

# Why The Indonesian Elderly Move ?

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**Abstract**— The study of residential change in later life has become important issues in aging problems during recent years in Indonesia. Many studies indicate that Elders tend to stay than move; hence this is an interesting issue to identify why they move at later life, and what factors determining their movements. This study examines the mobility decision of Indonesian elders as they stay or move and identifies major socioeconomic and demographic factors driving the residential mobility decisions. This study is expected can provide a contextual understanding of aging in place or aging in neighborhood among elders in Indonesia.

Using Indonesian Family Life Survey (IFLS) 2007 and 2014 data, the research followed the members of households aged 60 years from 2007 to 2014, and identified their activities in the context of mobility. As a longitudinal data, IFLS 2007 and 2014 provide comprehensive information on household member characteristics before and after their movements.

The inferential statistics of binary logistic regression is used as a method of analysis. The study results show that in general, the elders tend to stay than move at their residents. Socio-demographic factors such as working status, presence of living children, status of household members, and their educations are significantly determine the decision to move or to stay. Other factors such as gender and health status also indicate same direction although have less significant impacts.

**Keywords**— elderly migration, determinant, IFLS, binary logistic

## I. INTRODUCTION

In the Less Developed Countries (LDCs), studies of elderly migration received inadequate attention from scholars. Indeed, there is no field research of migration which specifically examined migration of the elderly [8]. Since the peak of migration rates is among the young economically-active cohorts, studies of migration are focused on migration of such groups of population. In fact, the elderly do migrate although their rate is not as high as the younger aged people. Data from Indonesia population census 2010, for instance, revealed that 2,1 per cent old people aged 60 years and over have ever moved from one province to another during the five year period (2005-2010) preceding census [21].

Migration patterns in the elderly reflect the presence of events that generally occur in old age, for example the

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retirement phase, partner death, worsening health conditions, as well as long-term care need (Wiseman, 1980). The elderly migration in the context of developing countries according to Noveria (1994) generally led more to migration due to health care needs toward relatives and return migration.

Meanwhile, fertility decline, decreased mortality and increased life expectancy gradually shifted the age structure of Indonesians in older age groups. The elderly population is projected to increase to 15.77 percent by 2035 [2]. Thus the next few years Indonesia will enter the aging population when the percentage of people aged 60 years and above reaches 10 percent. As the fourth most populous country in the world, with the seventh-largest population of the elderly in the world [13], the obvious problem seems to be an increase in the burden of the elderly people's dependence on the productive population.

The effects of aging process can cause problems – biologically, mentally, and economically. As the increase of age, the physical ability will decrease; so it can decline the social roles [22]. Older person more likely needs help or care [12]; and [1] mentioned that in addition to social support from the family in the form of social assistance from the government, informal support is also important to note. With regard to informal sources of support for the elderly, [9] argued that migration theory studies can provide an overview of residential settings for the elderly.

The number of elderly migration according the 2010 population census was 2.1 percent of the migration of all age groups. This indicates that the elderly have no motivation to migrate [21]. Nevertheless it also becomes interesting to know what factors lie behind their decisions to migrate. To enrich the literature on elderly migration in Indonesia, this study aims to find out the tendency of elderly migration in Indonesia, as well as the reasons and factors that caused them to migrate. This research is expected to add literatures on elderly migration especially in Indonesia.

## II. ANALYTICAL FRAMEWORK

### A. Aging Process

Changes in humans occur as time passes through the development stage in the life cycle, beginning from the prenatal period and ending in the elderly. Each stage is through different developmental periods and characteristics. As the aging of the population, the problems such as decreasing

productivity and increasing the dependence burden will be a prominent issue in the future.

Referring to [4], family members became the most important support provider of care for the elderly. Norms related to the responsibilities of children to parents have become cultures in various places, even adopted into law in China. Both in developed and developing countries, couples are a major source of care and support. Reference [23] mentioned that in relatively healthy old age, couples play a role as a major source of support and then to girls. In developing countries, parents live in multi-generational households. In the other hand, the elderly tend to not move, they stay as long as possible in their current place; the longer they have lived in an environment, the more they tend to stay there [5]. So it could be interesting to know why the elderly move at the end of late life.

