

**ECONOMICS***Sociology*

Samsudin, S., Abdullah, N., Ismail, N. S. A., Hassan, K., & Ahmad, U. A. (2019). Growing old at own home: A study among pre-elderly adults in Peninsular Malaysia. *Economics and Sociology*, 12(1), 115-124. doi:10.14254/2071-789X.2019/12-1/6

## GROWING OLD AT OWN HOME: A STUDY AMONG PRE-ELDERLY ADULTS IN PENINSULAR MALAYSIA

**Shamzaeffa Samsudin,**  
*Universiti Utara Malaysia*  
E-mail: shamzaeffa@uum.edu.my

**Norehan Abdullah,**  
*Universiti Utara Malaysia*  
E-mail: norehan@uum.edu.my

**Nur Syakiran Akmal Ismail,**  
*Universiti Utara Malaysia*  
E-mail: nsai@uum.edu.my

**Kalthun Hassan,**  
*Universiti Utara Malaysia*  
E-mail: kalthun@uum.edu.my

**Ummu Atiyah Ahmad,**  
*Universiti Utara Malaysia*  
E-mail: atiyah@uum.edu.my

Received: July, 2018  
1st Revision: October, 2018  
Accepted: February, 2019

DOI: 10.14254/2071-789X.2019/12-1/6

**JEL Classification:** J14

**ABSTRACT.** The study of changes and choices of living arrangements among older persons has been a key element of demography and sociology of the family. While many studies focus on the elderly respondents in understanding this matter, our aim is to seek answers from the pre-elderly adults concerning their preferred old-age living arrangements and analyse the factors affecting the choice. A multistage sampling technique was used in selecting the respondents aged 40 to 59 years from Peninsular Malaysia. The total of 1,153 respondents were interviewed face-to-face using a structured questionnaire and it was found that 83.8% of the respondents prefer growing old in their own homes. From the probit model, it suggests that age and household size have negatively influenced the likelihood of the elderly to live in their own homes while being a male has the opposite effect. Those who are married or divorced, at work, earn more than RM15,000 a month and have formal education are more likely to prefer to grow old in their own homes as compared to other alternatives. Understand the choices of the pre-elderly groups are deemed vital for early intervention. A comprehensive support system is needed to endorse the popular choice of independent living at old age.

**Keywords:** Living arrangement, ageing population, pre-elderly adults.

### 1. Introduction

Ageing population is a global phenomenon that has received massive attention in many countries. According to the Department of Statistics of Malaysia (DoSM), as of 2018, the population of Malaysia is estimated to be around 32.4 million with the ratio of males-females being at 1.07. While the proportion of people aged 14 years and below has been declining, those aged 65 years and over has been showing the opposite trend over the years. The fraction of those below 15 years old dropped by 0.3 percentage points from 24.1 percent in 2017 to 23.8 percent in 2018 while for those aged above 64, there was a 0.2 percentage point increase to 6.5 percent of the total population in 2018. The median age has also increased by 0.3 percentage point to the level of 26.8 years in that year (Department of Statistics Malaysia (DoSM), 2018).

The percentage of old age people in Malaysia is increasing significantly and may reach up to 7.2 percent in 2020 and 14.5 percent in 2040. The median age is also expected to increase to 38.3 years in 2040 (Department of Statistics Malaysia (DoSM), 2016). The decline in fertility and mortality rates coupled with an improvement in life expectancy due to economic development and advances in healthcare have contributed to this composition too. According to the 2018 data by DoSM, the life expectancy at birth in Malaysia is 72.7 for male and 77.6 for female which gives Malaysia the World Life Expectancy ranking of 71. Potential consequences shaped as fiscal and social challenges from these trends can be substantial. It has been already widely discussed that Malaysia should be made ready to face the implications of the ageing society. In facing all of these upcoming challenges, we have to understand aspirations and expectations of the elderly. Despite being economically inactive, they cannot be denied of their rightful welfare. As our loved ones age, at some point in time, even daily tasks like bathing or cooking can be challenging. Therefore, some may decide to live with others while some prefer to grow old in their own homes despite limitations due to many reasons. Regardless of the choices made, we need a comprehensive support system that could better respond to their needs. Therefore, understanding living preferences of the current generations is important.

