

The Relationship between the Living Arrangement and Life Satisfaction of the Elderly – A discussion for 4 regions in Taiwan

Shu-Mei Chen

Professor, Department of Real Estate Management, Kun Shan University, Taiwan

e-mail: mayc2110@mail.ksu.edu.tw

Shwu-Huey Wang

Instructor, Department of Innovation and Entrepreneurship, Far East University, Taiwan

e-mail: shwuhuey.wang@gmail.com

Pei-Shyuan Lin

Ph.D Student, Department of Land Economics, National Cheng Chi University, Taiwan

98257503@mail.nccu.edu.tw

Abstract

For the coming of aging society, the issues of the life satisfaction for the elderly are very important. The extended family was the traditional family type which the senior parents and their children live together and have reciprocal relationships between the two generations. Are the seniors still satisfied with living with their children, no matter in urbanized or rural region? Based on the unbalanced development among the four regions in Taiwan, this study intends to explore the life satisfaction degree for the elderly among the four regions in Taiwan. The gaps of social resources and local economy performances between the urbanized region and rural one would make different social support systems, and then the environments affect the living arrangement decisions for the elderly. Further, the life satisfaction of the elderly would be the results of the interactions between the living arrangement, health condition, economic status, social support and their children's financial status. The data of elderly Situation Survey by the MOI in Taiwan is analyzed, and this study estimates the life satisfaction regression model in the empirical study. Eight hypotheses are examined. The results of this paper show that if the existing living arrangement is living with children and matching the ideal one for the elderly, the seniors are healthier, got more sufficient living expense and more social supports, they would have higher life satisfaction degrees. Some urban and rural differences issues are discussed. The policy implications can provide some useful suggestions on the relative family and welfare policies for the elderly.

Keywords: The elderly, living arrangement, life satisfaction

Introduction

For the population is aging fast, Taiwan has to cope with problems resulting from the continuing increase in the number of old people. As a result of industrialization and urbanization, Taiwan's traditional big family system is gradually changing. The traditional living arrangement of multi-



generation family would cause the erosion of family care system. However, the gap between rural and urban environments would influence on the different living arrangement.

With rapidly growth of aging population, the living arrangement and the care for the elderly citizens has become an important issue. According to statistics compiled by the Ministry of the Interior, there were 1,480,000 elderly people in September 1993, representing 7 percent of Taiwan's total population. That met the criteria of an old aging society set by the United Nations. The old age population has rapidly increased. In 2002, it topped 2,000,000 and soared to 2,130,000 at the end of October 2004, accounting for 9.43 percent of the total population in Taiwan. The population of above 65 years old was 10.3% by June, 2008, the increasing number of the seniors is obviously observed.

Because the fertility rate in Taiwan is decreasing significantly, the number of children per married couple dropped from 3.1 in 1976 to 1.7 in 1986. Taiwan's fertility rate in 2003 was 1.4 per woman, lower than the average 1.5 in developed countries and 3.1 in developing nations. Meanwhile, the old age dependency ratio was 9 percent in 1995, and it has gone up to 13.25 percent in October 2004. Additionally, Taiwan lacks a comprehensive old age pension scheme in practice like the one in other developed countries. There is an increasing burden for the wage-earning youth to support the aged parents.

According to the statistics of household and housing in 2000, the proportion for the elderly citizens above age 65 living with their children is 58.1%, the rate of living with spouse is only 17.4%, and the rate of living alone is 16%. The extended family is a traditional family type in Chinese societies, and which is an alternative solution to provide family support to the elderly citizens based on the culture of filial piety. McFall & Miller (1991) pointed that family caregiver is the variable of the informal support network that affect use of formal helpers for the elderly. Even in Asian society, some reciprocal relationships on the two generations' altruistic behaviors, such as financial support and care giving behavior, would influence on the living arrangement and life satisfaction of the elderly (Chen & Lin, 2010; De Vos & Lee, 1993; Morgan & Hirosima, 1983; Kennedy & Stokes, 1982).

Home is a symbol of quality, it's a place of accommodation, and which can cover one's basic physical needs and mental welfare (Fogel, 1993). In Taiwan, 61.22% of the elderly citizens think living with their children is their preferred living arrangement; however, 38.78% of them don't live in with their children (Table 1). Mostly, the elderly's preferable living arrangement is also to live with their children (the proportion is approximately 61.22%); on the other hand, the ratio of those who preferred to live with children but actually not is about 17.98%.

Table 1. Cross-analysis results of present and ideal living arrangement of the elderly

			Ideal living arrangement type		Total
			Not living with children	Living with children	
Present living Arrangement type	Not living with children	Sample	477	158	635
		Ratio(%)	31.57	10.46	
		Row ratio(%)	75.12	24.88	
	Column ratio(%)	81.40	17.08		
Living with children	Sample	109	767	876	
	Ratio(%)	7.21	50.76		
	Row ratio(%)	12.44	87.56		
Column ratio(%)	18.60	82.92			
Total		Sample	586	925	1511
		Ratio(%)	38.78	61.22	100.00

Chi-square $p < .0001$

Note: The elderly who are with the following cases are deducted: no children (including adoption), domicile place is outer island and those who are living in relative's home or nursing institutions.

Source: the elderly Situation Survey conducted by the MOI in Taiwan, 2005.

As table 2 shows, it is observed that the elderly living in extended family, they get higher life satisfaction than those who live with spouse only or alone. The elderly citizens who are living with spouse only or alone can not get fully family supports, either physical care or emotional care, may have lower life satisfaction. This study argues that if the current living arrangement for the elderly citizens matched their ideal living arrangement, then the residential preference would be satisfied. This study will investigate the relationships between living arrangement and life satisfaction for the elderly citizens.

