

Population Review

Volume 54, Number 1, 2015

Type: Article pp. 84-101

Socio-Economic Activities of the Elderly in Thailand

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Abstract

This article examines the correlates of older Thais' engagement in socio-economic activities, which include paid and unpaid work. The data, derived from the 2011 National Survey of Older Persons in Thailand (N=16,373), show that only 7.2 per cent of the elderly did not participate in any socio-economic activity. Findings from Poisson regression analysis show that older Thais engagement in socio-economic activities is correlated with socio-demographic characteristics, health status, motivation and intergenerational solidarity within the family.

Keywords

Active ageing, value of the elderly, socio-economic activities, Poisson regression analysis

Acknowledgements: The author would like to thank the National Statistical Office of Thailand for support with the data. My sincere gratitude goes out to Assoc. Prof. Worawet Suwanrada, Ph.D., whose assistance was much appreciated. The author would also like to thank the anonymous reviewers whose comments helped to improve the manuscript. All errors and omissions are the sole responsibility of the author.

Introduction

The World Health Organization (WHO, 2002, p.12), in 2002, shaped the conceptual framework of “active ageing” and asserted that active ageing is a process that leads to good health, participation and security in older life. That conceptualization is in alignment with the so-called “activity theory,” which suggested that participation in activities is important in order for the elderly to feel a sense of satisfaction (Lemon et al., 1972).

With regard to developed countries, Volonteurope (2012) stated that volunteering is good for both the elderly and the community. Volunteering fosters active ageing that is good for health, enhances freedom in daily life, and promotes the feeling of being more involved in the community. According to the Royal Voluntary Service (2011), the value of non-market activities by British elderly in 2010 was about £20.69 billion (in the form of volunteering, gifts and donations to charities, bequests to charities, childcare, savings for grandchildren and asset transfers). This amount is expected to grow to nearly £30.08 billion in next 20 years. The Government of New Zealand’s Ministry of Social Development (2011) reached a similar finding on the value of non-market activities by the elderly in New Zealand. In 2011, the value of non-market activities by the elderly in New Zealand was about \$59.7million, and that figure is expected to increase to nearly £230.6 million in next 40 years.

In the Asian context, existing research shows that older adults significantly contribute to unpaid work in the form of domestic and caregiving services to household members. In China, Singapore and Taiwan older adults typically care for the children of their sons and daughters while their sons and daughters (and young adults) are working. However, the elderly in Japan, in general, do not view this as their “responsibility”; rather, they see it as an “alternative” (Ochiiai and Ueno, 2011).

The research that has been conducted on the correlates of older adults’ socio-economic activities in Thailand is very sparse. This research aims to present the situation of socio-economic activities of the elderly in Thailand with a focus on market activity, community services and domestic services to household members. The research also investigates the determinants of the number of socio-economic activities in which older adults engage in. The findings of this study contribute to the literature on active ageing within South-East Asia by documenting older adults’ continuous contribution to their families and communities, and by extension Thailand’s economy.

The Thai context

Thailand is ranked (just behind Singapore) as having the second-most aged population in South-East Asia. The percentage of the population in Thailand aged 60 and over increased from 5 per cent in 1970 to 15 per cent in 2014 (United Nations Population Fund, 2006; National Statistic Office, 2014), mainly due to a decline in fertility and an improvement in longevity.

Traditionally, Thai culture has held older adults in high esteem. The positive view towards older adults is, however, changing alongside Thailand’s rapid economic development. Arguably, rapid urbanization, increasing capitalism and a shift towards more individualistic attitudes and behaviors are contributing to more negative views of older adults. According to the national report on the Situation of the Thai Elderly 2011, 57 per cent of younger cohorts (18 -59 years old) have positive perceptions of older adults. This is in stark contrast to the 90 per cent of younger cohorts that held positive attitudes towards the elderly

roughly 10 years ago when the government developed the second National Plan on the Elderly for 2002-2021 (Prachuabmoh, 2012).