While many studies focus on the elderly group in understanding this case better, our aim is to find answers from the pre-elderly adults who are aged between 40 to 59 years today. Recognizing their preferences at an early stage may elicit instant adjustments by relevant parties as these preferences may differ from those of the previous generations (Munsur et al., 2010). The next section of this study explains the methods employed, followed by the findings of the research and their discussion. The final section concludes the study with several recommendations to better serve the needs of the elderly in terms of their preferences in living arrangements.

## 2. Literature review

The preferences over living arrangement at old-age can be endogenous and potentially influenced by many external factors. Previously, the western family arrangement which is governed by a nuclear family structure, may differ to that of an Asian arrangement which is dominated by extended families or multigenerational households. For example, in Bangladesh and India, the responsibility for welfare of the elderly depends on their adult children and the state has less obligation in providing care for them (Munsur, Tareque, & Rahman, 2010; Samantha, Chen, & Vanneman, 2015). However the trend is now moving towards the western model. Due to globalization and economic transformation, many adults now have migrated from rural to urban areas which would consequently leave their elderly parents behind to fend for themselves without their support. This outcome contributes to the decline in intergenerational co-residence (Chyi & Mao, 2012; Hoi, Thang, & Lindholm, 2011). Despite this development, elderly parents in Asia may still prefer to live with their children or family members (Alavi, Sail, Idris, Samah, & Omar, 2011; Chen & Chen, 2012; Kao, Chang, Huang, Tsai, & Chen, 2013; Sereny, 2011).

Besides culture and traditions, other factors that may influence living arrangement of the pre-elderly are gender, health, socioeconomic status and household size, and composition. In general, older women are more vulnerable than older men in many aspects. They tend to live with their extended family (Mba, 2007). There have been studies that show that older women have a higher probability to live with their adult children or other family members, than older men due to health and economic constraints (Knodel & Ofstedal, 2003; Zimmer, 2005). Despite the conventional view of women being more vulnerable than men when they are older, a study by Knodel and Ofstedal (2003) contradicted that view by establishing that older women are not

always at a disadvantage when compared to men. In that, further studies within a specific country is crucial in displaying the difference in the probability of the pre-elderly living with their children or other family members due to health and economic constraints.

Health constraints may affect the living arrangement of the elderly as they require support to perform daily tasks. A study by Zimmer (2005) in China found that functional limitations are strongly associated with living arrangements other than types of health problems. Still on the discussion on the Chinese setting, Sereny (2011) found that the disabled elderly are more likely to live with their children. It is evident that the effects of health status tend to be underestimated during interview due to attrition or proxy interview (Brown et al., 2002). Underestimation may also occur as the pre-elderly adults may have a low health status which may affect them to be institutionalized. A study on elderly Finns found that health capabilities are associated with functional difficulties which later determines institutionalization (Martikainen, Nihtilä, & Moustgaard, 2008).

People with a high socioeconomic status and possesses great resources in terms of family care are more likely to opt to living independently than with a family member. By using logit regression on the elderly single individuals living arrangement, Bishop (1986) found that the likelihood of the elderly to live independently increases with income. Similar finding was found in a study using the Malaysian households data which showed that elderly who were economically active and having received at least primary education were least likely to co-reside with an adult child (Mohd, Senadjki, & Mansor, 2017). Cheng, Liu, Zhang and Zhao (2018), also found a positive overall effect of pension income on independent living among the Chinese. However, a study by Chen and Chen (2012) on the elderly in Taiwan discovered that the effect of socioeconomic status is indefinite. The elderly with high socioeconomic status prefer to either live independently or with their children. Studies have found that social support has somewhat influenced the decision made by the elderly. While studies found that adequate social support from family or related authorities increases the likelihood of living independently or with their spouse (Chen & Chen, 2012; Lai, 2005), a study by Alavi et al. (2011) found that Malaysian elderly prefer to live with their children while expecting material and social support from their adult children, relatives, neighbours, and friends. Traditionally, in Asian culture, a great number of children signifies prosperity. The larger the family are, the greater the likelihood that the elderly will co-reside with their children, especially with their sons as the males are usually dominant in making household decisions.

