

## Issues related to elderly parents' life satisfaction

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**Abstract:** There are a number of issues that can influence elderly life satisfaction, which can mirror their welfare. This study aims to explore the differences in elderly parents' life satisfaction across socioeconomic characteristics and investigates how the traits of both children and parents associate with elderly parents' life satisfaction in Thailand. This study uses individual data obtained from Thailand's National Statistical Organization covering 2008–2015, 2018 and 2020, with a total sample size of 28,494. To investigate the association between children's and parents' characteristics, particularly formal education and parental life satisfaction, this study uses ordered logistic regression for the analysis. Our results show that male parents are more likely to have higher life satisfaction than their female counterparts. Parents who are employed, holding a bachelor's degree, and living with female children are more satisfied with their life. Statistically, children's formal education demonstrates its importance for their elderly parents' life satisfaction. This documents the vital role of schooling in improving parental life satisfaction. Moreover, facing the challenge of entering an aging society, government agencies must take a proactive stance on creating jobs suitable for the elderly or retirees to maintain their sense of independence. The evidence of intergenerational mobility reaffirms the importance of children's education along with their caring ability, which should be strengthened.

**Keywords:** children's education; parents; well-being; life satisfaction; aging society; intergenerational mobility

## 1. Introduction

Thailand, like many other countries, is facing the challenges associated with an aging population. The birth rate of Thai people continues to decrease, with the number of births hovering around 600,000 people per year. As a result, Thailand is moving toward a hyper-aged society by 2025, with 20% of the population over 65 years of age or over 30% of the population over 60 years of age. It is expected that this shift will take place at a faster rate than Japan's (Vijj, 2021). Unlike Thailand, Japan is a developed country with high GDP per capita, making it five times richer than Thailand despite having a similar proportion of elderly citizens. Given the rapid advance of aging society in Thailand, it is evident that senior citizens, an increasingly larger group of population, should be protected as they would be more likely to be less satisfied with life possibly due to the deterioration in their health. This challenge could also turn into a big obstacle to Thailand's future development.

Thailand should prioritize planning for the management of an aging society. The Thai government is prepared for this, having long created necessary conditions for the well-regulated implementation of welfare programs with increased spending on health care and pensions to improve the well-being of the elderly and prepare for an advanced aging population structure. In addition to those public policies, micro-level conditions

can play a key role as a tool to enhance the well-being of the elderly. To help the government address the vulnerabilities of older age, the solid foundations of close kin and the elderly population themselves are a good starting point. The good administration of welfare policy, together with the strength of the family system and individuals, can help improve the eroding life satisfaction of the elderly.

Life satisfaction, particularly among the elderly population, is a complicated issue. Theoretically, it is the assessment of life as a whole, not just a current level of happiness. Life satisfaction is not only more stable and long-lived than happiness, but also broader in scope in its assessment of life. Ackerman (2018) identified four factors contributing to life satisfaction: life chances, course of events, flow of experience, and evaluation of life. Life satisfaction is a subjective measure of human well-being, which depends on various economic, social, and demographic factors namely age, gender, education, and marital status (Campbell et al., 1976; Diener et al., 1999; Liu and Cheng, 2022). Regarding gender, studies have shown a relationship between gender and life satisfaction (Demerouti et al., 2005; Qian and Knoester, 2015; Vu and Phung, 2021). However, the direction of that relationship is inconclusive. Employment status having a job was found to positively impact an individual's life satisfaction (Dennison and Lee, 2021; Liu and Cheng, 2022; Yahirun et al., 2020).

Education is one factor with a proven role in improving life satisfaction. Higher education increases the chances that people can achieve their goals in life and build their confidence through acceptance in society, leading them to greater satisfaction in life. Numerous studies highlight the explanatory power of education on individuals' welfare, such as De Neve and Fink (2018), Dennison and Lee (2021), Liu and Cheng (2022), Torssander (2013), Thoma et al. (2021), Vu and Phung (2021) and Yahirun et al. (2020). These studies demonstrate the positive effect of education on the satisfaction and quality of life, revealing the significance of both an individual's education as well as that of their children.

As referenced, the current structure of the aging population in Thailand is likely to lead to welfare issues for the elderly. The matter of elderly life satisfaction, therefore, is among the government's core policies to improve the welfare of a growing group of population. The Thai government has implemented various policies and initiatives, including healthcare reforms and social welfare programs, to promote active aging and an elderly-friendly environment. For the government to formulate policies correctly addressing the aging population, the study of life satisfaction in the elderly is essential. However, the study of this topic in Thailand is limited. This study aims to explore the factors influencing the life satisfaction of elderly parents in Thailand, investigating the factors of gender, age, and employment status in both the elderly population and their children. To best benefit public policy, this study will focus on education as a determinant of elderly life satisfaction, capturing the link between life satisfaction and the family foundation or intergenerational effects in the family.

The research question addressed in this study is whether these above factors, particularly education, affect how the elderly are satisfied with their life. Hypothetically, educational success, economic achievement, and certain household conditions are beneficial to the elderly population. The test of the differences in elderly life satisfaction across socioeconomic characteristics and ordered logistic analysis is employed to examine the life satisfaction of elderly parents. The overall findings

demonstrate the importance of education, gender, and employment status for the improvement of life satisfaction in the elderly population. These findings can contribute to both the field of welfare economics and economic development. They can provide an insight on the source of elderly well-being, which could be useful for the government to implement suitable policy measures in the wake of both an aging society and economic recession.