The increasing proportion of older adults in Thai society raises concern for Thailand's labor force structure and government expenditures on social welfare. The current pay-as-you-go pension system means that the current working age population is taking on an increasing financial burden and responsibility for older adults. State social welfare expenditures are increasing (Ministry of Social Development and Human Security, n.d.). Although older adults may be perceived as an economic drain, it is important to point out that older adults continue to contribute to the socio-economic development of society, through paid and unpaid work. Previous research shows that 38.3 per cent of Thai older adults 60 years and over continue to perform economic activities. Furthermore, in comparison to other age groups, the elderly in Thailand (aged 60-69) spend more time providing domestic care services to their households and community (Chunharas, 2009; Prachuabmoh, 2012; Choiejit, 2013).

Objectives

As objectives, the present research seeks to:

1. Describe the current socio-economic activities of the elderly in Thailand;
2. Investigate the determinants of the socio-economic activities of the elderly in Thailand.

Methods

Data were drawn from the 2011 survey of the elderly population in Thailand, which was conducted by the National Statistical Office. The elderly were classified as the Thai population age 60 and over. The sample included 16,373 persons (age of 60 and over). Each person in the sample filled in a self-administered questionnaire.

To meet the first objective of the study (see Objectives above), descriptive statistics (frequency and percentage) were used to analyze nominal and ordinal scale data. The descriptive analysis attempted to present a detailed overview of the current socio-economic activities performed by the elderly.

To meet the second objective of the study, Chi-square tests were used to evaluate the relationship between the independent variables and dependent variable according to binary variable theory. If any factor had statistical significance at $p < .05$, that independent variable was analyzed, using Poisson regression method and maximum likelihood. The results of incidence rate ratio or "IRR" are reported below.

The dependent variable was the amount or the number of socio-economic activities. It was divided into three activities:

- 1) Domestic and caregiving services to household members (buying food, cooking, cleaning the house, laundering, taking care of grandchildren aged less than 10 years, and caregiving to those aged 60 years and over);
- 2) Community services (volunteer work, taking care of other elderly, helping with community activities);

3) Working.

Any older person that performed any socio-economic activity was given an activity score of 1 and earned the maximum score of 3 for doing all activities. The lowest score was 0, meaning no activities were performed.

Independent variables were as follows: demographic, economic, social, health status, motivation (measured by rating the feeling of happiness when helping someone and rating the feeling of sympathy when seeing someone in trouble), and intergenerational solidarity within the family (measured by the frequency of receiving money, food and groceries from a child or children, the frequency of visits, telephone calls with a child or children, and ratings of positive feelings for family members) (see tables 2-5; all tables are in the annex to the present document).

Results

1. The current situation of socio-economic activities of the elderly in Thailand.

The results show that 11.2 per cent of the total elderly perform all three socio-economic activities: domestic and caregiving services to household members, community services and economic activity. Those who perform two activities and one activity account for 37.2 and 44.4 per cent of total elderly, respectively. Only 7.2 per cent do not perform any activities. When examining engagement by type of activity, the data show that 64.9 per cent of the elderly are involved in both unpaid and paid work (i.e. domestic and caregiving services to their household and economic activities). As revealed in table 1, the majority of older adults (94.2 per cent) perform one activity (i.e. unpaid domestic work).

2. The determinants of the number of socio-economic activities of the elderly.

The results of the chi-square tests show statistically significant correlations between the independent variables and the dependent variable (see tables 2-5). These findings show associations and not the net effect of any particular variable. The multivariate analyses with selected variables identify the net effect of particular demographic, economic and social correlates by controlling for the influence of independent variables.

The Poisson regression model fits reasonably well because the chi-square goodness of fit test is not significant.

Demographic, economic and social

As shown in table 6, when factors are controlled, sex, age, marital status, personal income, education and living area variables are correlated with the elderly's engagement in socio-economic activities ($p < .001$). The elderly with no education and the elderly that graduated from primary school or the equivalence reach a statistical significance of $p < .05$. Females are 0.95 times less prone than males to perform many socio-economic activities. Increasing age is negatively associated with engagement in many socio-economic activities. Persons age 80 and over and persons age 70-79 are 0.67 and 0.84 times respectively less likely than persons age 60-69 to perform many socio-economic activities.

