is a holistic health care system involving home visits and the provision of caregivers helping support general social well-being.

A person categorized as 'disabled elderly' refers to someone with a health problem who faces difficulties in independent daily living. It also entails someone requiring a variety of assistance depending on their level of physical limitation, including requiring help with personal hygiene, dressing, eating and/or mobility. It can be said that without proper consideration, the elderly may become vulnerable in many ways, including issues arising out of a lack of caregivers because of the decrease of potential support ratio. In addition, issues concerning the financial fragility of the elderly must be addressed, as seen in the report of the 2007 Survey of Elderly in Thailand by the National Statistical Office. This shows that 24 percent of all elderly citizens have no savings of either money or other assets. They tend to have to rely mostly on the financial support of their family. All in all, in addition to changes in their health status and emotional maturity, the elderly also face issues connected with a decline in their social and economic status and role. This directly and inevitably affects the level of happiness of dependent elderly people. As a result of differences concerning physical limitations when conducting activities, elderly citizens in the well category and those in home-bound or bed-bound categories might have different needs and perspectives on happiness. Therefore, focusing specifically on the happiness of the disabled elderly may help the government or other relevant agencies to formulate policies or programs that better meet their needs.

Studies of the factors affecting happiness in Thailand using panel data have been limited, and most such studies have been cross-sectional (Gray, Kramanon, & Thapsuwan, 2008; Gray, Rukumnuaykit, & Kittisuksathit, 2006; Rukumnuaykit and Pholphirul, 2007). In addition, past studies concerning the determinants of happiness among old people often focused on undifferentiated happiness. It can be said that when referring to physical needs, each group has a different perception of their particular needs and may have different ideas concerning happiness. Therefore, the objective of this study is to investigate the factors affecting the happiness of elderly citizens who have disabilities using secondary panel data derived from the Thai Health Promotion Foundation. The results of this study may be used by government or related agencies to set policies or programs designed to meet the needs of the disabled elderly by using happiness as a principle goal for driving such initiatives.

2. Data

In determining the factors affecting the happiness of the elderly with disabilities we use secondary balanced panel data for the years 2015 and 2016 sourced from the project “An effectiveness analysis of the long-term care plans in Udon Thani province” conducted by the Thailand Development Research Institute (TDRI) and supported by the Thai Health Promotion Foundation. Respondents consisted of 246 disabled older people sampled from 35 sub-districts of ten districts in Udon Thani province. The population in this study comprised citizens aged 60 years and over who had some difficulty in daily living as measured using the Barthel ADL index, an ordinal scale used to measure performance in the typical activities of daily living. Elderly respondents with ADL scores of 0-11 who were able to discuss by themselves how happy they are, were selected as the sample. The dependent variable of the study is the level of happiness. The single question: "How happy are you at present?" was employed with a score of 0 denoting no happiness at all, and 10 signifying the happiest response on the scale. The independent variables were divided into five categories: economic, health, family, community interaction, government role, and social welfare.

3. Literature review

Studies investigating the happiness of the elderly have been widely conducted in the fields of medicine, psychology, social sciences, and economics. Identifying the causes of happiness differs across scientific disciplines. For example, the medical field posits that happiness is caused by a chemical in the brain called endorphin or that happiness is genetically pre-determined. Research into The Economics of Happiness attempts to apply economic theory to the issue by comparing happiness to a product and analyzing its utility functions. From this theory, it has been concluded that as income rises, so does happiness. However, as Easterlin (2001) found, looking at country level analyses, the happiness of people in a country does not increase as the country's income increases. This is consistent with the study of Oswald (1997) who found that happiness is associated only with a small increase in national income compared to other factors. As a consequence, a government might weigh economic growth indicators, such as GDP, as less powerful and focus more on other happiness indicators. Bhongmakapat (2011) said that many economists interested in happiness often discover that when income levels are quite high, economic factors do not influence happiness that much. With regard to studies of happiness classified by age group, happiness among the elderly by age group may differ in terms of both quantity and cause. This finding conforms with Gwozdz & Sousa-Poza (2010) who found that satisfaction with life is U - shaped between 16-65, but afterward the level of satisfaction diminishes rapidly, especially among senior citizens over 80 who are the least happy.