### *B. The Elderly Migration*

According to the United Nations, the notion of migration is a form of geographic mobility or spatial mobility from one geographic unit to another geographical unit concerning permanent residence change from place of origin to destination. The risen migration captures the difference of someone's living now and five years ago. It describes more the current displacement phenomenon; many studies used this type of migration measure.

Elderly migrate with different reasons from the reasons owned young people. So the general migration theory that emphasizes on migration at work age should not be used in older age migrations [3, 16]. It further mentioned that factors such as employment, wage differentials that are generally the main factors driving the young age group to migrate, are no longer important factors driving old age to migrate. According to [17] assistance migration is most relevant for the elderly in the developing world, followed by kinship migration and return migration. Noveria mentioned that migration is more done by the elderly self-sufficiency and better financial condition so that the migration of the type is more important in developed countries. While migration assistance in developing countries can also be called Kinship migration, which is more associated with worsening health and economic dependence. Reference [15] mentioned that three migration objectives made by the elderly ie migration due to retirement, migration due to the need for assistance, and migration due to entry in other households or institutions of elder care. According to [10] the most common factor why elderly people are moving is that they want to get closer to their families, they want a more appropriate place to live, and/or they move into the pension community. Furthermore, according to Hillier, one of the most important factors of all is the physical inability to live a life in the present place of residence.

The theory of human capital model migration by Sjaastad (1962) in [7] mentions that migration is a personal investment that costs money for later use. One unique feature of the cost-benefit model by Sjaastad is the explicit recognition that the benefits of migration occur over a period of time. This may help to explain, the tendency for the lower age group to move. On the one hand, the offer of alternative residential benefits to

be gained is limited by the remaining life expectancy. On the other hand, non-monetary costs for migration for older age groups are generally higher, especially the psychic costs that arise as a result of strong social ties from home.

Toward a change in the life cycle, there is a long period where the situation increases as increasing in age. At some point human beings will be confronted with the choices they then want to return to their homes. The trigger factors according to [26] are the retirement period, the death of the spouse, and the health condition. It causes the peak of the peak predicted by the elderly. Factors that encourage elderly to migrate according to [25] include socioeconomic status, residential ownership status, decline in health conditions, life disruption, living costs, discomfort in housing or neighbors, relocation of friends, social community, and facilities.

Health factors become endogenous factors for the elderly to finally decide to move [15, 25, 26]. According to [14] home quality affects the elderly to leave the environment and affects their satisfaction with their living conditions. Family support is an important factor in the evaluation of old age dwellings. Generally parents live with their partners until one of them dies, and then they live alone until the health and the needs cannot be maintained again [10]; the husband plays the main source of support and then to the daughter [23]. As mentioned by [25], the location where family members are located, especially children who are already adults, often influences the decision of elderly to migrate.

## III. METHOD

### *A. Data*

This study uses secondary data of Indonesian Family Life Survey (IFLS), also called the fourth wave (2007) of Survey of Indonesian Household (Sakerti) and the fifth wave (2014). The unit of analysis in this study is the population aged 60 years and over in 2007 which also became a sample in the survey 2014. In the process of selecting the sample by age, it was found the age of respondents were not consistent between 2007 and 2014. So in this case an adjustment was taken that the age used as a benchmark is age recorded in 2007.

Based on sample selection of respondents aged 60 years and over in 2007, 2,536 residents aged 60 years in IFLS 2007 were also be the sample at IFLS 2014 (IFLS panel sample 2007 and 2014). When it comes to question of subjective health status, 561 respondents did not answer the question, so the analysis of determinants of elderly migration only covered 1,975 respondents.

### *B. Measurement of Variables*

The migration variable becomes the dependent variable used in the analysis of determinants of elderly migration. The limits of migration areas used in this study are the displacement up to the boundaries between villages. The time limit follows the concept of the population, where a person is recorded as a resident after six months or intending to settle.

Migrants are respondents who migrated during 2007-2014 based on the results of the IFLS 2014 record. Data compiled

from IFLS 2007 question become the data of longevity characteristics in pre-migration conditions, while IFLS 2014 data become an age-old characteristic after migration.