The rest of the paper is organized as follows: Section two provides data discussion, section three explains the materials and methods used as analytical tools, and section four presents the study's findings and their intuitions. The last two sections discuss the results and policy implications and recommendations, respectively.

## 2. Data discussion

To address how elderly parent satisfaction in life is determined, the relevant set of data is retrieved from Thailand's National Statistical Office (NSO). Based on the NSO questionnaire, respondents in a household are asked about their relationship only with a household head; consequently, relationships among other family members cannot be identified. In our study, therefore, either a parent or a child must be a household head and live in the same household. To avoid including children not yet highly educated due to their young age, we limit children's ages to 25 years and above. At these ages, people generally have earned at least a bachelor's degree. Additionally, samples are taken when they meet the following conditions:

- 1) For a household with more than one child, the sample includes only children with the highest level of education.
- 2) In the case that several children hold the same education level, the oldest child of the household is included.
- 3) If more than one parent lives in the same household, the oldest parent is selected.

The pooled cross-sectional data cover 9 years: 2008 to 2015, 2018, and 2020. According to our aforementioned conditions, the samples consist of a parent-child pair living in the same household, which includes a total of 28,494 samples.

Respondents were voluntarily asked to complete the questionnaires on a random basis. The life satisfaction of parents was drawn from the mental health questionnaire of Thai people on the issue: "What level do you feel satisfied with life?". Because of the subjective nature of well-being, as mentioned above, people's life satisfaction was self-assessed, and it is categorized into four levels: Not at all satisfied, slightly satisfied, moderately satisfied, and very satisfied.

Before estimating the life satisfaction of parents, descriptive statistics of samples are presented as reported in **Table 1**. The proportion of female parents is slightly higher than that of male parents, which is also true for the gender breakdown of the children. The largest fraction of parents and children hold a somewhat low level of education, i.e., lower than high school, accounting for 85.13% and 49.49%, respectively. Older generations are nearly twice as likely as their younger counterparts to have less than a high school education, but they are more likely to have a postgraduate degree in comparison to their younger counterparts. The average age of parents is 66.01, while the average age of children is 37.69 years. This average age reflects that children are likely to be classified as Generation Y, while parents are baby

boomers. Although the average age of parents is around 66 years above the retirement age of 60 years in Thailand—44.74% of parents are still employed. This employment rate indicates that almost half of parent samples would still be financially self-dependent. On the other hand, only 76.78% of children respondents are employed, highlighting the concern of the burden of caring for elderly parents. As for how parent respondents evaluate their life satisfaction, over 70% of them indicated that they enjoy a fair level of life satisfaction. About 14% of them are either slightly or very satisfied with their lives. It is worth mentioning that parents do not seem to be very happy, as the average life satisfaction score is only 1.98.

**Table 1.** Samples characteristics (Total: 28,494 respondents).

| Socioeconomic characteristics                                    | Parents        | Children       |
|--|----------------|----------------|
| Gender   |                |                |
| Male   | 13,260 [46.54] | 12,555 [44.06] |
| Female   | 15,234 [53.46] | 15,939 [55.94] |
| Highest education  |                |                |
| Less than high school  | 24,257 [85.13] | 14,100 [49.49] |
| High school diploma or equivalent (including vocational diploma) | 1323 [4.64]    | 7720 [27.09]   |
| Bachelor’s degree  | 826 [2.91]     | 5542 [19.45]   |
| Higher than a bachelor’s degree                                  | 2085 [7.32]    | 1132 [3.97]    |
| Being employed   | 12,749 [44.74] | 21,877 [76.78] |
| Average age  | 66.01 [10.76]  | 37.69 [9.06]   |
| Life satisfaction  |                |                |
| Not satisfied at all   | 255 [0.89]     |                |
| Slightly satisfied   | 4049 [14.21]   |                |
| Moderately satisfied   | 20,195 [70.88] |                |
| Very satisfied   | 3995 [14.02]   |                |

Note: The numbers reported in **Table 1** are frequencies or means. Percentages are in brackets, while standard deviations are in parentheses.

To better understand the educational profiles between generations in the same household, the cross-tabulations between the educational level of parents and children are presented in **Table 2**. According to our data, around 52% of parents holding lower than a high school diploma live with children who also hold lower than a high school diploma. When parents do not receive a college degree, only a small proportion—less than 20%—of their children hold a college degree or higher. On the contrary, almost 60% of parents obtaining a bachelor’s degree raise children with a college degree and 20% of children obtain higher than a bachelor’s degree. Simply speaking, **Table 2** indicates the low intergenerational mobility in Thailand—i.e., children tend to have similar educational levels as their parents.