Table 2. Cross-analysis results of life satisfaction and present living arrangement of the elderly (Unit:%)

			Life satisfaction				Total
			Quite dissatisfied	Not very satisfied	A little satisfied	Quite satisfied	
Present living arrangement type	Not living with children	Sample	27	87	387	28	639
		Ratio(%)	1.78	5.75	25.56	1.72	42.21
		Row ratio(%)	4.23	13.62	60.56	4.08	
		Column ratio(%)	54.00	48.07	42.16	53.85	
	Living with children	Sample	23	94	531	227	875
		Ratio(%)	1.52	6.21	35.07	14.99	57.79
		Row ratio(%)	2.63	10.74	60.69	25.94	
		Column ratio(%)	46.00	51.93	57.84	62.19	
Total		Sample	50	181	918	365	1514
		Ratio(%)	3.30	11.96	60.63	24.11	100.00

Chi-square $p < .0403$

Note: The elderly who are with the following cases are deducted: no children (including adoption), domicile place is outer island, those who are living in relative's home or nursing institutions and answered no comments/hard to say/reject to reply to the life satisfaction in the questionnaire.

Source: the elderly Situation Survey conducted by the MOI in Taiwan, 2005.

In Taiwan, there exist significant gaps between urban and rural areas. The population and employment opportunities mostly center in metropolitans; it results from high housing price and living cost. Those elderly citizens who live with their children can share the high housing cost. Chattopadhyay & Marsh (1999) found that the rapid industrialization, urbanization and economic growth impact familial relationships. This study has shown that although co-residence in Taiwan is declining, children still can make contribution to the households in which their parents live, in fact more so in 1991 than in 1963.

For economic reasons, young working people usually tend to move out from small cities to seek better employment opportunities. The opportunity is limited for the elderly citizens to choose living with their children and get family supports in rural regions with lower level of industrialization and urbanization. The elderly people in rural areas even have to bear the burden of giving care to grandchildren and being the breadwinner and providing the source of income for the entire family. This study looks further into the gaps of living arrangement between rural and urban areas.

From table 3, we can see that the ratio of living with children presently in the north is the highest (about 63.69%), the percentage in the middle and south is slightly higher than 50%, and the one in the east is the lowest, it's only 46.15%.

This depicts that there do exist regional difference in terms of the elderly's living arrangement. In urban areas, the employment rate is high but the living cost is also expensive, so the elderly would live with children to share housing cost. In contrast, the population density in rural areas is low and the outward migration rate is high, this would restrict the elderly to live with children.

Table 3. Cross- analysis results of the elderly's living arrangement in different areas

			Living area				Total
			North	Middle	South	East	
Living arrangeme nt type	Not living with children	Sample	232	191	236	28	687
		Ratio(%)	14.26	11.74	14.51	1.72	42.22
		Row ratio(%)	33.77	27.80	34.35	4.08	
		Column ratio(%)	36.31	44.32	46.73	53.85	
	Living with children	Sample	407	240	269	24	940
		Ratio(%)	25.02	14.75	16.53	1.48	57.78
		Row ratio(%)	43.30	25.53	28.62	2.55	
		Column ratio(%)	63.69	55.68	53.27	46.15	
Total		Sample	639	431	505	52	1627
		Ratio(%)	39.27	26.49	31.04	3.20	100.00

Chi-square $p < .0007$

Note: The elderly who are with the following cases are deducted: no children (including adoption), domicile place is outer island and those who are living in relative's home or nursing institutions.

Source: the elderly Situation Survey conducted by the MOI in Taiwan, 2005.

The study then went further to compare the area features of the different four regions in Taiwan. We can find that, in the east, the elderly aged above 65 accounts for more than one fourth of the total population. Additionally, the percentage of the elderly being the bread-winner and the outward migration rate in the east are both the highest in Taiwan. Regarding the industrial structure, service industry is the mainstream in the four regions. In the north region, the ratio of serving in agriculture is lower than that of the other regions, this explains that there is financial difference in different regions. The study intends to explore that whether the elderly's life satisfaction will be affected by the higher outward migration rate in different regions and the elderly are not supported by family and forced to work or providing care for grandchildren.

Table 4. The comparison of population and industrial features in the four areas of Taiwan

	North	Middle	South	East
Total population (person) ¹	10,291,178	5,760,817	6,336,424	569,478
Population density (person/km ²) ¹	2,946.99	1,599.18	2,926.78	69.41
The elderly to total population (%) ¹	9.89	11.15	11.49	25.57
Average population per household (person/household) ²	3.39	3.40	3.16	2.94
Average disposable income per household (NT dollars) ²	980,604.37	761,393.44	761,261.15	661,621.48
The elderly to be the bread-winner to the total bread-winner(%) ³	11.18	14.20	14.14	18.89
Outward migration employment to total employment (%) ⁴	9.25	16.81	16.55	27.08
Net immigration ratio(%) ⁴	0.80	-0.37	-0.25	0.72
Agriculture (%)	2.38	14.42	12.17	19.32
Industry (%)	27.66	30.85	28.15	15.52
Service industry (%)	69.95	54.73	59.68	65.17

Note: The data of Penghu is excluded.

Source: 1. Department of Household Registration and Statistics, MOI, 2010; 2. Report on the Survey of Family Income and Expenditure, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2009; 3. Population and Housing Census, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2000; 4. Internal Migration Survey in Taiwan Area, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2007; 5. Industry and Commerce Census, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2000.

This paper concerns about whether the elderly people is happy during the process of aging, it is a more physical, practical and feasible to access by the elderly people's daily life experience. The objectives of the study include the following three aspects: 1. Exploring the relationship between the elderly's health, finance, social interaction, living burden and life satisfaction; 2. Understanding if the elderly's subjective life satisfaction could be increased through satisfying their living arrangement demand; 3. Compare the reasons that influence the elderly's life satisfaction in different regions, especially how living arrangement will impact on their life satisfaction. Meanwhile, exploring the issue helps us understand the elderly's living quality, which is essential when making the related policies. On the other hand, we also analyze if the elderly's living arrangement and life satisfaction is to be influenced by region difference. The results of the study would be useful for the government to make the related regional industrial policies, the elderly's welfare police and subsidy regulation.