Chaiyo (2012) conducted a case study of the elderly in the Pensioners Centre in Chinghai Thailand and found that the happiness of these elderly folk could be summarized as stemming from such factors as good health, a beautiful mind, general well-being, providing help to someone else, satisfaction with life and practicing religious activities. Gray, Rukumnuaykit, & Kittisuksathit (2006) studied the elderly in Chainat Province, The sample of 986 individuals was made up of 55 to 80-year-olds. Multiple regression analysis was used as the method of analysis. The independent variables included age of respondent, sex, their amount of debt, family ties, health status, the nature of the social environment in

which the respondents lives, amount and kind of assets, and the degree of economic self-sufficiency. The study found that the variables of age and sex are not statistically significant in explaining happiness. As expected the factors most affecting the happiness of the elderly comprised income, family relationships, health status, the social environment and economic self-sufficiency, the latter of which is statistically the most influential variable affecting happiness.

Kramanon & Gray (2015) analyzed the data of 4,036 elderly citizens in Kanchanaburi by dividing the sample into three groups: early elderly (60-64 years), middle-aged (65-74 years) and late elderly (over 75 years old). For the late elderly group, the significant factors contributing to happiness involved helping their family raise children or grandchildren and participation in religious activities. Furthermore, the significant factors found affecting happiness across the three groups were assurance that a member of the family would take care of the individual and the individual's health condition. This finding conforms to Gwozdz & Sousa-Poza (2010) who studied elderly citizens aged over 75 in Germany and found that the factor most affecting the elderly's satisfaction with life was the health condition of the respondent. It can be concluded that the main variables affecting happiness are health status, individual income, income in comparison to others, employment status, the degree of harmony within the family, community and friends, and government social welfare programs; in addition to other factors depending on the context of each country or society.

4. Method

Greene (2002) explained that the advantage of a panel data set over a cross-sectional is that it provides more flexibility in modeling differences in behavior across individuals. In balanced panel data, each unit is observed in every period, therefore it is able to generate measurements of micro-level dynamics. A linear regression model with a compound disturbance may be consistently, albeit inefficiently, estimated by least squares. The random effects approach specifies that the individual-level effect (μ_i) is a group-specific random element, similar to the disturbance term (ε_{it}) except that for each group, there is but a single draw that enters the regression identically in each period. The distinction between fixed and random effects concerns whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not. To test whether the equation should be a fixed effect regression or a random regression model can be tested by the Hausman Test. In this study, the model used to analyze the factors affecting the happiness of dependent elderly people can be summarized as follows.

$$hap_{it} = \alpha + \beta_1 inc_{it} + \beta_2 adl_{it} + \beta_3 alone_{it} + \beta_4 social_{it} + \beta_5 sas_{it} + \beta_6 visit_{it} + u_{it}$$

The dependent variable is the subjective happiness scale (*hap*). The independent variables include; 1) average annual household income (Baht/year) (*inc*); 2) the ADL index (*adl*); 3) living alone (*alone*); as a dummy variable with the value of 1 indicating living alone and 0 indicating not living alone; 4) social participation in social activities (*social*) such as going to a religious place of worship, a club for the elderly, participation with the community in the Songkran (Thai New Year's Day) festival or in fathers or mothers day

activities in which the value 1 indicates participation at least once a year and 0 indicates no participation in any social activities. The next two variables are related to Thailand's national policies on ageing, which include long-term care services and home health care or home visits. In order to assess the quality of these services, the elderly citizens in our sample were asked to rate satisfaction (*sas*) with the services usually provided from health promoting hospitals, community hospitals, village health volunteers and official government paid caregivers. Scores ranged between 1 and 10, with 1 denoting least satisfied and 10 the most. In addition to evaluating the quality of such services, we focused on the regularity of care services (*visit*) by asking the question "Did any nurse or village health volunteer visit your home last week". A value of 1 indicates visited, and 0 not visited in the last week.

5. The Disabled Elderly in Udon Thani

Table 1 presents the characteristics of the disabled elderly population in 2016 and 2017. In both years it was found that the majority of disabled elderly people were between the age of 80 and 89 years and the average family size of respondents was approximately four to six people. Furthermore, 50% of the households earned less than 100,000 baht per year and for some households, the government's elderly subsistence allowance (600-1,000 Baht/month) was their only means of income to cover living expenses. Considering the ADL health assessment variable, in 2016 75 percent of the elderly respondents were home-bound, whereas 25% were bed-bound. In 2017 the number of bed-bound elders remained consistent, whereas 31% of the elders changed from being home-bound to being well. With regard to family, community interaction and government welfare, it was found that most of the elderly lived with their families, whereas 3% lived alone. It might be concluded that home- and bed-bound elderly citizens have limited mobility. Thus, nearly 90% of the respondents said they did not participate in any community activities.