**Table 2.** The number of samples classified by parents-children education level.

| Education levels                    |                                     | Frequency | Percentage |
|-------------------------------------|-------------------------------------|-----------|------------|
| Parents                             | Children                            |           |            |
| Lower than a high school diploma    | Lower than a high school diploma    | 12,625    | 52.047     |
|                                     | A high school diploma or equivalent | 6795      | 28.013     |
|                                     | Bachelor's degree                   | 4216      | 17.381     |
|                                     | Higher than bachelor's degree       | 621       | 2.560      |
|                                     | No. of Observations                 | 24,257    | 100.000    |
| A high school diploma or equivalent | Lower than a high school diploma    | 120       | 9.070      |
|                                     | A high school diploma or equivalent | 441       | 33.333     |
|                                     | Bachelor's degree                   | 635       | 47.997     |
|                                     | Higher than bachelor's degree       | 127       | 9.599      |
|                                     | No. of Observations                 | 1323      | 100.000    |
| Bachelor's degree                   | Lower than a high school diploma    | 18        | 2.171      |
|                                     | A high school diploma or equivalent | 158       | 19.059     |
|                                     | Bachelor's degree                   | 482       | 58.142     |
|                                     | Higher than bachelor's degree       | 171       | 20.627     |
|                                     | No. of Observations                 | 829       | 100.000    |
| Higher than bachelor's degree       | Lower than a high school diploma    | 1337      | 64.125     |
|                                     | A high school diploma or equivalent | 326       | 15.635     |
|                                     | Bachelor's degree                   | 209       | 10.024     |
|                                     | Higher than bachelor's degree       | 213       | 10.216     |
|                                     | No. of Observations                 | 2085      | 100.000    |

Note: The percentage is calculated based on the number of observations of each parental education.

### 3. Materials and methods

To explain how parents feel about their life, test variance and mean difference of self-reported life satisfaction and ordered logistic estimation are proposed. This section provides the detail of methods employed in our analysis with the descriptions of all variables as well as hypothesis testing.

#### 3.1. Hypothesis testing: Does parental life satisfaction depend on personal characteristics?

**Gender:** Does female help boost life satisfaction?

Being female parents has a negative impact on life satisfaction compared to male parents, (Demerouti et al., 2005). On the other hand, living with female children has a positive effect on parental life satisfaction (Chen and Short, 2008; Qian and Knoester, 2015; Vu and Phung, 2021). This issue is complicated in Asian countries that hold the traditional belief of highly valuing sons, as in Thailand (Guo et al., 2013; Nauck, 2014). This makes this issue open for further investigation.

**Age:** Does older age discourage parental satisfaction in life?

The factor of age could bring about mixed results regarding parents' life satisfaction, depending on their own and their children's situation. According to Ingersoll-Dayton et al. (2011) and Letiecq et al. (2008), children's dependence on

parental financial support or their responsibility for parents' retirement plan, as reflected by their age, can cause inconclusive results. Meanwhile, Guo et al. (2013) found no evidence of the effect of age, in children or their parents, on elderly parents' life satisfaction. However, to address the importance of age, this study assigns the hypothesis that the older the parents are, the less they are satisfied with their life. This should be hypothesized opposite to living with older children since there is comparatively more stability in life than residing with younger children.

**Employment status:** Does having a job influence parental life satisfaction?

It seems logical to believe that having a job can help individuals feel more financially independent. It also creates pride and dignity in oneself, as well as stability in life. Moreover, a child's employment helps ensure the prospect of care for parents, which can help to secure the ability of intergenerational income flow. Thus, parents/children with a job have a positive effect on life satisfaction compared to those who are not employed (Dennison and Lee, 2021; Liu and Cheng, 2022; Yahirun et al., 2020).

**Education:** Does higher education have a beneficial effect on parental life satisfaction?

Educational level is, somewhat, undertaken as a proxy for the success of individuals. The higher the education of children, the more satisfaction in life of their older parents—Improved by financial support from children through intergenerational income flows (Xu and Yi, 2015). It can be expected that this will also be demonstrated in the case of parents' own educational level in the form of financial self-dependency. Therefore, parents and children with higher levels of education can be predicted to have a positive effect on parental satisfaction in life. This assumption is also supported by the work of Dennison and Lee (2021), Liu and Cheng (2022), Thoma et al. (2021) and Vu and Phung (2021), for example.

### **3.2. Statistical and empirical analysis**

To explore the importance of key characteristics to the life satisfaction of parent samples in Thailand, this study applies statistical tests for hypothesis of variance and mean equivalence among sample groups regarding the selected characteristics of parents and children. The analysis of variance (ANOVA) tests are then estimated to capture such differences. Simple  $F$  statistic is applied for testing the hypothesis of variance. Furthermore, the mean comparison between two groups of samples will be analyzed using a  $t$  test while the  $F$  statistic is used to test the cases of more than two groups. It must be noted that the establishment of scalar measurement invariance is necessary to appropriately set variance assumptions before testing hypotheses of indifferent mean.

To deal with the information on how parents are satisfied with their life, the likelihood of key characteristics of both parents and children are addressed. According to the NSO, the estimations are consequently analyzed at individual data to reflect the population. The dependent variable,  $Y_i$ , indicating the life satisfaction of parents  $i$ , which is rated in four levels: not satisfied at all (set to zero), slightly satisfied (set to one), moderately satisfied (set to two), and very satisfied (set to three). Considering the form of the dependent variable, which is characterized by a four-scale opinion,

ordered logistics analysis is thus applied to estimate the coefficient and marginal effect, as shown in Equation (1) as follows.

$$Y_i = \alpha + \beta(X'_i) + \gamma(Z'_i) + \eta_t + \sigma_r + \epsilon_i \quad (1)$$

where:

$X'_i$  is a set of variables representing children’s characteristics, which include gender, education, age, and employment status.

$Z'_i$  is a set of variables representing parental characteristics, which include gender, education, age, and employment status.

$\eta_t$  is a set of dummy variables for each year in which sample  $i$ 's data are collected, or static variables that vary with time or change according to the season.