Literature Review

The Definition of Life Satisfaction of the Elderly

Life satisfaction of the elderly is one of the dimensions to measure the concept of successful aging (Palmore, 2002). Successful aging is a complex process for the elderly people of adaptation. It's defined as: the elderly citizens can remain physical healthy, mental functioning, social active, financially secure. Besides, the elderly people having higher socioeconomic status, receiving adequate family support, being satisfied with one's living environment/condition, and staying in one's own home are crucial factors in achieving successful aging (Neuhaus and Neuhaus 1982; Baltes and Baltes

1990; Lamb and Myers 1999; Nussbaum et al. 2000; Palmore 2002; Collings 2001; Vaillant and Mukamal 2001; Chou and Chi 2002; Freund and Riediger 2003).

Studies of the life satisfaction often be measured with a scale or structured series of statement to indicate the satisfaction of the elderly with their health, housing, family, or with life as a whole (Neugarten et al., 1961). Larson (1978) argues that the quick assessments of life satisfaction obtained through surveys have in fact given us "little idea how this construct permeates ongoing daily experience". So, Wood & Johnson (1987) examine the life satisfaction through the comparison of quantitative and qualitative data on satisfaction with housing, family, spouse, self-esteem, health, friends and life as a whole. The conclusion is that quantitative approaches are of limited utility in studies of the quality of life, and that they are most appropriately viewed as supplementary to approaches employing qualitative data and analysis. However, considering about the low education or the healthy of the elderly people, some researcher think the single item questionnaire is a short, practical, feasible and easy to understand for the elderly people. Social scientists have already made use of single items to measure older people's perceived economic, health and mental health status, life satisfaction, morale, and happiness (Mangen & Perterson, 1982; Ctler,1982). This paper employs the data of the elderly Situation Survey by the MOI in Taiwan, 2005. The life satisfaction is a single item of the life satisfaction as a whole self-response by the elderly people.

The factors that influence life satisfaction of the elderly

Life satisfaction manifests itself in self-confidence, sociability, and feeling of competence and happiness. Therefore, life satisfaction should not be judged by achievement and ability.

Social support is one of the significant variables that affect the life satisfaction of the elderly, and many studies showed that they are positively and significantly correlated, i.e. when the elderly feels sufficient social support then they will have higher life satisfaction. Social support comes from friends' contact, family network and activity participation.

The relationship between the elderly's social support and life satisfaction is positive, which has been proved by the past research. Liu's research (1999) pointed that if the elderly who are with chronic diseases are married, live with their family, with good financial status and health condition usually have higher life satisfaction. Yeh (2004) research also proved that the following social support systems would have positive impacts on the elderly's life satisfaction: marriage, education, occupation, active daily life status, living arrangement, diet, transportation, and emotion.

Chen & Lin concluded that through the function of family support, the elderly's life satisfaction would be enhanced when they live with children. If the elderly's present and ideal living arrangements are both to live with children, this not only matches the society mainstream but also makes the elderly's life satisfaction be higher. The above research argued that the elderly's living with children would gain social support from family, this could have influence on their life satisfaction.

Health condition, living with children, and social welfare system will affect life satisfaction of the elderly, some researches discovered that it would be affected by demographic variables such as gender, age, martial statue and education and other variables such as attitude toward life and social life. Evans & Kelley (2004) find that women and men in formal marriages experience higher levels of life satisfaction than do people in other marriage status. The marital status, living arrangement, health condition, financial status, social support have significantly correlated relationships with life satisfaction, it is a common consensus among many researches.

The relationship between the elderly's regional difference of living arrangement and life satisfaction

Resources for urban and rural regions are different, even the social support services and the family support offered for the elderly are varied. This will certainly affect the life satisfaction among the elderly in different regions.

The elderly's living arrangement is to be influenced by regional financial factors. Chang & Lee(2004) conducted a survey to explore the factors that affect living arrangement based on the Chinese rural

elderly. For the factor of one-child policy and rapidly developed economy in China, a vast amount of rural youth migrated to the urban for working; this highly increased the possibility of the elderly's living alone and living with grandchildren. The results of the research indicated that the working out children increased the possibility for the elderly to live with grandchildren. Further, living with cross generation is to take care of the elderly's under aged grandchildren. If the elderly are with better financial status and have self-owned real estate, this may lead to a lower possibility for the elderly to live with children.

Makiwane & Kwizera (2006) evaluated the elderly persons' quality of life based on satisfaction with some major life domains including: general health; basic needs of food and housing; emotional well-being; environmental harmony and their satisfaction with financial and material possessions. The research found that in the rural regions of South Africa, for the youth had to go to the urban for working, the elderly were not able to live with children. In addition, if the youth were with poor financial status, they often ignore the elderly. In rural regions, if the elderly have to work, take care of grandchildren or be the bread-winner, their life quality is relatively worse.

Based on the above, regional economic development would have impacts on industrial structure and employment market. This would further bring influences on the employee migration and the elderly's living arrangement. In addition, family living arrangement is subjected to be influenced by the actual regional economic factors. The study argues that in Taiwan, the developed transportation fastens the movement of the labors. The external factors such as the prosperous economy and employment rate are expected to influence the elderly's living arrangement. Therefore, the study divides Taiwan into the north, middle, south and east regions based on the Regional Planning law and explores the regional factors that impact on the elderly's life satisfaction.

Hypotheses

The elderly's living arrangement and life satisfaction

Past research reported that living with children positively impact on the elderly's life satisfaction (Chen, 1993; Liu, 1999). Chen (2002) also argued that living with spouse or family, the elderly would acquire affectional and financial support so that their life satisfaction would be increased. In addition, Chen (1996) concluded that if the elderly live with their children or some important others, the support they gained from finance and daily life activities are more than that of the elderly's living alone. For those who take more support would have higher life satisfaction. Therefore, the study develops Hypothesis 1: If the elderly live with children, it would positively impact on their life satisfaction.