Marital status is significantly associated with the elderly's engagement in socio-economic activities. The married elderly are 1.07 times greater than unmarried or formerly married elderly to engage in many socio-economic activities. The personal income of the elderly is positively associated with engagement in socioeconomic activities. The elderly with personal incomes of 300,000 baht and over, 100,000-299,999, 50,000-99,999 and 10,000-49,999 are 1.24, 1.23, 1.22, and 1.10 times respectively more likely to perform many socio-economic activities than those with personal incomes of less than 10,000 baht per year. Level of education is negatively associated with engagement in many socio-economic activities. The elderly with no education and those who graduated from primary school or the equivalence are 1.08 and 1.10 times respectively more likely to perform many socio-economic activities than those who graduated from high school. In addition, the elderly living in a municipality are 0.94 times less likely to perform many socio-economic activities than those living outside a municipality.

Health status

The results reveal that self-assessment of health, number of chronic diseases and the ability to independently perform daily activities are all significantly associated with the socio-economic activities that the elderly performed, with the exception of the elderly with one chronic disease ($p = .529$). The elderly who feel that they have good to very good health and fair health are 1.15 and 1.10 times respectively more likely to perform many socio-economic activities than those who think they are in bad or very bad health ($p < .001$). The elderly with more than one chronic disease are 0.95 times less likely than the elderly without any chronic disease to perform many socio-economic activities ($p < .05$). Furthermore, the elderly who carry out all of their daily activities by themselves and those who struggle to perform 1-2 daily activities were 1.39 and 1.28 times respectively more likely to perform many socio-economic activities than those who struggle to do activities and cannot perform more than 2 daily activities ($p < .001$).

Motivation

The results reveal that the motivation variable of "warm glow" as measured from "the happiness felt when helping someone in trouble" is associated with engaging in socio-economic activities ($p < .05$). The elderly who believe that they feel the highest level of happiness when helping someone in trouble are 1.07 times more likely to perform many socio-economic activities than those with low to high level of happiness or no happiness.

Intergenerational solidarity within the family

The elderly with a high level of functional solidarity are 0.95 times less likely to perform many socio-economic activities than the elderly with lower levels of functional solidarity (low and medium level) ($p < .001$). The elderly with a high level of associational solidarity are 1.05 times more likely to perform many socio-economic activities greater than the elderly with lower levels of associational solidarity ($p < .05$) (see table 6).

Discussion and conclusion

An analysis of the socio-economic activities of Thai elderly indicates that through such activities they are increasingly more involved in national development, doing a wide variety of paid and unpaid work. Based on the findings, only 10% did not engage in any activities at all. On the other hand, 11% took part in all

the activities, i.e. looking after their family members, providing community services, and carrying out economic tasks, and as much as 80% participated in one to two activities.

In addition to benefiting their family members, such activities also prove beneficial for the elderly themselves. To begin with, performing economic and social tasks promotes the feeling of living a valuable and meaningful life, or 'active aging.' According to the World Health Organization (2002), an elderly person will enjoy active aging provided that three conditions are present: good health, life security, and social engagement. Similarly, the activity theory postulates that the elderly have the same psychological and social needs as they did in middle age. Hence, ceasing activities once performed or leading an isolated life runs contradictory to the needs of the elderly. When someone becomes more socially isolated and less socially involved as a result of retirement or widowhood, or loses the occupational abilities they once had, for instance, they will suffer a loss of self-identity, reduced life quality, diminished self-confidence, and social isolation (cf. Havinghurst, 1961). It may be concluded, therefore, that the well-being of the elderly requires constant social participation similar to that of by middle-aged people albeit in different forms, e.g. doing volunteer work or lending a hand to one's own or other families. Such activities are deemed helpful in replenishing their self-esteem, providing them with a sense of satisfaction and pride from their close or informal interaction with others.

The findings on the factors affecting the number of socio-economic activities performed by Thai elderly reveals that health conditions are most influential. It was found that those that were self-dependent in daily life activities were more likely to engage in economic and social tasks than those experiencing difficulties in this regard. Other health-related indicators, e.g. self-evaluation of health and the number of personal or chronic illnesses, were also identified as confounding variables. Such results are consistent with the findings of Soonthomdhada (2010), who found that health conditions strongly correlated with the degree of participation in economic and social activities in Thailand. The results are also consistent with studies on the elderly in the United States (see Wilson and Musick, 1999; McGarry, 2004; Catsouphe and Smyer, 2005), Canada (see Chen et al., 2012) and New Zealand (see Ministry of Social Development, 2011). This is perhaps due to the relationship between health and social abilities, and the role of good health as one of the three conditions contributing to active aging.