$\sigma_r$  is a set of dummy variables, indicating the region where sample  $i$  is residing at the time of data collection.

$\beta$  and  $\gamma$  are the coefficients of the variables considered, while  $\alpha$  is a constant term.

$\epsilon_i$  represents the error value of the model.

Additionally, the samples are separated into three sub-groups according to the educational level of parents and children, as highlighted in **Table 2**. This aims to test the hypothesis that parents may have different life satisfaction levels if children have an education that is lower, equal to, or higher than parents’ own education level. This approach would also allow us to empirically examine intergenerational mobility through the differences in education between parents and children. Details of the variables are shown in **Table 3**.

**Table 3.** The descriptions of variables.

| Variables  | Descriptions  |
|--|---|
| Dependent variable ( $Y_i$ )   |   |
| Parental life satisfaction   | Respondents’ assessment of their level of life satisfaction. It is set to zero if respondents feel no satisfaction in their life at all, and one to three if they feel slightly, moderately, and highly satisfied, respectively.  |
| Independent variables: Parents’ ( $X'_i$ ) and children’s characteristics ( $Z'_i$ ) |   |
| Female   | It is a dummy variable, equal to one if a parent/child is female; otherwise, equal to zero.   |
| Age  | A parent’s/child’s age in years.  |
| Employment status  | It is a dummy variable, equal to one if a parent/child is employed; otherwise equals to zero.   |
| Education level  | This variable is classified into four levels of education, from the lowest to the highest as follows:<br>Equals 1 if a parent/child holds lower than a high school diploma;<br>Equals 2 if a parent/child holds a high school diploma or equivalent degree;<br>Equals 3 if a parent/child holds a bachelor’s degree;<br>Equals 4 if a parent/child holds higher than a bachelor’s degree. |

## 4. Results

The results of our analysis are separately presented according to the methodology applied to address the research questions. The first part illustrates the statistical findings on the mean differences in parental satisfaction in life between the selected characteristics of parents and children. The extent to which these characteristics have explanatory power on increasing parental life satisfaction and the empirical findings are further reported.

#### 4.1. Differences in parental life satisfaction

Table 4 provides the test results of mean differences in parental life satisfaction categorized by the characteristics of both parents and children. To achieve this, we first test for variance differences across groups. According to our results, variances are significantly unequal; therefore, we do mean comparisons based on this condition.

**Table 4.** Mean and variance differences in parental life satisfaction levels by parents’ and children’s characteristics.

| Hypothesis testing         | Parental life satisfaction score |           |              | Hypothesis testing for equivalence      |  |
|----------------------------|----------------------------------|-----------|--------------|---|--|
|                            | Mean                             | Std. Dev. | Observations | Mean difference ( $\mu_0 - \mu_1 = 0$ ) | Std. Dev. Difference ( $\frac{\sigma_0}{\sigma_1} = 1$ ) |
| Parental characteristics   |                                  |           |              |   |  |
| Gender                     |                                  |           |              |   |  |
| Group 0: Male              | 2.014                            | 0.549     | 13,260       | 9.3670***                               | 78.361***  |
| Group 1: Female            | 1.951                            | 0.575     | 15,234       |   |  |
| Employment status          |                                  |           |              |   |  |
| Group 0: Being unemployed  | 1.967                            | 0.593     | 15,745       | -4.334***                               | 226.311***   |
| Group 1: Being employed    | 1.996                            | 0.525     | 12,749       |   |  |
| Children’s characteristics |                                  |           |              |   |  |
| Gender                     |                                  |           |              |   |  |
| Group 0: Male              | 1.966                            | 0.564     | 12,555       | -3.716***                               | 12.510***  |
| Group 1: Female            | 1.991                            | 0.563     | 15,939       |   |  |
| Employment status          |                                  |           |              |   |  |
| Group 0: Being unemployed  | 1.964                            | 0.623     | 6617         | -2.409**                                | 178.821***   |
| Group 1: Being employed    | 1.985                            | 0.544     | 21,877       |   |  |

Note: Std. Dev. stands for standard deviations. \*\*\* is the significance level at 0.01; \*\* is the significance level at 0.05; and \* is the significance level at 0.10. *t* test and *F* test values are reported for mean and standard deviation comparisons, respectively.

From these results, when considering the gender of their children, it can be interpreted that parents living with a female child seem happier than those living with a male child. This is shown by the significantly higher average life satisfaction scores of the former than that of the latter, 1.99 and 1.97, respectively. This could happen because, in Asian ways of life, girls can naturally provide parents with better caretaking. In terms of children’s employment status, children who regularly work bring more life satisfaction (1.99) to parents than those unemployed (1.96).

The results also show the higher average life satisfaction score of male parents (2.01) compared with their female counterparts (1.95). This result indicates that male parents tend to be more satisfied with life than female parents who usually carry the burden of household chores and other household management. Moreover, parents with a job have a higher average life satisfaction score than those who are unemployed. This may be explained by the fact that employment enables people to be more financially independent, maintaining their self-esteem. Respondents with employed status, regardless of household role, show self-reported life satisfaction that clusters around the radius of the mean. Moreover, they also show a significantly higher mean



of life satisfaction compared to the unemployed group. This would reinforce the relationship between having a job and the quality of life of elderly parents.