Identification of respondents as perpetrators of migration is taken from two paths. First, the sample is the respondents who answered the questions in the migration section. Respondents are referred to migrate if in the period of 2007 to 2014 moved at least once. Respondents who migrated more than 1 time, then the last migration event was taken. If the respondent did not answer the migration question section, the identification of the migration took place in a second way. Identification of the second method was done by comparing the code of residence between 2007 and 2014. Respondents were called to make a move if the code of residence in IFLS 2007 and IFLS 2014 are different, but the difference is not due to the expansion of the region. Selection process associated with the expansion area is done by using the History Master File Village sourced from the Central Bureau of Statistics. The established area code is a combination of provincial code, district code, and sub-district code. The identification of the second way ignores the respondents who moved within the scope of one district area.

The measurement of the health status (self-health rated) was done by measuring the level of independent health, assessed by respondents through the results of the IFLS 2007 survey of the KK01 question code in book 3B, and then it was formed by simplifying the choice into 2 categories only: (1) Healthy (a combination of codes 1 and 2); (2) Not healthy (a combination of codes 3 and 4).

The working Status Variables 2007 was obtained from the answer to the question ar15c code of IFLS data of 2007. "What was the main activity a week ago?". If the answer of the question is coded 1 then the respondent is called working. If the respondent's answer is other than code 1, then they are categorized not working.

Status of living with a spouse is a combination of questions ar13 (marital status) IFLS 2007, and ar14 (Serial number husband/wife). If to the question ar13, respondents answered in addition to "marry" then the status is living with spouse = 2. If to the ar13, respondents answered other than "marry" then needed to see ar14. If ar14 is coded other than "52", it means the respondent lives with a partner. This variable is formed through the identification of re24 questions, ie "Do you live now with your child/Mr/Mrs?". Category (1) living with the child is the respondent who answered the code "Yes" and category (2) not living with the child is the respondent who answered "no children or" no ". Next to the missing identified from the details ar02b. Status of living with a spouse or child 2007 is a combined Status of living with a spouse and Status of living with a child. This variable is coded 1 if the status of residence with spouse = 1 or Status resides with child = 1. Besides, it means that the respondents do not live with his/her spouse or his/her child, so it is coded 2.

The ownership status of the dwelling was formed from the answer of the IFLS question book 2 and book 3a code hr01, "Do you/Mr/Mrs or other members of the RT own house and occupied land?". The answer consists of 2 codes namely (1) Yes and (2) No.

### C. Statistical Methods

To explicitly test the defining factors of elderly migration, a set of logistic regressions was estimated – whether an individual moved between 2007 and 2014 from each variable measured in 2007. Binary logistic regression analysis technique is an appropriate analytical technique to determine the effect of independent variables on the dependent variable in which the dependent variable is a categorical variable with two categories [11]. So this technique is considered appropriate for use in this study considering the dependent variable of this study is a categorical variable with two categories.

Specific models of determinants to migrate by old age:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 \text{sex} + \beta_2 \text{shr} + \beta_3 \text{working} + \beta_4 \text{infSupport} + \beta_5 \text{home} \quad (1)$$

Remark :

$\beta_0$	: Constanta
p	: Probability elderly to migrate
1 - p	: Probability elderly not to migrate
sex	: dummy variable (1=man; 2=woman)
shr	: subjective health status 2007
working	: working status 2007
infSupport	: live with spouse/ children 2007
home	: home ownership 2007

## IV. RESULT AND DISCUSSION

### A. Descriptive Statistics

The sample in this study was a population aged 60 years and over in 2007 who were observed the development until 2014 (IFLS panel samples 2007 and 2014). Total IFLS panel samples 2007 and 2014 are 1,975 samples. Because of the small number of samples available, not all of the demographic social variables discussed in the descriptive analysis are used in inferential analysis.

Table 1. presents a description of the sample characteristics according to the social demographic variable at the point before the migration event (due to IFLS 2007). According to age distribution based on three age groups, most elderly people in the age group are 60 to 69 years. A higher percentage of women (54.4%) reflect a higher life expectancy for women. As many as 84.1 percent of the population graduated from elementary or lower education. If pulled backwards, the elderly are those who were born in the 50s down which was in the early days of independence, so it can be imagined the achievement of education at that time. The study sample is an elderly population that is originated from one cohort, so changes that occurred within each sample characteristic between 2007 and 2014 can be observed. The changes can be seen by comparing tables 1 column (4) and (6). The proportion of elderly population between married and unmarried changed in 2014. This can occur with age; the time the couple died might happen, and then changed the proportion of married status to widow or widower.