The elderly health care services provided by the government include initial health screening, counseling, home visits by health teams from district health promotion hospitals, community hospitals or by village health volunteers. In 2016 the Government of Thailand launched and funded an active national long-term care scheme. A budget of 600 million baht was distributed mainly for home visits of health staff and caregiver services, and to provide medicine and equipment to the elderly, such as walkers, wheelchairs, shower commode chairs, and air mattresses. The scheme has benefited approximately 100,000 disabled elderly citizens so far across certain designated areas. It is expected that the budget will be increased in order to cover the entire target group within three years. The 2016 survey data shows that 62% of the sample respondents had experienced a home visit in the preceding week and the percentage increased to 66% in the following year. The results may reflect the expansion of areas covered by the long-term care service in 2017. With regard to satisfaction with their long-term care or home health care services, 34% of respondents gave the services the highest score (score 10) indicating that they were very satisfied. A year later in 2017 satisfaction with the services increased to 43%.

Average subjective happiness was broken down by demographic characteristics. The overall average happiness of the disabled elderly in 2016 and 2017 was 6.30 and 7.02, respectively. The happiness mean differed, apparently by household income. If household income was less than 10,000 baht per year, the average happiness score for this group was about five. However, if household income was greater than 200,000 baht per year, the

average happiness score is between six and seven. Elderly social welfare can be divided into two categories: the first concerns the quality of services measured by the level of satisfaction of the elderly respondents, the second refers to the consistency of services. From the data, it was found that the more satisfied the elderly are with the long-term care or home visit services, the happier they are. However, the average happiness score is not affected by whether there was a home visit in the last week, or not.

Table 1: Distribution of independent variables and average happiness score by demographic characteristics

	2016				2017			
	%	Mean	S.D.	N	%	Mean	S.D.	N
Demographic variables								
Age								
60-69	23%	6.45	2.18	56	22%	7.53	1.80	51
70-79	30%	6.27	2.54	73	28%	6.64	2.10	73
80-89	39%	6.42	2.72	96	40%	6.96	2.20	99
More than 90	9%	5.48	2.52	21	10%	7.39	2.43	23
Sex								
Male	30%	6.14	2.33	73	30%	7.00	1.86	73
Female	70%	6.37	2.62	173	70%	7.03	2.24	173
Family Size								
1-3 persons	39%	6.00	2.62	96	34%	6.78	2.03	86
4-6 persons	51%	6.41	2.56	125	55%	7.08	2.17	136
More than 7 persons	10%	6.92	1.96	25	11%	7.71	2.14	24
Average household income								
below 10,000	1%	4.67	1.53	3	1%	5.25	1.50	4
10,001-50,000	29%	6.31	2.28	70	20%	6.40	2.09	55
50,001-100,000	28%	6.26	2.68	70	28%	7.10	2.29	67
100,001-150,000	18%	6.40	2.75	43	22%	6.82	1.92	55
150,001-200,000	4%	6.33	3.12	9	10%	7.68	1.64	22
More than 200,001	21%	6.35	2.50	51	19%	7.79	2.16	43
Health condition								
ADL 0-4 (Bedbound)	25%	6.41	2.59	61	24%	6.61	2.08	64
ADL 5-11 (Homebound)	75%	6.26	2.51	185	45%	6.95	2.27	111
ADL more than 12 (only in 2017)					31%	7.51	1.87	71
Family								
Living alone	3%	5.10	3.11	10	3%	5.70	1.95	10
Not living alone	97%	6.35	2.50	236	97%	7.08	2.12	236
Social interaction								
Participate at least once a year	11%	6.38	2.58	26	13%	7.52	1.96	31
Never participate	89%	6.29	2.54	220	87%	6.95	2.15	215
Government social welfare								
Satisfaction with long-term care or home visit services score								
below 6	23%	5.11	2.28	70	14%	5.58	1.94	43
7	13%	6.29	1.57	31	10%	6.38	1.50	26
8	18%	5.88	2.71	48	19%	7.22	1.58	45
9	12%	6.70	2.54	27	14%	7.06	2.18	35
10	34%	7.63	2.39	70	43%	7.73	2.22	97
Home visits								
Got a home visit last week	62%	6.16	2.61	156	66%	6.95	1.98	164
Didn't get a home visit last week	38%	6.54	2.39	90	34%	7.17	2.41	82

Source: Calculated from the data of “An effectiveness analysis of the long-term care plans in Udonthani province” by Thailand Development Research Institute (TDRI) supported by the Thai Health Promotion Foundation.