The elderly's living arrangement is influenced by the demographics (Tseng et al., 2006). Moreover, different elderly's living arrangement is various. The study argues that the elderly's actual living arrangement may not in accordance with their ideal one, so the study employed the accordance of deal and actual living arrangement to be the variable to evaluate their life satisfaction. Though living with children is the elderly's main living type presently, not each elderly like to live with others. This lead to the study's Hypothesis 2: There is positive impact on the elderly's life satisfaction when their ideal living arrangement matches the actual one.

Past research pointed that the elderly's income, financial status are positively related to their life satisfaction (Larson, 1978 ; Chen, 1999; Lai, 1998). If the ones aged above 65 are still the bread-winners, it may be caused by their poor financial status. Therefore, the study infers that the situation would have negative impacts on their life satisfaction. This lead to our Hypothesis 3: If the elderly still have to be a bread-winner after retirement, their life satisfaction would be lower.

Past research has proved that taking care of grandchildren would have positive influence on the elderly's life satisfaction (Wood & Robertson, 1976). The reason for elderly's to take care of

grandchildren is maybe from affective altruism. In northern Taiwan, double-income family is quite usual, the expense of child nursing is high, so the elderly have to provide help for taking care of their grandchildren. This may bring the elderly sense of achievement and thereby enhance their life satisfaction. Therefore, the Hypothesis 4 is: The elderly's life satisfaction would be higher if they provide assistance for taking care of grandchildren.

If real estate is self-owned by the elderly, this implies that they have higher autonomy. Tseng et al. (2006) reported that those elderly own real estate less live with their children. However, a lot of adult children depend on their parents and live with parents even they are married. This may distort the elderly's living arrangement and bring negative impacts on their life satisfaction. The study therefore develops Hypothesis 5 as follows: When the elderly have self-owned or spouse-owned real estate and live with children, it may bring significant negative impacts on their life satisfaction.

Past researches have found that the elderly's life satisfaction would be higher if they help to take care of grandchildren (Wood & Robertson, 1976). However, for the employment rate is lower in rural areas, the youth often move to urban areas for working, this makes the rural population ageing fast. If the rural elderly provide infant nursing for their out-working children, then the family becomes grandparents breeding family. If the elderly's children are out for working, they have to take the responsibility to take care of their grandchildren, this may cause the reduction of the elderly's life satisfaction (Makiwane & Kwizera, 2006). If the elderly aged above 65 are forced to be bread-winner and take care of grandchildren just because of their poor financial status, the double burden are inferred to bring negative impacts on their life satisfaction. This lead to our Hypothesis 6: When the elderly have to be bread-winner and take care of grandchildren, there is significant negative impact on their life satisfaction.

The relationship between area difference and the elderly's life satisfaction

The housing price in north Taiwan is high and the ratio of housing price to income is above 10, this brings heavy burden to the residents. For younger generation living with their parents may save housing cost. However, for egoistic reasons, the adult children are not willing to move out of their parents' house. This may twist the elserly's ideal living arrangement and have negative impacts on their life satisfaction. Therefore, the study develops our Hypothesis 7: In the north region, for the housing price is high, if the elderly have self-owned or spouse-owned real estate and live with their children, it would have significant negative impacts on their life satisfaction.

In rural areas, for working out of the areas, the second generation has to send the third generation to the elderly for nursing. The elderly in the cross-generation have to shoulder a relatively heavy burden than that in the other three-generation families, so they would have relative lower life satisfaction. In addition, based on the past research, the financial status of the elderly in the cross-generation family is relative worse; they have to pay for the grandchildren's tuition, entertainment and daily expenses. This may lead to their relative lower life satisfaction (Burnette, 1999; Fuller-Thomson et al., 1997; Rodger & Jones, 1999). Therefore, the study develops our Hypothesis 8: In the high outward migration regions, the elderly have to take care of grandchildren and be bread-winner, this may significantly lower their life satisfaction.

Empirical Model and Variables

Life Satisfaction Regression Model

The study aimed to investigate the effect of living arrangement and reciprocal support on life satisfaction of the elderly, and the subjects were the elderly above 65 years old. This study used the regression model of life satisfaction of the elderly to do estimation as follows:

$$LS_i = f(X_i, R_i, S_i) \dots\dots\dots(1)$$

LS_i : Life satisfaction of the elderly. The scale was 1 ~ 5, the most satisfied was 5 and the least satisfied was 1 and so on.

X_i : Social demographics characteristics, financial and health condition of the elderly.

R_i : The living arrangement of the elderly.

S_i : The social support type of the elderly.

Explanatory Variables

Financial status

Past research (Larson, 1978; Lai, 1998; Chen, 1996) has found that among the social and financial status variables, income and financial status are significantly and positively related to the elderly's life satisfaction. Therefore, the study takes the variables like the savings or real estate owned by the elderly or their spouse, self-evaluated sufficient living expense and being bread-winner to analyze if financial status will influence the elderly's life satisfaction.

Health condition

Health condition has positive impacts on the elderly's life satisfaction (Larson, 1978; Lai, 1998; Bowling, 1990). Recently, most of the research mainly utilized activities of daily living (ADLs) 1 and instrumental activities of daily living (IADLs) 2 to be the indicators to evaluate the elderly's health condition. In addition, the results of self-evaluated health condition and number of disease can also be utilized to assess the elderly's health condition (Brown et al., 2002).

The study employed the elderly's self-evaluated questionnaire results conducted by the Ministry of the Interior in 2005, rather than the variables like ADLs and IADLs to avoid the problem of collinearity.

Living arrangement

If the elderly live with their spouse or family, they would be supported through affection and finance and thereby increase their life satisfaction (Chen, 1994; Chen, 2002).

The ratio of living with children is 61.22%, which indicates that the type is the elderly's preferred living arrangement. However, there is still 38.78% of the elderly who preferred not to live with their children. This reflects that the mainstream living arrangement may not be the elderly's ideal living arrangement. Accordingly, the study divided the elderly's ideal and actual living arrangement into four types (see Table 5). X1: Both of the elderly's ideal and actual living arrangement are living alone; X2: Both of the elderly's ideal and actual living arrangement are living with children; X3: The ideal living arrangement is living alone, while the actual one is living with children; X4: The ideal living arrangement is living with children, while the actual one is living alone (the base group). The study anticipated that the elderly would have higher life satisfaction when their ideal living arrangement is in accordance with their actual one.