The differences in parental life satisfaction categorized by the educational attainment of their children and themselves are presented in **Table 5**. Similar to the previous mean comparison tests, we also test for variance differences and the results show that they are significantly different across groups. We then test for mean differences with the assumption of unequal variances. The inequivalence of variance illustrates the dispersion of individuals' life satisfaction from the group's mean, especially for those with higher than bachelor's degree. It reveals some people feel that life is very good, while others feel very low. This high level of education may reflect pressure on life in the future.

**Table 5.** Mean and variance differences in parental life satisfaction by the education level of parents and children.

| Hypothesis testing                | Parental life satisfaction score |           |              | Hypothesis testing for equivalence: |                      |
|-----------------------------------|----------------------------------|-----------|--------------|-------------------------------------|----------------------|
|                                   | Mean                             | Std. Dev. | Observations | Mean difference                     | Std. Dev. difference |
| Parents' education                |                                  |           |              |                                     |                      |
| Less than high school             | 1.966                            | 0.557     | 24,257       |                                     |                      |
| High school diploma or equivalent | 2.118                            | 0.529     | 1323         |                                     |                      |
| Bachelor's degree                 | 2.283                            | 0.565     | 829          | 116.825***                          | 53.003***            |
| Higher than a bachelor's degree   | 1.938                            | 0.613     | 2085         |                                     |                      |
| Children's education              |                                  |           |              |                                     |                      |
| Less than high school             | 1.911                            | 0.567     | 14,100       |                                     |                      |
| High school diploma or equivalent | 1.990                            | 0.541     | 7720         |                                     |                      |
| Bachelor's degree                 | 2.111                            | 0.545     | 5542         | 202.164***                          | 72.713***            |
| Higher than a bachelor's degree   | 2.132                            | 0.615     | 1132         |                                     |                      |

Note: Std. Dev. stands for standard deviations. \*\*\* is the significance level at 0.01; \*\* is the significance level at 0.05; and \* is the significance level at 0.10. *F* test values are reported for mean and standard deviation comparisons.

According to the *F* test results, life satisfaction of parents also seems to relate to their and their children's education level. Parents of children with higher educational degrees are more likely to be more satisfied with life and enjoy better well-being. This could possibly be because children's educational achievement can bring them a sense of pride and life fulfillment. At the same time, parents holding a bachelor's degree have the highest average score of life satisfaction, while those holding higher than a bachelor's degree surprisingly have the lowest average score. This may be because people with postgraduate degrees may hold high expectations from their education, expecting that their degree could provide financial security and social status. If their expectations are not met, it may lead to disappointment in life, especially when they reach older ages. Overall, education initially shows its important role on life satisfaction, especially children's education on parents' life, but it may not be an affirmative conclusion in the case of the educational degree of parents.

#### 4.2. Factors affecting parental life satisfaction

The ordered logistics regression with four scales is employed here to statically measure the explanatory power of variables. The marginal effect, with respect to each

variable, is further calculated to assess how the probability will change as a response to a unit change in those respective variables. The empirical results of the entire samples (**Table 6**) statistically show that gender, employment status, and the education of parents themselves have a significant effect on their life satisfaction. Similarly, personal characteristics of children—including education, age, gender, and employment status—reveal an important determination on their parents’ life satisfaction.

**Table 6.** Factors affecting parental life satisfaction.

|                                   | Coefficients           | Marginal effects       |                        |                        |                        |
|-----------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                                   |                        | $Y_i = 0$              | $Y_i = 1$              | $Y_i = 2$              | $Y_i = 3$              |
|                                   |                        | Not at all satisfied   | Slightly satisfied     | Moderately satisfied   | Very satisfied         |
| (1)                               | (2)                    | (3)                    | (4)                    | (5)                    |                        |
| <b>Parents’ characteristics</b>   |                        |                        |                        |                        |                        |
| Education Level                   | 0.0515***<br>(0.0173)  | -0.0005***<br>(0.0002) | -0.0060***<br>(0.0020) | 0.0004**<br>(0.0002)   | 0.0061***<br>(0.0020)  |
| Age                               | 0.0028<br>(0.0021)     | 0.0000<br>(0.0000)     | -0.0003<br>(0.0002)    | 0.0000<br>(0.0000)     | 0.0003<br>(0.0002)     |
| Female                            | -0.1916***<br>(0.0270) | 0.0017***<br>(0.0003)  | 0.0223***<br>(0.0032)  | -0.0014***<br>(0.0005) | -0.0226***<br>(0.0032) |
| Employed                          | 0.1065***<br>(0.0341)  | -0.0009***<br>(0.0003) | -0.0124***<br>(0.0040) | 0.0008**<br>(0.0004)   | 0.0125***<br>(0.0040)  |
| <b>Children’s characteristics</b> |                        |                        |                        |                        |                        |
| Education Level                   | 0.2479***<br>(0.0102)  | -0.0022***<br>(0.0002) | -0.0288***<br>(0.0012) | 0.0019***<br>(0.0005)  | 0.0292***<br>(0.0012)  |
| Age                               | 0.0114***<br>(0.0024)  | -0.0001***<br>(0.0000) | -0.0013***<br>(0.0003) | 0.0001***<br>(0.0000)  | 0.0013***<br>(0.0003)  |
| Female                            | 0.0702***<br>(0.0263)  | -0.0006***<br>(0.0002) | -0.0082***<br>(0.0031) | 0.0005**<br>(0.0002)   | 0.0083***<br>(0.0031)  |
| Employed                          | 0.1585***<br>(0.0479)  | -0.0014***<br>(0.0004) | -0.0184***<br>(0.0056) | 0.0012**<br>(0.0005)   | 0.0187***<br>(0.0056)  |
| <b>Threshold</b>                  |                        |                        |                        |                        |                        |
| $Y_i = 1$ (Threshold 1)           | -2.5580                | No. of Sample          | 28,494                 | -                      | -                      |
| $Y_i = 2$ (Threshold 2)           | 0.4494                 | $R^2$                  | 0.0235                 | -                      | -                      |
| $Y_i = 3$ (Threshold 3)           | 4.1224                 | -                      | -                      | -                      | -                      |