### **3. Methodological approach**

#### ***Data and sampling design***

A total of 1,153 respondents aged between 40 to 59 years were interviewed face-to-face using a structured questionnaire between the duration of July 2015 until December 2015. They were selected from three economic corridors in Peninsular Malaysia, namely Iskandar Malaysia in Southern Johor (IRDA), Northern Corridor Economic Region (NCER) and East Coast Economic Region (ECER). Each corridor has a specific set of strategies and policies in promoting socioeconomic development. The sample was drawn using multistage sampling technique and the size from each cluster was predetermined based on calculations suggested by Sekaran (2003). In each corridor, we stratified districts into small and big districts based on the number of populations. Next, we randomly selected at least one district from each stratum. Finally, we utilized snowball sampling in obtaining respondents that fall within the range of 40 to 59 years of age. Out of 1,153 respondents, a total of 1,136 responses have no missing values in all of the variables used in the empirical analysis. Table 1 shows the descriptive statistics of variables used in this study.

Table 1. Descriptive statistics of dependent and independent variables

Variables	Definition		*Mean/ Percentage
<b>Dependent variables</b>			
<i>live</i>	Preferred living arrangement at old-age	1 - Living in own home; 0 - Other alternatives (Living with children/ families /relatives/friends/formal institutions/old folks home/ <i>pondok</i> */other informal institutions. *refers to religious institution.	84.0 16.0
<b>Independent variables</b>			
<i>age</i>	Age	Age (years)	*48.61
<i>male</i>	Gender *Female as reference variable	Female Male	52.4 47.6
<i>married widow(er) divorced</i>	Marital status *Never married as reference variable	Never married Married Widow Divorced	5.6 82.7 8.1 3.6
<i>self govt pvt</i>	Main economic activity *Unemployed as reference variable	Unemployed Self –employed Government Private	16.9 30.3 32.0 20.8
<i>inc1 inc2 inc3 inc4 inc5</i>	Monthly household Income (RM) *income less than RM1000 as reference variable	<RM1000 RM1001-RM3000 RM3001-RM5000 RM5001-RM10000 RM10001-RM15000 >RM15000	11.4 44.6 26.1 13.1 3.3 1.5
<i>edu1 edu2</i>	Highest education level *No formal education as reference variable	No formal education Primary/secondary school/certificates/diploma; First degree and above	12.6 71.8 15.6
<i>save</i>	Saving	Do you save every month? No Yes	37.2 62.8
<i>Size</i>	Household size	Number of household	*5.9
<i>NCER ISKDR</i>	Economic corridor *ECER as reference variable	ECER NCER ISKANDAR	34.0 32.9 33.1

### ***Empirical specification - Probit Model***

The probit model was used in determining the effects of demographic and socioeconomic factors on the likelihood of the pre-elderly choosing their own homes as their preferred living arrangement at their old-age. The respondents were given several choices of living arrangements which were later grouped into two categories – their own home or other alternatives. Assuming that for each respondent, there was a latent variable that represents his or her unobserved choice. This unobserved choice was associated with demographic and socioeconomic variables ( $x_i$ ). Let  $y_i^*$  represent this latent variable and assume that  $y_i^*$  is a linear function of  $x_i$ , then for each respondent  $i$ ,

$$y_i^* = \sum_{i=1}^n \beta x_i + u_i \quad (1)$$

Where,

$y_i^*$  = unobserved choice

$x$  = independent variables

$u$  = error term

Let  $y$  be the random variable that represents the observed outcomes such that value of  $y$  is observed as:

$y = 1$  if the respondent choose own home

$y = 0$  if other alternatives

Assume that the error term in the latent equation (1) follows a normal distribution, we have the probit model. The probability that the respondents have observed the outcome of ( $y=1$ ) or ( $y=0$ ) is given as below:

$$\text{Prob}(y = 1) = \text{Prob}(y^* > 1) = \text{Prob}(x' \beta + u > 0) = \text{Prob}(u < x' \beta) = \Phi(x' \beta)$$

$$\text{Prob}(y = 0) = 1 - \text{Prob}(y = 1) = 1 - \Phi(x' \beta)$$

The  $\Phi$  is the cumulative standard normal distribution function. The maximum likelihood parameter estimates (MLE) are obtained by maximizing the following log likelihood function with respect to  $\beta$ :

$$LF(\beta) = \sum_{i=1}^n y_i \ln(\Phi(x' \beta)) + (1 - y_i) \ln(1 - \Phi(x' \beta))$$

We estimated two models - using the full sample (Model 1) and by gender (Model 2). The models were estimated with the robust variance estimates (Huber/White/sandwich estimator of variance).