Variable	Characteristics	n	%	n	%
(1)	(2)	(3)	(4)	(5)	(6)
Age Groups	60-69	1.408	71,3	1.408	71,3
	70-79	468	23,7	468	23,7
	80+	99	5,0	99	5,0
	Total	2.536	100,0	1.975	100,0
Sex	Men	869	44,0	869	44,0
	Women	1.106	56,0	1.106	56,0
	Total	1.975	100,0	1.975	100,0
Education	Elementary and below	1.660	84,1	1.642	83,1
	Secondary +	315	15,9	333	16,9
	Total	1.975	100,0	1.975	100,0
Marital Status	Married	1.257	63,6	991	50,2
	Not Married	718	36,4	984	49,8
	Total	1.975	100,0	1.975	100,0
Live with spouse	Yes	662	33,5	591	29,9
	No	1.313	66,5	1.384	70,1
	Total	2.536	100,0	1.975	100,0
Status in the household	Head of Household	1.689	77,5	1.401	70,9
	Others	286	22,5	574	29,1
	Total	1.975	100,0	1.975	100,0
Residence Areas	Urban	859	43,5	1.004	50,8
	Rural	1.116	56,5	971	49,2
	Total	2.536	100,0	1.975	100,0
Working Status	Working	1.278	50,4	646	32,7
	Not Working	1.258	49,6	1.329	67,3
	Total	2.536	100,0	1.975	100,0
Household size	1	198	10,0	252	12,8
	2-5	1.413	71,5	1.345	68,1
	6 +	364	18,4	378	19,1
	Total	1.975	100,0	1.975	100,0

Source : IFLS 2007, 2014 processed

Characteristics	Migrate		Not Migrate		Total		
	n	%	n	%	n	%	
Age	60 – 69	64	4,5	1.344	95,5	1.408	100,0
	70 +	29	5,1	538	94,9	576	100,0
Sex	Men	41	4,7	828	95,3	869	100,0
	Women	52	4,7	1.054	95,3	1.106	100,0
Marital Status	Married	47	3,7	1.210	96,3	1.257	100,0
	Not Married	46	6,4	672	93,6	718	100,0
Education	Elementary and below	67	4,0	1.593	96,0	1.660	100,00
	Secondary +	26	8,3	289	91,7	315	100,00
Health status	Healthy	67	4,4	1.465	95,6	1.532	100,00
	Not Healthy	26	5,9	417	94,1	443	100,00
Working Status	Working	37	3,5	1.035	96,5	1.072	100,0
	Not Working	56	6,2	847	93,8	903	100,0
Live with spouse/ children	Yes	68	4,1	1.604	95,9	1.672	100,0
	No	25	8,3	278	91,7	303	100,0
Resident area	Urban	53	6,2	806	93,8	859	100,0
	Rural	40	3,6	1.076	96,4	1.116	100,0
Status in house hold	Head of household/Spouse	72	3,9	1.783	96,1	1.855	100,0
	Others	21	17,5	99	82,5	120	100,0
Home ownership	Have	72	3,9	1.783	96,1	1.855	100,0
	Don't have	21	17,5	99	82,5	120	100,0
Total	93	4,7	1.882	95,3	1.975	100,0	

Source : IFLS 2007, Processed

As the focus of this study, there is 4.7 percent of the elderly population of 60 years and over who migrated within the period of 2007 to 2014 (Table 2). This means that migration was done when the elderly actually began to enter the elderly. Although the percentage is small but the presence remains noteworthy as a demographic phenomenon, particularly in facing the aging population composition. The displacement by the elderly population is within the borders of the state both close and long distance up to the inter-village movement.

Reference [26] said that after the retirement phase, there is a long period when the trend of migration gradually decreases and then increases in the later years of old age. The existence of two life cycle events that are pensions and loss of physical ability is a mechanism that triggers migration during that period. Table 2, in support of the statement, shows that the elderly population in the age group 70 years and over migrated most (5.1%). However, there is no clearer information as to whether the high percentage is due to the deterioration of perceived health conditions or other causes.