Note: Life satisfaction levels range from zero to three, with zero meaning no satisfaction at all while levels one to three mean slightly, moderately, and very satisfied with life, respectively. Robust standard errors are in parentheses. \*\*\* is the significance level at 0.01; \*\* is the significance level at 0.05; and \* is the significance level at 0.10. If the life satisfaction value is between greater than zero and less than or equal to Threshold 1 ( $0 < Y_i \leq \text{Threshold 1}$ ), it indicates slight life satisfaction ( $Y_i = 1$ ). Life satisfaction score between greater than Threshold 1 and less than or equal to Threshold 2 ( $\text{Threshold 1} < Y_i \leq \text{Threshold 2}$ ) indicates moderate life satisfaction ( $Y_i = 2$ ). Life satisfaction value between greater than Threshold 2 and less than or equal to Threshold 3 ( $\text{Threshold 2} < Y_i \leq \text{Threshold 3}$ ) indicates high life satisfaction ( $Y_i = 3$ ).

Female parents are proven less satisfied with their lives; being a mother increases the chance of being not at all satisfied or slightly satisfied with their life by 0.2% and

2.2%, respectively. However, this trend shifts when considering somewhat satisfied level, as the chance of female mothers feeling such satisfaction decreases. This is in line with the results of the mean difference test presented in the previous section.

Meanwhile, having a job can increase parental life satisfaction to higher levels than for those without jobs. Employed parents have a 0.1% to 1.2% higher chance of enjoying more satisfied lives than those that are unemployed. It is also found that parental education has a significant influence on their own life satisfaction. Parents with one higher level of education tend to be more satisfied with their lives than those with lower levels. However, age of parents is not significant in explaining parental life satisfaction.

As for children's characteristics, living with older children increases the likelihood of parents becoming very satisfied with their lives by 0.13%. In addition, living with daughters can promote parental life satisfaction, with 0.83% of parents more likely to be very satisfied. As for the main interest of this study, this result demonstrates the strong and positive explanatory power of children's education for parental life satisfaction. Specifically, when children gain one additional level of education, the probability of parents feeling moderately satisfied and very satisfied with their lives increases by 0.2% and 2.9%, respectively. Moreover, it is found that the employment status of children has an impact on their parents' life satisfaction. When comparing the influence of the educational level and employment status of children, the results indicate that children's education is a more important factor in improving parental life satisfaction.

To further contribute, this study examines the importance of mobility between generations in a family through educational differences. The samples are divided into 3 sub-sample groups by matching the level of education of parents and children: 1) the education of parents is lower than that of children; 2) the education of parents is higher than that of their children, and 3) parents and their children achieve the same level of education. These findings will help document the common belief of intergenerational income flow through children's education. The expected results should hypothetically improve the likelihood of parents' satisfaction in their life, especially when children at least gain the same educational degree. The results of the ordered logistic model are estimated separately and are presented in **Table 7**.

Interestingly, the education status of children has a significant effect on parental life satisfaction in all cases. If the children have a higher level of education, the chances of their parents being satisfied with life increases. This is exhibited the most in the case of group 1 where parents have less education than their children (0.3373), followed by parents with higher education than their children (0.2781), and the group of parents whose education is equal to that of their children (0.1469). These findings clearly emphasize the importance of children's education in its ability to make parents feel satisfied with life.

According to the marginal effect results, a higher level of education for their children generally helps parents avoid an unpleasant life. Parents with less educational attainment than their children have a 4.5% higher chance of being very satisfied with their lives, which is the highest level compared to the other two sample groups. On the other hand, parents who have the same level of education as their children tend to have the lowest chance of being very satisfied with their lives. In conclusion, the level of a

child’s education is significantly related to the improvement of parental life satisfaction, especially for those who graduated at a lower level than their children. This may be due to psychological forces motivated by expectations of dependency, financial stability, and social acceptance.