## **4. Findings and Discussion**

### ***Descriptive analysis***

From the interview, it was found that the majority (83.8%) of the respondents, in their old age, prefer to live independently or with their spouse in their own homes. This finding is different from the established evidence that suggests Asian families were dominated by the choice of the living arrangement with extended families (Chen & Chen, 2012; Munsur et al.,

2010; Samantha et al., 2015; Sereny, 2011). The remaining chose to live with children, families, relatives, friends, live in formal care or other informal institutions. The main reason of them choosing their own homes or other arrangements is shown in Figure 1. It shows that comfort is the main reason for the living arrangement preference especially for the pre-elderly with their own homes. As for other arrangements, health and safety are the reasons selected by 20.3 percent and 15.5 percent of respondents, respectively. Surprisingly, less than seven percent chose finance as the main factor that would affect their choice in the later years to come.

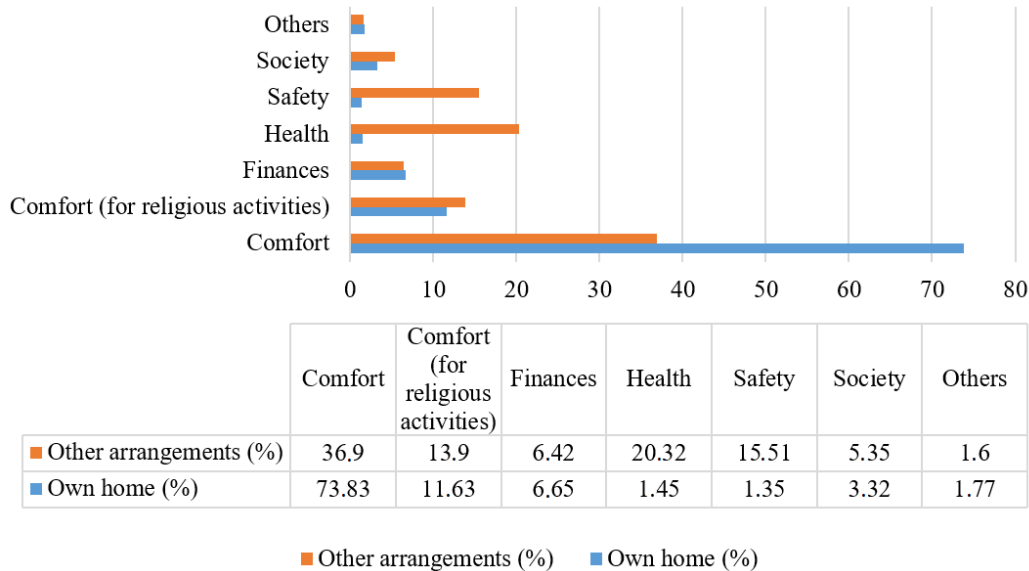


Figure 1. Main reason for old-age living preference

**Analysis of Probit Model**

The goodness-of-fit test for the estimated probit model on total sample (Model 1) suggests that the estimated probit model of the pre-elderly choosing their own home fits the data reasonably well and the overall rate of correct classification, is 83.27 percent. There is no evidence of general specification errors, with a *p*-value of 0.298. The values of variance inflation factors (VIF) are ranges from 1.09 to 3.14 with a mean value of 2.03 that suggests of no serious multicollinearity problem. Similar findings are obtained in Model 2. Table 2 presents the results from both models.

Referring to the results from Model 1 in Table 2, there are several demographic and socioeconomic factors that influence the respondents' planning to live in their own home in their old-age which includes age, gender, economic status, marital status (*married /divorced*), household income (*inc5*), formal education (*edu1*) and the size of their household. It is found that *age* has negatively influenced the likelihood of the elderly to stay in their own homes as compared to the other types of arrangements. As age increases, the respondents may be more anxious over their safety and health which would suggest the reason that they might consider living with others as an option. As supported in Figure 1, it shows that health and safety are among the most important factors in choosing other living alternatives. In other words, younger individuals would prefer their own homes because they may have yet to realize the need for care at an older age. It was supported by a study by Wilmoth (1998) on American older adults that suggests those at the early stages of adulthood prefer living alone or with a spouse while the oldest-old would regard living with a child as the most stable living arrangement. However, there is no significant different of age effect by gender as shown in Model 2.