Demographic, economic, and social factors, including sex, age, marital status, income, educational level, and residential area, are also explanatory of the number of socio-economic activities Thai elderly take part in. The present study discovered that elderly females tended to engage in such activities more than their male counterparts. As for this aspect, past studies reported mixed results, probably because of their classification of activities. Choiejit (2013), for instance, examined the time allocation patterns of Thai elderly, discovering that elderly females spent more time nurturing their family members and less time working than elderly males. With regard to gender, it was found that both males and females were equally involved in community services.

In terms of age, late elderly (over 80 years of age) and mid-elderly citizens (70-79 years of age) were found to perform all types of economic and social activities to a lesser extent than early-elderly ones (60-69 years of age). Other studies on the elderly have recorded similar results in both Thailand (see Pananiramai, 2002; Sonthomdhada, 2010) and Canada (see Vaillancourt, 1994). Finally, consistent with the findings of the present study, Yvon (2008) found that married elderly couples living together in the United States were more likely to take part in socio-economic activities than the elderly of other types of marital status. This may be attributable to the mutual aid married elderly couples provide to each other as life partners.

With reference to income level, Thai elderly in the higher income group tended to take part in more varied socio-economic activities than those in the lower one. This finding mirrors other research that has shown a positive correlation between income level and the degree of social participation, particularly in the form of volunteer work (see Freeman, 1997; the Population Reference Bureau, 2011; Vaillancourt, 1994; Yvon, 2008). This may result from the different types of social relationships this group of elderly have and hence the increased likelihood of being offered volunteer work. The plausible explanations for this are that wealthier elderly may feel an obligation to do something in return for their community and they might have more free time to engage in volunteer work than those who have lower income. As for economic activities, the elderly in the higher income group were more likely to continue to work after their retirement, either full-time or part-time, which is consistent with the findings of Hebert and Luong (2008) and Schellenberg, Turcotte and Ram (2005). A possible explanation for this phenomenon is a disparity between the two groups of elderly in terms of their possession of financial resources required for job creation. However, it should be noted that Heisig (2011) reported, from a survey of 33 countries, that housework was the type of job the elderly in the lower income group were more involved in than their higher income counterparts.

With regard to level of education, the less educated elderly were more likely to be involved in socio-economic activities than the more educated elderly. Such findings are incongruous with those of Davis, Smith and Marsen (2010) and the Population Reference Bureau (2011), which demonstrated a positive correlation between educational level and socio-economic activities. This is not surprising provided that the more educated elderly tend to be more skilled, thereby exhibiting a stronger degree of economic and social involvement.

With reference to residential area, Thai elderly living in a municipal district had a stronger likelihood of taking part in fewer socio-economic activities than those living outside a municipal district. This may be attributable to the fact that in rural areas, the majority of people are employed in the agricultural sector, which entails a longer span for economic involvement and a higher degree of social participation resulting from closer ties between family and community members. However, Choiejit (2013) points out evidence to the contrary, reporting that the elderly in a municipal district spent more time on average looking after their family members, doing community services, and earning their living, compared to those living in remote areas.

Turning to psychological factors, motivation was found to be a variable in determining the degree of economic and social involvement. Specifically, Thai elderly who felt a strong sense of satisfaction from helping others were more likely to engage in socio-economic activities than those who felt slightly satisfied or not satisfied at all. This may be explained by the concept of “warm-glow motivation.” Essentially induced by sympathy and compassion, “warm-glow motivation” leads to fulfillment, pride and joy (Andreoni, 1989).