¹Activities of daily living (ADLs) : The Barthel Index is the most popular instrument used to evaluate activities of daily living, which includes ten items like feeding, bathing, grooming, dressing, bowls, bladder, toilet use, transfers, mobility and stairs. Each item is classified into 2-4 levels based on independent, unable, and dependent. Each level accounts for 5 scores and maximum score is 100. For example: 0-20 is fully dependent; 21-60 is severe dependent; 61-90 is middle dependent; 92-99 is slightly dependent, and 100 is fully independent. 60 is the key point, for the standard of home care services in Taiwan National Health Insurance is based on the Barthel Index scored under 60.

²Instrumental Activities of Daily Living (IADLs): Utilizing Instrumental Activities of Daily Living Scale to be the evaluating tool, which includes the following 8 items: using telephone, shopping, cooking, do laundry, taking transportation, self-taking medicine and financial management. Each item is divided into 3-5 levels and evaluated by dichotomy, which is 1 or 0.

Table 5. The ideal and actual living arrangement of the elderly

		Ideal living arrangement type	
		Living alone or with spouse only	Living with children
Present living arrangement type	Living alone or with spouse only	X1	Base team
	Living with children	X3	X2

Note: The “living with children” type including living with children’s spouse and grandchildren.

Social support

There exists significant and positive relationship between the elderly’s social support and life satisfaction. Social support not only includes the elderly’s perceived support of acceptance but also contains the social support that the elderly could provide for the others (Jou & Chuang, 2000). Therefore, the study take the roles that the elderly played in social support such as provider, receiver and interactor to be the variables to evaluate the elderly’s social support.

A. Provider: Variables of cover taking care of grandchildren and providing financial support for children.

B. Receiver: Variables include accepting children’s feedback and government or other’s support.

C. Interactor: Participating in the social activities.

Data and Descriptive Statistics

Data Source

To investigate living arrangement and life satisfaction of the elderly, this study used data of the elderly Situation Survey by the MOI in Taiwan, 2005. That data includes current circumstance, social support, health, financial condition and needs for social welfare of people above 50 years old. The statistics of the data provide references for the formulation of related welfare policy of Ministry of the Interior or other institutions. This study used random sampling, the reliability was above 99%, sampling error was under 2%, and the number of sample was set 5,815. This study utilized Computer Assisted Telephone Interview (CATI) to do survey, and the personal interview period was Aug. 31 to Sep. 30, 2005. The data had complete demographic characteristics, which were sufficient for the analysis of the issue in this study.

The Definition

The Elderly

Since “Welfare Regulation of Senior Citizen” refers to the elderly as “people above 65 years old”. The purpose of this study is to provide references for the regulation of related policies of the government, and therefore in this study it set the definition of the elderly as people above 65 years old.

From the total sample of 5,815, the study only selected “ordinary people”, “residents”, “non veteran (family dependents)”, “non aboriginal people” from those who were not living in the nursing institutions. Additionally, the single elderly and the elderly with no children are not appropriate to be the sample about the issue of cross-generation’s mutual care. After eliminating, the final sample turned out to be 4,403, of which, the study selected the elderly aged above 65, and the final sample size is 1,514.

Life satisfaction

Life satisfaction refers to personal subjective adaptation, happiness, satisfaction, and peace towards life; it directly reflects the satisfaction in different life layers. In the study, we set the elderly’s

subjective “whole life satisfaction” to be the dependent variable of the life satisfaction regression model.

Regions

The study divided Taiwan into the north, middle, south and east regions based on our Regional Planning Law. The north region includes: Taipei City, New Taipei City, Taoyuan County, Keelung City, Hsinchu County, Hsinchu City, and Ilan County. The middle region covers: Taichung City, Nantou County, Yunlin County, Miaoli County, and Changhua County. The south region comprises: Tainan City, Kaohsiung City, Chiayi County, Chiayi City, and Pingtung County. The east region contains: Taitung County and Hualian County.

Descriptive statistics

The study firstly utilized descriptive statistics to analyze the elderly’s demographics in total sample and different regions. In order to understand the regional difference, we used the “Independent sample Z test”³ to understand if there exists any difference in different areas in terms of the variables. Please refer to Table 6 for reference.

Mostly, the elderly live with their children or grandchildren (the ratio is about 42.18%), which indicates that the type is the main type of the elderly’s living arrangement. In regard to the elderly’s ideal and real living arrangement, the ratio of ideal meets reality accounts for about 76.63%; on the contrary, those who are not satisfied with ideal and reality explain for about 23%. In addition, the study is going to deeply explore that whether the elderly’s ideal and actual living arrangement would have any impacts on their life satisfaction.

Regarding the regional difference of the elderly’s living arrangement, in the north, the ratio of living alone or with spouse only is significantly lower than that of the average in Taiwan (z value is -2.39). In addition, in the north, the percentage of living with children is significantly higher than that of the average in Taiwan (z value is 2.39). Accordingly, the elderly in the north mostly live with their children or grandchildren.

On the other hand, the average number of children in rural area is significantly higher than that of the urban area (z value is -5.196). Notably, the ratio of “both the ideal and real type is to live with children” is significantly lower than that of the average in Taiwan (z value is -2.00). It is probably that, in the east, the elderly were forced to live alone because their children went out for working.

In terms of the regional difference of the elderly’s health condition, the elderly in the south region are found to have lower ability of utilizing activities of daily living and self-evaluated good health. The ratio of the two results is significantly lower than the average in Taiwan (z value is -1.86 and -1.78). This implies that the elderly’s health condition in the south region is significantly worse.

In the aspect of financial status, the elderly’s main financial resources mostly are from working, business income, savings, retirement pension or investment, the ratio is 40.13%. Those who aged above 65 are still the bread-winners only explained 7.33%.