Gender has also showed a significant effect in Model 1. At 1% significant level, *males* have a higher probability than females in terms of choosing their own homes. Women, generally, may have a closer relationship with their children, therefore, it is more likely that the women would choose other arrangements especially if they do not have a partner. While men are more likely to remarry and prefer their own homes, women may be the opposite and may choose to stay with their children if needed. This finding is consistent with a study by Munsur et al. (2010) on the elderly women in Bangladesh. They found that 68 percent of women in the study are living with their children, 18.6 percent are living with their husband only, while 12.3 percent are living alone. In Bangladesh, elderly women usually move in with their extended family for family support as they are not economically independent. On the other hand, a study in Taiwan by Chen and Chen (2012) found it to contradict to the study done in Bangladesh where the males prefer not to live with their respective spouse only.

In this study, there is evidence suggesting that marital status may play some roles. Those who are *married* or *divorced* have a higher probability to choose their own homes compared to those who are single (never been married), as shown in Model 1. It is expected that married individuals tend to choose their own homes due to the comfort and continuous assistance from their partners built over the years. Likewise, it also shows that the *divorced* significantly prefer growing old in their own home. Unlike *widow(er)* which effect is insignificant as some of them may not be adapted to living alone, the divorcees may have been accustomed and prepared to living independently and will be more comfortable living alone in their own place as it is evident in some studies that privacy is an important determinant of living arrangements (Kim & Rhee, 1997; Mutchler, Lyu, Xu, & Burr, 2016). From Model 2, it shows that similar findings are found among the female respondents, suggesting that marital status is not a significant factor in determining living arrangement choices among the males.

The main economic aspect plays a role in determining the preference of respondents. Those who work are more likely to prefer own home when compared to those who are unemployed. Effects are significant at 1 percent for *self*, *govt*, *pvt* for full sample. Employment status have strongly influenced the decision among the male respondents as compared to their female counterparts as suggested by Model 2. By controlling other variables, there is no significance in the difference in preferences between income groups, *inc1* and *inc4*, to the lowest group. Although it is undeniable that financial capability is important (Chen & Chen, 2012; Martikainen et al., 2008), we are unable to identify the different behaviors of the pre-elderly by their income level. This finding is consistent with the descriptive analysis previously performed, where finance plays a minor role in determining their preference. Nevertheless, the behavior of *inc5* (income more than RM15,000) displayed has shown a positive significant effect at a 10 percent level. This is because individuals with high financial resources feel that they are more empowered in making their life decisions and may adapt to risks and changes easily.

Education is another factor that affects the decision of the respondents in terms of their preference. The respondents with formal education (up to diploma level) have higher probabilities to live in their own homes than those who do not have formal education. This finding can be explained that individuals with a low level of education are less likely to have the ability to make economic decisions. They need the support from their children and immediate family to live in their old days. Based on Model 2, the education effect is only significant for females. This study has found that the household size has negatively influenced the probability of them to choose their own homes especially among the males. This is consistent with the evidence found in other studies, among others are Lai (2005), Hoi et al. (2011) and Chen and Chen (2012).

Table 2. Probit model

Variables	Model 1		Model 2			
	Total sample n=1,136		Male n=536		Female n=591	
	Coef.	Std. error	Coef.	Std. error	Coef.	Std. error
<i>age</i>	-0.014*	0.008	-0.015	0.013	-0.008	0.011
<i>male</i>	0.287***	0.099				
<i>married</i>	0.428**	0.196	0.273	0.287	0.672**	0.303
<i>widow(er)</i>	0.049	0.242	-0.169	0.386	0.313	0.349
<i>divorced</i>	0.705**	0.334	0.536	0.614	0.960**	0.435
<i>self</i>	0.357***	0.137	0.767***	0.227	0.120	0.174
<i>gov</i>	0.502***	0.153	0.730***	0.239	0.408*	0.209
<i>private</i>	0.548***	0.157	0.978***	0.276	0.369*	0.193
<i>inc1</i>	0.086	0.153	0.473*	0.250	-0.137	0.189
<i>inc2</i>	-0.099	0.171	0.313	0.267	-0.320	0.218
<i>inc3</i>	0.185	0.218	0.289	0.337	0.193	0.270
<i>inc4</i>	0.209	0.346	0.781	0.597	-0.131	0.433
<i>inc5</i>	0.848*	0.478	(omitted)		0.497	0.560
<i>edu1</i>	0.265*	0.147	0.239	0.238	0.364**	0.185
<i>edu2</i>	0.255	0.222	0.195	0.341	0.355	0.296
<i>save</i>	-0.173	0.104	-0.145	0.153	-0.203	0.140
<i>size</i>	-0.045*	0.024	-0.068*	0.037	-0.035	0.031
<i>NCER</i>	0.026	0.114	-0.046	0.193	0.056	0.142
<i>ISKDR</i>	0.018	0.119	0.014	0.188	0.046	0.160
<b>Post estimation statistics</b>						
<i>Correctly classified (%)</i>	83.27		88.25		79.36	
<i>GoF (Hosmer-Lemeshow chi-square(8), p-value)</i>	13.21, 0.10		6.78, 0.56		12.86, 0.11	
<i>VIF</i>	2.03		2.17		2.25	