**Table 7.** Factors affecting parental life satisfaction categorized by parents’ and children’s education.

|  | Coefficients          | Marginal Effects        |                        |                        |                       |
|--|-----------------------|-------------------------|------------------------|------------------------|-----------------------|
|  |                       | $Y_i=0$                 | $Y_i=1$                | $Y_i=2$                | $Y_i=3$               |
|  |                       | Not at all satisfied    | Slightly satisfied     | Moderately satisfied   | Very satisfied        |
| (1)  | (2)                   | (3)                     | (4)                    | (5)                    |                       |
| The education of parents is lower than that of children  |                       |                         |                        |                        |                       |
| Children’s education                                     | 0.3373***<br>(0.0361) | -0.0023***<br>(0.0003)  | -0.0323***<br>(0.0035) | -0.0099***<br>(0.0015) | 0.0445***<br>(0.0048) |
| Threshold  |                       |                         |                        |                        |                       |
| $Y_i=1$ (Threshold 1)                                    | -1.2854               | No. of Sample           | 12,565                 | -                      | -                     |
| $Y_i=2$ (Threshold 2)                                    | 1.7043                | $R^2$                   | 0.0243                 | -                      | -                     |
| $Y_i=3$ (Threshold 3)                                    | 5.4879                | -                       | -                      | -                      | -                     |
| The education of parents is higher than that of children |                       |                         |                        |                        |                       |
| Children’s education                                     | 0.2781***<br>(0.0396) | -0.0029 ***<br>(0.0008) | -0.0367***<br>(0.0052) | 0.0049**<br>(0.0021)   | 0.0346***<br>(0.0051) |
| Threshold  |                       |                         |                        |                        |                       |
| $Y_i = 1$ (Threshold 1)                                  | -6.4142               | No. of Sample           | 2168                   | -                      | -                     |
| $Y_i = 2$ (Threshold 2)                                  | -3.3416               | $R^2$                   | 0.0386                 | -                      | -                     |
| $Y_i = 3$ (Threshold 3)                                  | 0.0728                | -                       | -                      | -                      | -                     |
| The education of parents is equal to that of children    |                       |                         |                        |                        |                       |
| Children’s education                                     | 0.1469***<br>(0.0305) | -0.0015***<br>(0.0003)  | -0.0194***<br>(0.0040) | 0.0059***<br>(0.0013)  | 0.0150***<br>(0.0031) |
| Threshold  |                       |                         |                        |                        |                       |
| $Y_i = 1$ (Threshold 1)                                  | -2.9660               | No. of Sample           | 13,761                 | -                      | -                     |
| $Y_i = 2$ (Threshold 2)                                  | 0.0385                | $R^2$                   | 0.0181                 | -                      | -                     |
| $Y_i = 3$ (Threshold 3)                                  | 3.7236                | -                       | -                      | -                      | -                     |

Note: see note underneath **Table 6**.

## 5. Discussions and conclusions

From the root problems of our society, questions have arisen about social well-being, especially in the preparation of dealing with an increasingly aging society. Thailand has lately reached the situation where there is an increase in the number of elderly people and a decrease in the birth rate. In addition to the issue of the aging society, the surveyed data strongly show that about half of parents in Thailand are quite low-educated—with less than a high school education. This trend is more likely to occur in developing countries in East Asia. Fortunately, the finding in this study indicates intergenerational mobility through the explanatory power of education. However, with a low level of parental education, this study seems to present low mobility, as in about half of surveyed households parents and children have earned

equal levels of education. If this matter is not improved, it may create a vicious cycle that becomes an obstacle to the development process of Thailand.

To make valuable contributions in this area, this present study aims to examine the determinants of elderly welfare, emphasizing the importance of education to the life satisfaction of parents. To address this question, the  $t$  and  $F$  statistics are used to test for mean difference hypotheses among the individual characteristics of both parents and children, and an ordered logistic model is employed to assess parental life satisfaction. The findings are generally consistent, revealing the explanatory power of education. The empirical regressions of disparities in education levels between parents and children also underscore the explanatory power of education for parental life satisfaction. Overall, the education levels of both parents and children can positively impact parental life satisfaction.

According to our findings, the strong association between children's education and the life satisfaction of parents is apparent. Most previous studies show similar evidence, for example, Dennison and Lee (2021), De Neve and Fink (2018), Liu and Cheng (2022) and Vu and Phung (2021). They generally found that children's education level is significantly important to improving parental well-being. While our study focuses on parents' satisfaction in life, existing literature on this area has explored the relationship between children's education and parents' welfare from different perspectives. For example, to study parental well-being, Wu and Penning (2019) and Yahirun et al. (2020) paid attention to their samples' state of mind by examining their mental health. On the other hand, Friedman and Mare (2014) and Zimmer et al. (2007) used elderly mortality to represent parents' welfare. Lee (2018), Vu and Phung (2021), Zhang et al. (2022) and Zhang and Liu (2022) combined both physical and mental health in their study of parental well-being.

Based on our results, we find that the connection between children's education and their parents' life satisfaction is especially evident for parents who have lower education than their children. This may be because receiving a low education level makes them feel insecure about their standing in society. With the higher educational achievement of their children reflecting their own success, they can gain security—emotionally and financially—and become more content with their lives. This is in sync with Botha (2014), Ferrante (2009), Liu and Cheng (2022) and Powdthavee et al. (2015). Although the association between children's education and parental life satisfaction is quite straightforward, Yahirun et al. (2017) found that this linkage took place in the long term and affects parental longevity more than short-term wellness.

The importance of education can also be found in the case of parents' educational attainment. The positive impact of parents' education on their own life satisfaction, shown earlier, is consistent with Chyi and Mao (2012), Thoma et al. (2021), Wu and Penning (2019) and Zimmer et al. (2007). It seems that the education of both parents and children complements each other and reinforces the positive connection with the former's satisfaction in life.

Besides education, the employment status of both parents and children is positively associated with the former's satisfaction in life. Our results align with previous studies, such as Dennison and Lee (2021), Liu and Cheng (2022) and Yahirun et al. (2020). Meanwhile, parents' security in self-caring is reflected in their employment status and financial independence. Parents can also enjoy better life

satisfaction by gaining confidence in their children's ability to care for them, as employment reasonably proxies intergenerational income flow. This supports the studies of Zhang and Liu (2022). This is also consistent with Chyi and Mao (2012) who found that being employed tends to make elderly people experience higher levels of happiness.