Regarding regional differences, the ratio of the middle elderly being the bread-winner is significantly higher than the average in Taiwan (z value is 2.04). In the north, the percentage of the elderly with self-owned or spouse-owned real estate is significantly higher than the average in Taiwan (z value is 2.64), while the ratio of the south elderly is significantly lower than the average in Taiwan (z value is -3.18). The industrial economy in the north is superior to the other regions in Taiwan and the average income is higher. If the financial difference will have impacts on the rural and urban elderly’s life satisfaction, the study is going to explore further.

The study classified the elderly’s social support roles into the following three kinds: provider, receiver, and interactor. First, in the aspect of receiver, the ratio of that the elderly’s main financial

³ If the variable is consecutive, we used mean difference test; otherwise, we employed percentage difference test. In addition, we conducted regional difference test based on the total sample. If the Z value is significant and positive, it means that the ratio of the variable in the region is significantly higher than that of the total sample; on the contrary, if the Z value is significant and negative, it represents that the ratio of the variable in the region is significantly lower than that of the total sample.

resources are from government or other's support is about 16.83%, from children's feedback is about 43.04%. Second, from the perspective of provider, the ratio of supporting children with money is about 9.31%; the percentage of taking care of grandchildren is about 15.45%. Finally, in terms of interactors, those who participate in social activities accounts for 48.18%.

In the regional difference of social support, the ratio of that the elderly accept government or other's subsidy in the south and east is significantly higher than the average in Taiwan (z value is 2.62 and 2.34); while the ratio of that the elderly accept the government support is significantly lower in the north. Again, the study stresses that the elderly in the south and north are weaker in financial status, they relatively rely on the social support. The ratio of that the elderly taking care of grandchildren is significantly lower than the average in Taiwan (z value is 1.69 and -1.88), the study infers that it's because that the elderly's children are out for working so the elderly have no opportunity to be with their grandchildren. The study is going to explore if the result will influence the elderly's life satisfaction.

Table 6. The analysis of descriptive statistics and average between total sample and samples in the different regions

			Total sample		North region			Middle region		South region		East region	
			Mean	S.D.	Mean	Z value (1)	Mean	Z value (2)	Mean	Z value (3)	Mean	Z value (3)	
Living arrangement type	Present status	Living alone or with spouse only	0.4218	0.4940	0.3651	-2.39 **	0.4478	0.96	0.4602	1.49	0.5192	1.53	
		Living with children	0.5776	0.4941	0.6332	2.39 **	0.5496	-0.96	0.5376	-1.49	0.4615	-1.53	
	Ideal and real	Both are to live alone or with spouse only	0.2911	0.4544	0.2632	-1.28	0.2875	-0.12	0.3269	1.49	0.3077	0.35	
		Both are to live with children and grandchildren	0.4752	0.4996	0.5329	2.42	0.4478	-0.94	0.4366	-1.44	0.3269	-2.00 **	
Demographics	Widowed or widowered		0.3399	0.4738	0.3487	0.40	0.3410	0.06	0.3204	-0.76	0.3846	0.77	
	Female		0.4640	0.4989	0.4622	-0.06	0.4682	0.18	0.4645	0.04	0.4231	-0.46	
	Number of children (person)		4.0423	1.5264	3.8780	-2.11 **	4.2134	2.06 **	4.1258	1.11	3.875	-0.72	
Health situation	Activities of daily living (ADLs)		0.9175	0.2752	0.9293	0.98	0.9237	0.51	0.8882	-1.86 *	0.9423	1.10	
	Self-evaluated to be healthy		0.7254	0.4465	0.7796	2.62 ***	0.6845	-1.56	0.6817	-1.78 *	0.7500	0.61	
Financial status	Self to be the main financial resource		0.4013	0.4903	0.4260	0.88	0.4224	0.72	0.3613	-1.58	0.3462	-0.97	
	Being bread-winner		0.0733	0.2607	0.0592	-1.15	0.1043	2.04 **	0.0688	-0.32	0.0385	-0.93	
	Self (or spouse) owns no savings or real estate		0.1426	0.3498	0.1069	-2.18 **	0.1527	0.52	0.1785	1.91 *	0.1538	0.28	
	Self-owned or spouse-owned real estate		0.2502	0.4333	0.3059	2.64 ***	0.2519	0.09	0.1785	-3.18 ***	0.2115	-0.56	
	Self-considered to have sufficient living expenses		0.7710	0.4204	0.7928	1.13	0.7634	-0.26	0.7527	-0.77	0.6923	-1.09	
Social support	Receiving	From other's help	0.1683	0.3743	0.1217	-2.67 ***	0.1603	-0.37	0.2215	2.62 ***	0.2885	2.34 **	
		From children's feedback	0.4304	0.4953	0.5230	0.94	0.4173	0.44	0.4172	-0.48	0.3654	-0.82	
	Providing	Supporting children with money	0.0931	0.2906	0.0987	0.34	0.1628	-1.15	0.0989	0.29	0.1538	1.08	
		Taking care of grandchildren	0.1545	0.3615	0.1809	1.51	0.1628	0.42	0.1226	-1.69 *	0.0577	-1.88 *	
	Interaction	Participating in activities	0.4818	0.4998	0.5132	1.33	0.4326	-1.71 *	0.4774	-0.14	0.5000	0.39	
	Number of Observations.			1,514		607		392		464		51	

***Significance level<.01 ; ** Significance level<.05 ; * Significance level<.01 ; The unmarked ones are insignificant.

Empirical Results

Total sample

The study utilized hierarchical regression model to analyze the elderly's life satisfaction (see Table 7). First, from model 1, the result of that the elderly's present living arrangement is to live with children, they would have more support from family and their life satisfaction is then higher. Therefore, hypothesis 1 is supported (If the elderly live with children, it would positively impact on their life satisfaction).