The symbols \*\*\*, \*\*, and \* denote 1%, 5% and 10% levels of significance, respectively

## 5. Conclusion

In this paper we attempt to identify the old-age living arrangement preference among the pre-elderly Malays residing in three economic corridors in Peninsular Malaysia. Unlike many studies that seeks answers from the elderly directly, this study focuses on the pre-elderly group aged between 40 to 59 years. Thus, we will have necessary information that can be used



to design specific policies and programs based on the findings of this study. It is evident from the analysis that the majority of the respondents prefer to grow old in their own homes, which displays comfort to be the main reason for that. This current finding suggests that Asian families are moving towards western family arrangement which is governed by a nuclear family structure. With the information obtained from this study, the policy makers could be able to identify the appropriate measures and make the necessary adjustments to current programs or policies that suit the expected needs of independent living arrangement at old-age of current and future generations. Integrated healthcare services that involves an interdisciplinary healthcare group including physicians, psychologists, social workers, occupational therapists, and physical therapists could also be enhanced.

### Acknowledgement

We are grateful for the financial support from Universiti Utara Malaysia (PBIT: S/O Code: 12312) and the Ministry of Higher Education Malaysia for the Fundamental Research Grant Scheme (FRGS: S/O code: 13063).

### Ethics statement

The respondents were informed about the study, and written and verbal consent was obtained from those who volunteered to participate in the study.

### References

- Alavi, K., Sail, R. M., Idris, K., Samah, A. A., & Omar, M. (2011). Living arrangement preference and family relationship expectation of elderly parents. In *Pertanika Journal of Social Science and Humanities* (Vol. 19, pp. 65–73).
- Bishop, C. E. (1986). Living Arrangement Choices of Elderly Singles: Effects of Income and Disability. *Health Care Financing Review*, 7(3), 65–73. <https://doi.org/hcfr-7-3-65> [pii]
- Brown, J. W., Liang, J., Krause, N., Akiyama, H., Sugisawa, H., & Fukaya, T. (2002). Transitions in Living Arrangements among Elders in Japan: Does Health make a Difference? *Journal of Gerontology*, 57B(4), S209–S220. <https://doi.org/10.1093/geronb/57.4.S209>
- Chen, Y.-J., & Chen, C.-Y. (2012). Living Arrangement Preferences of Elderly People in Taiwan as Affected by Family Resources and Social Participation. *Journal of Family History*, 37(4), 381–394. <https://doi.org/10.1177/0363199012440948>
- Cheng, L., Liu, H., Zhang, Y., & Zhao, Z. (2018). The heterogeneous impact of pension income on elderly living arrangements: evidence from China's new rural pension scheme. *Journal of Population Economics*. <https://doi.org/10.1007/s00148-017-0655-y>
- Chyi, H., & Mao, S. (2012). The Determinants of Happiness of China's Elderly Population. *Journal of Happiness Studies*, 13(1), 167–185. <https://doi.org/10.1007/s10902-011-9256-8>
- Department of Statistics Malaysia (DOS). (2016). Population Projection, Malaysia, 2010-2040. Retrieved September 8, 2017, from [https://www.dosm.gov.my/v1/index.php?r=column/cthem&menu\\_id=L0pheU43NWJwRWVVSZklWdzQ4TlhUUT09&bul\\_id=Y3kwU2tSNVFDOWp1YmtZYnhUeVBEdz09](https://www.dosm.gov.my/v1/index.php?r=column/cthem&menu_id=L0pheU43NWJwRWVVSZklWdzQ4TlhUUT09&bul_id=Y3kwU2tSNVFDOWp1YmtZYnhUeVBEdz09)
- Department of Statistics Malaysia (DoSM). (2018). Selected demographic indicators Malaysia, 2018. Retrieved November 7, 2018, from [https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=397&bul\\_id=RmSrQVZMVEh1SDR3Yng0cFRXNkxPdZ09&menu\\_id=L0pheU43NWJwRWVVSZklWdz](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=397&bul_id=RmSrQVZMVEh1SDR3Yng0cFRXNkxPdZ09&menu_id=L0pheU43NWJwRWVVSZklWdz)