Another related factor is intergeneration solidarity within the family. Functional solidarity, measured in terms of the frequency of receiving money or other gifts in kind, was found to correlate negatively with the number of socio-economic activities. This finding is not surprising as elderly family members may feel obliged to do something in return for the courtesy of their children, usually in the form of doing housework or looking after their grandchildren, thereby depriving them of the chance for economic and social involvement. The phenomenon is also congruent with the feeling of gratitude, which is highly held in Thai society (cf. Alam, 2007). In contrast, associational solidarity, measured in terms of the frequency of visits and telephone conversations between the elderly and their children, was found to correlate positively with the number of economic and social activities. One possible reason for this is that visits and

telephone conversations imply the elderly are living separately from their children, which probably contributes to their greater participation in economic and social activities.

One main limitation of the present research is its reliance on secondary data, which may affect its validity. In addition, both economic and social activities are incorporated in the analysis in order to provide a holistic picture of the phenomenon. However, such an approach may lead to difficulty in teasing out the intricate relationships between the demographic and socio-economic variables and the level of economic and social involvement in the interpretation process. For instance, some independent variables may correlate positively with social participation but negatively with economic involvement.

To conclude, this study on the role of Thai elderly in national development, especially in the form of economic and social participation, should provide a useful depiction of how the elderly in South-East Asia may remain active citizens. Based on the results, it is recommended that active ageing begins with good physical health and is further promoted with various forms of social support, such as encouragement, appreciation of their value, responsiveness to their role as a meaningful part of society, and financial aid. All of these factors are important because they help determine whether active aging is a realistic goal for Thai citizens or just an expectation beyond reach.

Annex

Table 1. The number of socio-economics activities of the elderly

(n=16373)

| Number of socio-economics activities of the elderly | Number | Percentage |
|---------------------------------------------------------------------------|--------|------------|
| Perform all activities | 1828 | 11.2 |
| Perform 2 activities | 6084 | 37.2 |
| domestic and caregiving services to household members+ community services | (2053) | (33.7) |
| domestic and caregiving services to household members + market activity | (3951) | (64.9) |
| community services + market activity | (80) | (1.3) |
| Perform 1 activity | 7274 | 44.4 |
| domestic and caregiving services to household members only | (6851) | (94.2) |
| community services only | (115) | (1.6) |
| economic activity only | (308) | (4.2) |
| None | 1187 | 7.2 |
| Total | 16373 | 100.0 |

Table 2. Number of socio-economic activities of the elderly by demographic, economic and social factors (n=16373)

| Demographic, economic and social | Number of socio-economic activities of the elderly | | | | Number (percentage) | χ^2 |
|----------------------------------------|----------------------------------------------------|--------------|-------------|------------|------------------------|------------|
| | 3 activities | 2 activities | 1 activity | none | | |
| Sex | | | | | | 427.168** |
| Female | 801 (8.3) | 3293 (34.3) | 4863 (50.6) | 648 (6.7) | 9605 (58.7) | |
| Male | 1027 (15.2) | 2791 (41.2) | 2411 (35.6) | 539 (8.0) | 6768 (41.3) | |
| Age | | | | | | 2279.755** |
| 60 – 69 years old | 1437 (16.1) | 4118 (46.2) | 3118 (35.0) | 242 (2.7) | 8915 (54.4) | |
| 70 – 79 years old | 362 (6.4) | 1701 (30.0) | 3078 (54.2) | 534 (9.4) | 5675 (34.7) | |
| 80 years old and over | 29 (1.6) | 265 (14.9) | 1078 (60.5) | 411 (23.1) | 1783 (10.9) | |
| Marital status | | | | | | 658.338** |
| married (living together in household) | 1351 (13.9) | 4113 (42.4) | 3727 (38.4) | 513 (5.3) | 9704 (59.3) | |
| others | 477 (7.2) | 1971 (29.6) | 3547 (53.2) | 674 (10.1) | 6669 (40.7) | |
| Income (Thai baht) | | | | | | 1052.953** |
| less than 10,000/year | 132 (5.1) | 635 (24.6) | 1485 (57.6) | 328 (12.7) | 2580 (15.8) | |
| 10,000-49,999/year | 720 (9.1) | 2691 (34.1) | 3893 (49.4) | 582 (7.4) | 7886 (48.2) | |
| 50,000-99,999/year | 624 (16.1) | 1788 (46.2) | 1282 (33.1) | 174 (4.5) | 3868 (23.6) | |
| 100,000-299,999/year | 262 (16.9) | 744 (48.1) | 471 (30.4) | 71 (4.6) | 1548 (9.5) | |
| 300,000 and over/year | 90 (18.3) | 226 (46.0) | 143 (29.1) | 32 (6.5) | 491 (3.0) | |