From model 2, the result of that the elderly's ideal and actual living arrangement are both to live alone or with spouse have no significant impacts on the elderly's life satisfaction. While the variable of "the elderly's ideal and actual living arrangement are both to live with children" has no significant positive impact on their life satisfaction. In other words, even the elderly's ideal living arrangement is carried out, they still have to live with children so that their life satisfaction would be increased. Therefore, hypothesis 2 is partly supported (There is positive impact on the elderly's life satisfaction when their ideal living arrangement matches the actual one). The study suggests that the government should encourage the elderly to live with children.

If the elderly are with good health condition and financial status, there are significant and positive impacts on their life satisfaction. And this would also increase their independence in daily activities and finance and reduce their dependence on family or the others. Past research (Lai, 1998 ; Larson, 1978 ; Chen, 1996) reported that if the elderly are in good financial status and health condition, they would have higher life satisfaction. Meanwhile, those who have to be bread-winner in the family would have significant and negative impacts on the elderly's life satisfaction. Those who aged above 65 still have to be the bread-winner would have inferior financial status and thereby bring negative impacts on their life satisfaction. Therefore, hypothesis 3 is supported (If the elderly still have to be a bread-winner after retirement, their life satisfaction would be lower).

In the aspect of social support, past research reported that if the elderly help to take care of grandchildren, it would have positive impacts on their life satisfaction (Wood & Robertson, 1976). The elderly would obtain sense of achievement and contribution if they help to take care of grandchildren. Therefore, hypothesis 4 is supported (The elderly's life satisfaction would be higher if they provide assistance for taking care of grandchildren).

Meanwhile, the elderly participate in social activities would increase their opportunities to interact with the social network and obtain affection support from out of the family. Therefore, participating in social activities would have positive impacts on the elderly's life satisfaction. This is in accordance with the results of the past research (Horowitz & Vanner, 2010).

From interaction 1 of the model results: When the elderly have self-owned or spouse-owned real estate and live with children, it would have significant and negative impacts on their life satisfaction. Past research indicated that when the elderly own real estate, they usually prefer not to live with children (Tseng et al., 2006). When the elderly possess real estate and live with children, their incentive is probably to decrease the housing cost (ex. housing loan or rent fee) through living together with children. However, for the elderly's "altruistic" consideration, it may make the younger generation too much rely on the elderly and thus decreased their life satisfaction. Therefore, hypothesis 5 is supported (When the elderly have self-owned or spouse-owned real estate and live with children, it may bring significant negative impacts on their life satisfaction).

From the result of interaction 2, when the elderly have to be the bread-winner and take care of their grandchildren, it would have significant and negative impacts on their life satisfaction and bring double layer burden on them. The elderly probably have no retirement pension, savings or children's feedback; this may make them have insufficient living expenses. Moreover, the burden comes from taking care of the third generation makes the aged elderly are not able to retire and this negatively impact on their life satisfaction. Therefore, hypothesis 6 is supported (When the elderly have to be bread-winner and take care of grandchildren, there is significant negative impact on their life satisfaction).

The analysis of regional difference

From the results of interaction 3 in model 3, we can find the fact that in the north, the elderly have self- or spouse-owned real estate and live with children would have negative impacts on their life satisfaction. For the average housing cost is high, the residents' burden are heavy so that the elderly's ideal living arrangement is twisted and thereby decrease their life satisfaction. Therefore, hypothesis 7 is supported (In the north area, for the housing price is high, if the elderly have self-owned or spouse-owned real estate and live with their children, it would have significant negative impacts on their life satisfaction).

Moreover, the result of interaction 4 : "In the middle region, the elderly have to be the bread-winner and take care of grandchildren" have be negative impacts on the elderly's life satisfaction. In the areas of severe outward migration, for the youth have to go out for working, if the elderly have to be the bread-winner and take care of grandchildren, the family is probably a cross-generation family. This would distort the elderly's living arrangement and decrease their life satisfaction. In the middle Taiwan, the percentage⁴ of the outward migration employment to the total employment population and the elderly aged above 65 being the bread-winner to the total bread-winner population are the highest⁵. The form that comes from leaving the third generation to the elderly' care is different from the ordinary grandparents breeding family. It negatively impacts on the elderly' s life satisfaction. Therefore, hypothesis 8 is supported (In the high outward migration areas, the elderly have to take care of grandchildren and be bread-winner, may significantly decrease their life satisfaction).

⁴ Based on The Population and Housing Census, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2000 (see Table 4), the percentage of the outward migration employment to the total employment in the middle is 16.81%, 16.55% in the south, and 9.25% in the north.⁸

⁵ According to the Internal Migration Survey in Taiwan Area, Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C., 2007, the percentage of the elderly aged above 65 to be the bread-winner to the total bread-winner in the middle is 14.20%, 14.14% in the south, and 11.18% in the north.

Table 7. The adjusted results of the elderly's life satisfaction regression model

		Model 1		Model 2		Model 3		Model 4		
		Coefficient	T value	Coefficient	T value	Coefficient	T value	Coefficient	T value	
Intercept		2.2731	41.11 **	2.2980	39.48 **	2.2968	39.45 **	2.2944	39.46 **	
Present living arrangement: Living with children		0.1081	2.69 **	—	—	—	—	—	—	
Ideal living arrangement is in accordance with the present one	Both are living alone	—	—	-0.0289	-0.63	-0.0286	-0.62	-0.0292	-0.64	
	Both are living with children	—	—	0.0994	2.36 *	0.0997	2.36 *	0.0993	2.36 *	
Self-evaluated to be healthy		0.3748	9.97 **	0.3777	10.05 **	0.3786	10.07 **	0.3814	10.16 **	
Financial status	Self or spouse owned real estate	0.1280	2.40 *	0.1246	2.39 *	0.1257	2.45 *	0.1253	2.40 *	
	Self considered to have sufficient living expenses	0.4970	12.21 **	0.4975	12.23 **	0.4970	12.22 **	0.4991	12.29 **	
	Being bread-winner	-0.1556	-2.30 *	-0.1536	-2.27 *	-0.1533	-2.27 *	-0.1534	-2.28 *	
Social support	Providing	Supporting children with money	-0.0040	-0.07	-0.0009	-0.02	0.0026	0.05	0.0013	0.02
		Helping to take care of grandchildren	0.1044	2.18 *	0.1022	2.14 *	0.1028	2.16 *	0.1017	2.14 *
	Receiving	Children feedback with money	0.0168	0.44	0.0097	0.25	0.0114	0.30	0.0116	0.30
		Government or other's help	-0.0446	-0.90	-0.0466	-0.94	-0.0462	-0.93	-0.0452	-0.91
Interacting	Participate in activities	0.1079	3.25 **	0.1061	3.20 **	0.1050	3.16 **	0.1042	3.14 **	
Interaction 1 : Self or spouse owned real estate* living with children presently		-0.1756	-2.47 *	-0.1658	-2.44 *	—	—	-0.1703	-2.51 *	
Interaction 2 : Being bread-winner* taking care of grandchildren		-0.3966	-1.97 *	-0.4116	-2.04 *	-0.404	-2.00 *	—	—	
Interaction 3 :	Interaction1* north area					-0.2122	-2.71 **			
	Interaction 1*middle area					-0.1595	-1.60			
	Interaction 1*south area					-0.0867	-0.82			