As presented previously, children's achievements in terms of either education or career can effectively improve parental life satisfaction. Children usually receive investment—financially, physically, and emotionally from parents, leading to an expectation of returns. As a result, children's accomplishment allows parents to meet their expectations and enhance life satisfaction.

Moreover, in Asian society, females usually take more responsibility for household chores and other domestic tasks than males do; consequently, female parents tend to be less satisfied with their lives than their male counterparts. This is consistent with the work of Demerouti et al. (2005), but contrary to Vu and Phung (2021). Thus, this issue should be further investigated to confirm the results of this study. Nevertheless, in the case of children's gender, our findings show the supportive evidence to Chen and Short (2008) and Qian and Knoester (2015), which found that living with female children, as providers of caretaking, had a strong positive effect on parents. On the other hand, this contradicts the suggestion from Guo et al. (2013) and Nauck (2014), which studied the traditional value placed on sons.

However, there are data limitations that may lead to an upward bias in this study. This study does not take income and health-related issues into analysis because of data unavailability. Both variables can positively correlate with our independent variables, such as education level as well as the life satisfaction variable (Thoma et al., 2021; Vu and Phung, 2021). Moreover, life satisfaction in this study is measured subjectively. With a pooled cross-sectional dataset, life satisfaction may change when a data-collected period changes, due to influence from different environmental factors that people experience.

## **6. Policy implications and recommendations**

From the results of our study, we found that the educational achievement of children significantly affected elderly parents' life satisfaction in all cases analyzed. All relevant parties should promote formal education and retention of students in the system. Although current trends and recent events, including technological advancements and the COVID-19 pandemic, have made formal education less attractive, non-formal education and other alternative forms of learning have become more popular. However, children's achievement in formal education still has a positive impact, especially in psychological terms. Through life satisfaction, formal education can build pride and confidence in parents' lives. We also found that parents' own education strongly boosts their life satisfaction, leading us to conclude that elderly life satisfaction could be linked to their own schooling success when younger. When children enter a new phase of their life and become parents themselves, they can continue to be satisfied with their own lives because education is an important factor in creating optimistic feelings. Therefore, to promote sustainable well-being for the population in an aging society, there is still a need to continually encourage formal

education among youth.

Promoting formal education can be an extension or modification of learning through other approaches that are currently popular. For example, it may be beneficial to make formal education more modern by using online learning. Formal education can also be made more attractive by blending with different learning approaches and allowing for equivalence or adjustment of qualifications from non-formal to formal education. This can make formal education more available for learners to access and remain in the system. In doing so, there must be a strong commitment from all stakeholders. In Thailand, the administration of formal education is under the jurisdiction of both the central government and local authorities. Their close collaboration is needed to overhaul the country's formal schooling, making it appealing to learners.

As previously explained in our results, a bachelor's degree, held by both parents and children, is the level of education that has a significant effect on parental life satisfaction. Therefore, policies to support free education should be extended from the secondary level to the bachelor's degree level. The 15-year free basic education program implemented by the government, including education loans, may motivate young children to go to school or even college. In the meantime, these programs can alleviate educational inequality, leading to improved welfare for low-income parents. A strong education system is an essential part of human resource development, eventually leading to economic sustainability. At the micro level, education can enhance welfare through family bonds across generations.

These educational policy recommendations aim to reduce the importance of parental background, thereby accelerating improvement of intergenerational mobility within families. This would eventually help unlock the problem of lower educational achievement of both parents and children. This can raise the chance of children accomplishing higher education than their parents, in turn, enhancing elderly parents' life satisfaction.

Furthermore, our findings show that parental employment status has an impact on their own life satisfaction. Employment can generate a positive psychological effect, causing parents to feel secure and safe as well as dignified and financially independent. Therefore, promoting the employment of elderly people who have the potential to still be able to work appropriately, especially in the post-retirement age, can help build resilience and well-being among parents. The government may implement policies such as tax privileges to organizations or businesses to stimulate the employment of post-retirement seniors in the role appropriate to their abilities.

Working allows the elderly to have continuous activities and interactions in society, maintaining their physical and mental health. This could result in increased welfare. Therefore, the government may also consider promoting and encouraging the elderly to engage in activities under the concept of active aging. The government may then also link the provision of elderly financial support, such as senior citizen allowances, to their health status. For instance, the payment of elderly allowances may be conditional with their taking care of or improving their health. The increasing growing of aging population is a global phenomenon. This situation and its consequences are commonly shared by countries and people across the world. The knowledge and implications from this study can be useful and globally applied.

With the research limitations mentioned in the previous section, several avenues may be worth further exploring. First, future studies may include different occupations of parents or children that may affect life satisfaction. Second, life satisfaction is subjectively self-assessed. Future studies may employ other measurements that can represent persons' well-being more objectively. Last, the relationship between children's gender and their education levels may affect parental life satisfaction. Chyi and Mao (2012) showed that parental education positively impacts their life satisfaction only in the case of males. Xu and Luo (2022) found that the education of sons and daughters influences their parents' health differently. Therefore, future studies may consider adding interaction terms between children's gender and their education levels.

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