| | | | | | | |
|----------------------|-------------|-------------|-------------|-----------|--------------|-----------|
| Education | | | | | | 164.069** |
| no education | 109 (6.1) | 525 (29.3) | 983 (54.9) | 175 (9.8) | 1792 (10.9) | |
| primary schools | 1485 (11.7) | 4782 (37.7) | 5519 (43.5) | 913 (7.2) | 12699 (77.6) | |
| high school and over | 234 (12.4) | 777 (41.3) | 772 (41.0) | 99 (5.3) | 1882 (11.5) | |
| Living area | | | | | | 48.886** |
| municipal area | 909 (9.9) | 3402 (36.9) | 4182 (45.4) | 728 (7.9) | 9221 (56.3) | |
| non-municipalities | 919 (12.8) | 2682 (37.5) | 3092 (43.2) | 459 (6.4) | 7152 (43.7) | |

** p-value < .001

Table 3. Number of socio-economic activities of the elderly by health status (n=16373)

| Health status | Number of socio-economic activities of the elderly | | | | Number (percentage) | χ^2 |
|---------------------------------------------|----------------------------------------------------|--------------|-------------|------------|---------------------|------------|
| | 3 activities | 2 activities | 1 activity | none | | |
| Self-assessment of health | | | | | | 849.684** |
| good/very good | 1015 (14.6) | 3013 (43.4) | 2656 (38.2) | 265 (3.8) | 6949 (42.4) | |
| fair | 678 (9.7) | 2465 (35.4) | 3290 (47.3) | 522 (7.5) | 6955 (42.5) | |
| bad/very bad | 135 (5.5) | 606 (24.5) | 1328 (53.8) | 400 (16.2) | 2469 (15.1) | |
| Chronic disease | | | | | | 286.167** |
| none | 986 (13.7) | 2934 (40.7) | 2887 (40.0) | 404 (5.6) | 7211 (44.0) | |
| 1 chronic disease | 646 (10.2) | 2266 (35.9) | 2903 (46.1) | 489 (7.8) | 6304 (38.5) | |
| > 1 chronic disease | 196 (6.9) | 884 (30.9) | 1484 (51.9) | 294 (10.3) | 2858 (17.5) | |
| Ability to independently perform activities | | | | | | 2271.017** |
| carried out every of daily activities | 1553 (15.0) | 4563 (44.1) | 3874 (37.4) | 366 (3.5) | 10356(63.3) | |
| struggled to perform 1-2 daily activities | 215(6.5) | 1097(33.1) | 1788(54.0) | 212(6.4) | 3312(20.2) | |
| struggled to perform >2 activities | 60(2.2) | 424(15.7) | 1612(59.6) | 609(22.5) | 2705(16.5) | |

** p-value < .001

Table 4. Number of socio-economic activities of the elderly by motivation (n=16373)

| Motivation | Number of socio-economic activities of the elderly | | | | Number (percentage) | χ^2 |
|----------------------------|----------------------------------------------------|-------------|-------------|------------|---------------------|----------|
| | 3 activities | 2activities | 1activity | none | | |
| Pure altruism motivation | | | | | | 28.313** |
| highest level | 327 (14.0) | 883 (37.9) | 976 (41.9) | 145 (6.2) | 2331 (14.2) | |
| others (lowest, low, high) | 1501 (10.7) | 5201 (37.0) | 6298 (44.9) | 1042 (7.4) | 14042 (85.8) | |
| Warm glow motivation | | | | | | 60.126** |
| highest level | 401 (14.1) | 1132 (39.9) | 1143 (40.3) | 159 (5.6) | 2835 (17.3) | |
| others (lowest, low, high) | 1427 (10.5) | 4952 (36.6) | 6131 (45.3) | 1028 (7.6) | 13538 (82.7) | |