Table 8. The adjusted results of the elderly's life satisfaction regression model (continued)

		Model 1		Model 2		Model 3		Model 4	
		Coefficient	T value						
Interaction 4	Interaction 2* north area	–	–	–	–	–	–	-0.0575	-0.18
	Interaction 2*middle area	–	–	–	–	–	–	-0.9454	-3.30 **
	Interaction 2*south area	–	–	–	–	–	–	0.2178	0.49
F value		36.97**		34.35**		29.90**		30.35**	
Adj R-Sq		0.2220		0.2228		0.2227		0.2254	
Number of Observations.		1,515							

Note:

1. Coefficient of significance : **Significance level <0.05 ; *Significance level<0.1 ; The unmarked ones are insignificant.
2. Please refer to the annotation for the model variables of the elderly's life satisfaction.

Conclusions

The study explores the elderly's finance status, health condition, and social support on their life satisfaction. We employed hierarchical life satisfaction regression models to test the eight hypotheses; we also analyze the factors that influence the elderly's life satisfaction from the perspective of regional difference.

The contribution of the study mainly includes the following three aspects: First, we explored whether the elderly's ideal living arrangement matches their actual one will have any impacts on their life satisfaction; Second, we investigated the difference between the elderly's living arrangement and life satisfaction from the standpoint of different local economy and the employment; Third, we analyzed in the north, if living with children would have any impact on the elderly's life satisfaction for the real estate is priced high in the north region in Taiwan.

The important findings of the study are described as the following:

1. In the Chinese society, the phenomenon that the elderly tend to live with their children has greater impacts on their life satisfaction than the one that caused by the equivalence of ideal and reality in life.

Based on the theory of needs, if the elderly are respected to have their ideal living arrangement, it would have positive impacts on their life satisfaction. Therefore, it would be beneficial on their life satisfaction when the elderly's ideal and actual living arrangement are equivalent. However, in the Chinese society, most of the elderly tend to live with their children; three-generation family is their preferable living style. Even living with children is not the elderly's ideal arrangement; they are still satisfied with the style. On the other hand, it is not significant on their life satisfaction when the elderly's ideal and actual living type are both living alone. It is probably that even the elderly prefer to live alone; they are not able to obtain support and care from their family, so the result is not significant.

2. There exists differences among the four regions because the outward migration employment and the high priced real estate have significantly impacted on the elderly's life satisfaction.

In Taiwan, for the housing price and consumer price index in the north are much higher than that of the other region. This makes the younger generation have to live their parent's house to share the living cost and thereby distorted the elderly's ideal living arrangement and life satisfaction. Further, to enjoy a life of leisure in the old age is the most elderly's ideal living arrangement type, however, in the middle, some of the elderly have to take care of their grandchildren because their children are out for working. In addition, for those who are with worse financial status, the elderly have to be the breadwinner of the family. Taking the burden of caring and finance, the elderly have to face the unfavorable influence on their life satisfaction. Therefore, the elderly's life satisfaction is significantly influenced by the financial status in different regions.

In terms of policy making, first, for the obedience in the light of Chinese tradition and the elderly's life satisfaction could be enhanced through providing care for their grandchildren, the government should provide tax reduction as incentives to encourage the co-residence of the 2 generations. Second, for the real estate in the north is priced high, if grown-up children live with the parents who own real estate, it would have negative impacts on the elderly's life satisfaction. Therefore, the government should reimburse the youth to buy real estate and help them to live independently, so that the disturbance or distortion on their parents' living arrangement would be reduced. Third, if the elderly have to be the breadwinner and provide care for their grandchildren, the double labor service burden even makes negative impacts on the elderly's life satisfaction. The situation is especially obvious in the area of outward migration employment--- the middle region. Therefore, we suggest that the government should provide financial subsidy or infant-caring service for the grandparents-breeding family so that the elderly's life satisfaction would be enhanced.

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Life satisfaction is a bit more complex than it first seems. More than just happiness, we explore the contributing factors that lead to a life well lived. The reason this simpler version of the theory fails to truly capture life satisfaction is that it could inappropriately indicate life satisfaction in a person who is only temporarily or spontaneously happy but does not make any effort to consider how her life is going (Suikkanen, 2011). There's certainly nothing wrong with being spontaneously happy, but it takes more than just feeling momentarily happy to have life satisfaction! Research and Studies. Studies on the variance in life satisfaction between nations have shown that living conditions exert a strong influence over average life satisfaction. The World Economic Forum is an independent international organization committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional and industry agendas. Incorporated as a not-for-profit foundation in 1971, and headquartered in Geneva, Switzerland, the Forum is tied to no political, partisan or national interests. Similarly, women with a high school education in Ethiopia have a TFR of 1.3. Relationship between Female Education and Fertility: Ethiopia, Ghana and Kenya. Data from Demographic and Health Surveys in Ethiopia, Ghana and Kenya [1988-2011].