6. Results of The Fixed and Random Effects Regression Model

To test whether the model should be a fixed effects or random effects model, the Hausman Test will be used. The results show the p-value is 0.3724 which means the random effects regression is more efficient because of the lower variance included. Therefore, the model used for the analysis is the Random Effects Regression Model (REM). The F-statistic indicates that the coefficients in the model differ from 0 meaning that the independent variables can describe the dependent variables. Table 2 shows that the factors explaining happiness at a significant level of confidence (95%) are household income, health status, solitary life and satisfaction with government long-term care or home visit services.

Average household income is related to the happiness level in the same direction, which means an increase in household income increases the elderly respondent's happiness. However, the amount of increase is very small. With regard to health status, the more the disabled elderly citizens (home and bed-bound) are able to participate in the activities common in daily living, the happier they are. The coefficient shown indicates that for every one unit increase in the ADL scale, happiness is expected to increase exponentially by 0.05 units. In addition, the elderly living alone are less likely to be happy than those living with family. The happiness experienced by the elderly is also positively affected by their satisfaction with government social welfare programs providing long-term care or home visits. Every one unit increase in the level of satisfaction increases happiness by 0.43 units. It can be said that the issue of regularity in-home visits from the public health team did not affect the well-being of the elderly respondents, while the quality of each service is probably more related to their happiness rather than the frequency of service. In terms of social interactions in the community, it was found that participation in community activities does not affect happiness. This may be because home- and bed-bound elderly people have only limited mobility and so are unable to participate in any community activities.

Table 2: Fixed Effect Regression (FEM) and Random Effects Regression Model of Happiness

	Fixed effect	Random effect
Constant	3.376 [5.53]*	2.516 [6.07]*
Average household income	0.000002 [1.67]	0.000002 [3.38]*
ADL	0.119 [0.25]	0.051 [2.13]*
Living alone	-0.651 [-0.62]	-1.27 [-2.54]*
Participate in social activities	0.995 [1.78]	0.53 [1.27]
Satisfaction with long-term care or home visit service	0.361 [5.34]*	0.4348 [9.32]*
Had a home visit last week	-0.0532 [-0.17]	0.014 [0.07]
Prob (F-statistic)	0.000	0.000
Hausman test (P-value)		5.37 0.3724

Note: *p-value ≤ 0.05 Number in [] of Fixed effect refers to t statistic, Random effect refers to Z statistic
Source: Author's calculations.

7. Conclusions and Policy Recommendations

There are not many empirical studies using panel data to investigate subjective happiness focusing on the bed-and home-bound elderly in Thailand. Also, some previous studies aimed to analyze determinates affecting happiness by focusing on the elderly in general to get an overall idea of happiness. However, the active and disabled elderly may have different perceptions of their particular needs and may have different ideas concerning happiness. This study, therefore, aims to fill this research gap by using balanced panel data from the Thai Health Promotion Foundation covering the years 2015 and 2016 to investigate the factors affecting the happiness of elderly citizens with disabilities, namely the home- and bed-bound elderly. Derived from a random effects model, the results reveal that happiness is positively associated with both household income and level of health status measured by the index of ADL, as well as the level of satisfaction with long-term care programs or home visits, while the frequency of such services does not significantly affect happiness. Furthermore, the evidence indicated that living alone leads to lower levels of happiness among the elderly than living with their families.

It is recommended that government or related agencies when formulating and implementing policies or programs to meet the needs of the disabled elderly use happiness as a principle goal driving such initiatives. These findings suggest that the Thai government has to focus more attention on helping elderly citizens living alone to have sufficient access to cares since the volume of single individual households, especially among the elderly, is increasing in Thailand. It can be said that at the present Thailand government through the National Health Security Office, Ministry of Public Health Department and local communities are trying to implement a long-term care scheme supporting disabled elderly citizens is on the right track. It should be emphasized that the government needs to focus more on the quality of care services than setting specific regulations about the frequency of home visits by the medical staff of other health care providers, because each individual elderly citizen has different needs according to their financial status, quality of caregiver and health conditions.

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