** p-value < .001

Table 5. Number of socio-economics activities of elderly by intergenerational solidarity within family (n=16373)

| Intergenerational solidarity within family | Number of socio-economics activities of the elderly | | | | Number (percentage) | χ^2 |
|--------------------------------------------|-----------------------------------------------------|-------------|-------------|-----------|---------------------|-----------|
| | 3 activities | 2activities | 1activity | none | | |
| Functional solidarity | | | | | | 188.793** |
| high level | 435 (8.5) | 1649 (32.2) | 2571 (50.2) | 467 (9.1) | 5122 (31.3) | |
| others (low, medium) | 1393 (12.4) | 4435(39.4) | 4703 (41.8) | 720 (6.4) | 11251 (68.7) | |
| Associational solidarity | | | | | | 35.278** |
| high level | 1357 (12.0) | 4236 (37.5) | 4939 (43.7) | 778 (6.9) | 11310 (69.1) | |
| others (low, medium) | 471 (9.3) | 1848 (36.5) | 2335 (46.1) | 409 (8.1) | 5063 (30.9) | |
| Affectual solidarity | | | | | | 40.550** |
| high level | 685 (12.9) | 2042 (38.5) | 2211 (41.7) | 362 (6.8) | 5300(32.4) | |
| others (low, medium) | 1143(10.3) | 4042(36.5) | 5063(45.7) | 825(7.5) | 11073(67.6) | |

** p-value < .001

Table 6. Poisson regression of the elderly's socio-economic activities

(n=16373)

| Determinants | IRR (95% CI) | z-scores |
|--------------------------------------------------------------------------------------------------------------|----------------------|----------|
| Female (baseline: male) | 0.945 (0.920-0.971) | -4.10** |
| 80 years old and over | 0.669 (0.634-0.706) | -14.65** |
| 70 – 79 years old (reference: 60 – 69 years old) | 0.837 (0.813-0.862) | -12.03** |
| married and living together in household (reference : others status) | 1.074 (1.045-1.105) | 4.99** |
| 300,000 Thai baht and over/year | 1.236 (1.141-1.338) | 5.23** |
| 100,000-299,999 baht/year | 1.234 (1.169-1.303) | 7.61** |
| 50,000-99,999 baht/year | 1.223 (1.171-1.278) | 9.08** |
| 10,000-49,999 baht/year (reference : less than 10,000 baht/year) | 1.096 (1.053-1.141) | 4.52** |
| no education | 1.081(1.019-1.147) | 2.59* |
| primary school (reference : high school and over) | 1.010 (1.053-1.147) | 4.38** |
| municipal area (reference : non-municipal area) | 0.944 (0.920- 0.968) | -4.41** |
| feel good/very good health | 1.152 (1.103-1.203) | 6.42** |
| feel fair health (reference : feel bad/very bad health) | 1.095 (1.050-1.142) | 4.24** |
| 1 chronic disease | 0.991 (0.964-1.019) | -0.63 |
| more than 1 chronic disease (reference : none) | 0.950 (0.914- 0.986) | -2.66* |
| carried out all of daily activities | 1.390 (1.329-1.453) | 14.41** |
| struggled to perform 1-2 daily activities (reference : struggled to perform more than 2 daily activities) | 1.277 (1.216- 1.341) | 9.82** |

| | | |
|------------------------------------------------------------------------------------------|----------------------|---------|
| Highest sympathy when seeing someone in trouble (reference : lowest, low, and high) | 0.992 (0.944-1.043) | -0.31 |
| highest happiness when helping someone in trouble (reference : lowest, low, and high) | 1.066 (1.018- 1.116) | 2.70* |
| high level of functional solidarity (reference : low and medium) | 0.945 (0.918-0.974) | -3.69** |
| high level of associational solidarity (reference : low and medium) | 1.047 (1.017-1.078) | 3.06* |
| high level of affectual solidarity (reference : low and medium) | 1.017 (0.988-1.046) | 1.12 |

Prob > F = .0000, Pseudo R2 = 0.0376, Log likelihood = -21117.392

** p-value < .001, * p-value < .05, CI: Confidence Interval, IRR: Incidence Rate Ratio

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