Table 3 shows the older the migrants reflect the insufficient condition that leads them to move for seeking social support. It can be seen that the age group of 70 years and over has characteristics which most are women who have not married / divorced, not the head of household or spouse, not working, and feel themselves in an unhealthy condition, and do not live with a partner or child. Being seen from the characteristics, the migrants aged 70 years and over are the elderly who require social support from the family.

**Table 3. Distribution of Elderly Migrants by Age Group and Demographic Characteristics IFLS 2007 (Percent)**

Characteristics		Age Group		
		60-69	70-79	Total
Sex	Men	75.6	24.4	100.0
	women	63.5	36.5	100.0
Marital status	Married	80.9	19.1	100.0
	Not Married	56.5	43.5	100.0
Education	Elementary and below	65.7	34.3	100.0
	Secondary +	76.9	23.1	100.0
Health status	Healthy	71.6	28.4	100.0
	Not Healthy	61.5	38.5	100.0
Status in the household	Head of Household	70.4	29.6	100.0
	Others	63.6	36.4	100.0
Working Status	Working	75.7	24.3	100.0
	Not Working	64.3	35.7	100.0
Live with spouse/ children	Yes	74.0	26.0	100.0
	No	56.1	43.9	100.0
Total		64	29	93
		(68.8)	(31.2)	(100.0)

Source : IFLS 2007, Processed

Marital status for elderly residents means the availability of an informal source of support originating from a spouse. When they are unmarried, the primary source of informal support of

the spouse is also unavailable. This can lead to migration [26]. Women's life expectancy is higher than that of men and women tend not to remarry when they are widowed [1]; the reason for elderly women to migrate may be in order to seek care support for their children or relatives. This statement is supported by research data showing that the elderly women who migrated are then more likely to be in the household of their children.

### B. Reason to Migrate

This study regrouped 25 reasons for migration by the elderly collected by IFLS 2014 into nine reasons for work, health, family, comfort and environmental reasons. In line with the views of [15], this study shows that more than 50 percent of old age migrated due to family reasons. It also supports the opinions of [3,16] that migration by elderly residents has a reason that is generally different from the reasons of working age population migrated. According to [7], the general theory that applies to migration at work age should not be used in migration studies of elderly people. However, it is still difficult to determine in general how this form of migration is done in the elderly in Indonesia. This is also because there are still 31.2 percent of the elderly population who do not give any reason why they migrated.

**Table 4. Percentage of Reasons to Migrate by Elderly**

Main reason (1)	Percentage (2)
Relate to Job	7,5
Relate to family:	
Marriage	2,2
Death of spouse	1,1
Sickness of elderly or spouse	1,1
Migrate with family	12,9
More close to family/Live with family	23,7
Death/sickness of others	2,,2
Independent/Like the destination/	11,0
New house opportunity	8,6
Due to Weather / Natural Disasters / Eviction	3,2
Family problem	2,2
Others	6,5
Not answer	31,2
Total	100,0

Source : IFLS 2014, Processed

### C. Inferensial Analysis

The free variable probability model included in the model to see the trend of migration by the elderly is as follows:

$$\ln(p/(1-p)) = -0,959 + 0,404\text{Sex} - 0,169\text{shr} - 0,630\text{working} - 0,615 \text{infSupport} - 1,491 \text{home} \quad (2)$$

Through binary logistic regression test based on the existing elderly sample, the value of constant (negative sign - 0.959) means that the tendency of elderly population to migrate 0.383 times lower than the tendency not to migrate if all independent variables are unhealthy, unemployed, not living with spouses/children, and no place to live. Then the test results on each independent variable show that not all the variables included in the model statistically influence significantly on the decision of old age to migrate, as table A.4.

## V. CONCLUSION

Based on the research objectives to see the migration trends by elderly people and the factors that determine migration in elderly people, it can be said that the elderly population in Indonesia tends not to migrate. Characteristics of the elderly population who are more likely to migrate are elderly men, elderly who are not working, do not live with spouses/children, and have no place to live. Meanwhile, the perception of subjective health condition is not statistically significant in determining the elderly decision to migrate. This indicates that old age migration is not solely due to deteriorating subjective health condition, but is more influenced by other factors

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