Q4TlhUUT09

- Hoi, L. V., Thang, P., & Lindholm, L. (2011). Elderly care in daily living in rural Vietnam: Need and its socioeconomic determinants. *BMC Geriatrics*, 11(1), 81. <https://doi.org/10.1186/1471-2318-11-81>
- Kao, Y. H., Chang, L. C., Huang, W. F., Tsai, Y. W., & Chen, L. K. (2013). Health Characteristics of Older People Who Rotationally Live With Families: A Nationwide Survey. *Journal of the American Medical Directors Association*, 14(5), 331–335. <https://doi.org/10.1016/j.jamda.2012.10.024>
- Kim, C. S., & Rhee, K. O. (1997). Variations in preferred living arrangements among Korean elderly parents. *Journal of Cross-Cultural Gerontology*, 12(2), 189–202. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/14617936>
- Knodel, J., & Ofstedal, M. B. (2003). Gender and Aging in the Developing World: Where Are the Men? *Population and Development Review*, 29(4), 677–698. <https://doi.org/10.1111/j.1728-4457.2003.00677.x>
- Lai, D. W. L. (2005). Cultural Factors and Preferred Living Arrangement of Aging Chinese Canadians. *Journal of Housing for the Elderly*, 19(2), 71–86. [https://doi.org/http://dx.doi.org/10.1300/J081v19n02\\_05](https://doi.org/http://dx.doi.org/10.1300/J081v19n02_05)
- Martikainen, P., Nihtilä, E., & Moustgaard, H. (2008). The effects of socioeconomic status and health on transitions in living arrangements and mortality: a longitudinal analysis of elderly Finnish men and women from 1997 to 2002. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 63(2), S99–S109. <https://doi.org/10.1093/geronb/63.2.S99>
- Mohd, S., Senadjki, A., & Mansor, N. (2017). Living Arrangements of Elderly: Evidence from Household Income Expenditure Survey. *Journal of Population Ageing*. <https://doi.org/10.1007/s12062-016-9165-z>
- Munsur, A. M., Tareque, I., & Rahman, K. M. (2010). Determinants of Living Arrangements , Health Status and Abuse among Elderly Women : A Study of Rural Naogaon District , Bangladesh. *Journal of International Women's Studies*, 11(4), 162–176. Retrieved from <http://vc.bridgew.edu/jiws/vol11/iss4/12>
- Mutchler, J. E., Lyu, J., Xu, P., & Burr, J. A. (2016). Is Cost of Living Related to Living Alone Among Older Persons? Evidence From the Elder Economic Security Standard Index. *Journal of Family Issues*, 1. <https://doi.org/10.1177/0192513X15606773>
- Samantha, T., Chen, F., & Vanneman, R. (2015). Living Arrangements and Health of Older Adults in India. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 70(6), 937–47. <https://doi.org/10.1093/geronb/gbu164>
- Sereny, M. (2011). Living Arrangements of Older Adults in China: The Interplay Among Preferences, Realities, and Health. *Research on Aging*, 33(2), 172–204. <https://doi.org/10.1177/0164027510392387>
- Wilmoth, J. M. (1998). Living Arrangement Transitions Among America's Older Adults. *The Gerontologist*, 38(4), 434–444. <https://doi.org/10.1093/geront/38.4.434>
- Zimmer, Z. (2005). Health and Living Arrangement Transitions Among China's Oldest-Old. *Research on Aging*, 27(5), 526–555. <https://doi.org/10.1177/0164027505277848>