# INFLUENCE OF EXISTENTIAL LOCALITY ON LABOR FORCE AGE OUT-MIGRATION AND THE ELDERLY'S, AND CHILDREN'S LIVING ARRANGEMENT

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ABSTRACT

This research investigates the influence of existential locality and labor force age out-migration on elderly and children's living arrangement. While the role of people in community on taking care of those who are vulnerable has been found in terms of qualitative view, but for quantitative side, there are not many studies trying to prove the existence of formal and informal kinship role on the troublesome matters of living arrangement when the situation of labor force age migration has occurred. So, the study is useful in providing better understanding on the role of formal and informal kin on labor migration and the left behind. The data source is the Kanchanaburi Demographic Surveillance System (KDSS) Round 5 (2004). Persons in three age groups as child ages (0-14), working ages (15-59) and elderly ages (60 and over) are included in the analysis.

The findings revealed that the existential locality measured as having two houses and over decreases the likelihood to migrate out by comparing with those who have less than two houses of the existential locality. For migration duration, the finding showed that the higher density of houses leads migrants migrating for shorter period. The findings of this research also reveal that an elderly who has existential locality of having two houses and over has high probability to live with other, instead of living with their grandchildren as the intergeneration. This pattern is also found in children's living arrangement as having existential locality leads a child living with other more than living with their grandparents.

The findings mainly indicate the strong existence of the social ties in Thai society also confirm the role of the community on taking the main responsibility for taking care those who are left behind.

KEY WORDS : LABOUR FORCE AGE'S OUT MIGRATION / EXISTENTIAL LOCALITY / LIVING ARRANGEMENT

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อิทธิพลของการความหนาแน่นของบ้านเรือนที่มีผลต่อการย้ายถิ่นออกของประชากรวัยแรงงาน และการจัดสภาพการอยู่อาศัยของประชากรวัยสูงอายุและเด็ก (INFLUENCE OF EXISTENTIAL LOCALITY ON LABOR FORCE AGE OUT-MIGRATION AND THE ELDERLY'S, AND CHILDREN'S LIVING ARRANGEMENT

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## บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อตรวจสอบอิทธิพลของเครือญาติที่ตั้งบ้านเรือนอยู่ใกล้เคียงที่มีต่อการย้ายถิ่นของประชากรวัยแรงงาน และการจัดสภาพการอยู่อาศัยของผู้สูงอายุ และเด็ก ในการศึกษาเชิงคุณภาพนั้น บทบาทของเครือญาติที่อยู่บ้านใกล้เรือนเคียงในการดูแลผู้สูงอายุ และเด็กนั้นมีการกล่าวถึงมานานแล้ว แต่มีงานวิจัยน้อยมากที่พูดถึงบทบาทของเครือญาติต่อการดูแลผู้สูงอายุ และเด็กเมื่อมีการย้ายถิ่นออกของคนวัยแรงงานในการวิจัยเชิงปริมาณ ดังนั้น การศึกษานี้จะก่อให้เกิดความเข้าใจที่มากขึ้นต่อบทบาทของเครือญาติที่มีอิทธิพลต่อการย้ายถิ่น และการดูแลบุคคลวัยพึ่งพิงที่ถูกทิ้งไว้ข้างหลัง การวิจัยนี้ใช้ข้อมูลของโครงการเฝ้าระวังทางประชากรจังหวัดกาญจนบุรี รอบที่ 5 ปี พ.ศ.2547 โดยกลุ่มตัวอย่างครอบคลุมประชากรวัยเด็ก วัยแรงงาน และวัยสูงอายุ

ผลการวิจัยพบว่าการมีเครือญาติ และเพื่อนบ้านใกล้เรือนเคียง โดยวัดจากการมีบ้านใกล้เรือนเคียงสองหลังขึ้นไปส่งผลให้ประชากรวัยแรงงานมีแนวโน้มที่จะย้ายถิ่นน้อยกว่าวัยแรงงานที่มีบ้านใกล้เรือนเคียงน้อยกว่าสองหลัง นอกจากนี้การมีบ้านใกล้เรือนเคียงมากกว่าสองหลัง ส่งผลให้ประชากรวัยแรงงานย้ายถิ่นในระยะเวลาสั้นกว่ากลุ่มวัยแรงงานที่มีบ้านใกล้เรือนเคียงน้อยกว่า ยิ่งไปกว่านั้น การมีบ้านใกล้เรือนเคียงมากส่งผลให้ผู้สูงอายุอยู่กับคนอื่นมากกว่าเด็ก และเด็กอยู่กับคนอื่นมากกว่าอยู่กับผู้สูงอายุ

ผลจากการวิจัยครั้งนี้ชี้ให้เห็นบทบาทอย่างสำคัญของความผูกพันในสังคมที่อยู่ (Social Ties) รวมทั้งบทบาทของชุมชนเครือญาติในฐานะของผู้ดูแลผู้สูงอายุและเด็กที่ถูกทิ้งไว้ข้างหลัง

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# CHAPTER I
# INTRODUCTION

## 1.1 Problem statement and justification

For three decades, the phenomenon of rural to urban migration of adult age people to work has been ubiquitous in most countries throughout the world, especially in developing countries. This phenomenon brings about negative effects to the elderly and children left behind even though migration can provide a positive effect in terms of remittances (Goldstien, 1971; Gulati, 1993; Sawangdee, 1997 and Bongaarts, and Zimmer, 2001). In fact, the phenomenon has not occurred spontaneously; on the contrary, it directly links with economic, social, politic, cultural or even behavioral aspects of people, especially in areas of income disparity gaps, centralization and opportunity disparity, like Thailand (Archavanitkul, 1993). These disparity gaps have been found by many scholars to generate responses among people in many ways such as migration to live in better places (Goldstien, 1971 Todaro, 1976 and Kunstadter, 1989).

Theoretically, the way people respond to their constraints is vividly explained by the multiphasic response theory of Kingsley Davis (1963). Davis mentioned that in the process of transition to low and controlled population growth, populations always respond in a variety of ways and with every means to population pressure. These multiphasic responses have not only included determining to control marital fertility, but they also include internal and external migration (Kingsley, 1963). Migration is one potential population response to the pressure on the economic well being of family members. Davis stated that sustained natural increase of population augmented the number of people on the limited farming space, thus, leaving too many people on the land. His explanation is based on the changing behaviors of the individual members of the society when they encountered resource pressure due to

population growth. Examples are Japan and Sweden in the nineteenth century where there were migrating out, abortion, postponing marriage and using contraception.

At the same time, a study of Stark et al. (1985) done in European countries in 1982 and 1985 also mentioned the role of family members related to migration. This study argued that households were the principle agents of decision making and migration always was viewed as a part of a family strategy for sustenance and socioeconomic improvement. Empirical models of migration showed that the decision to migrate mainly comes from joint decisions among all members of the household (Stark et al, 1982, Stark et al.1985). Furthermore, the decision to migrate of any person can be explained by Rational Choice Theory (RCT). The theory was originally developed by George Holman (1961) and it explains that whenever the household believes migration is the best way out, all members would make a decision on the most valuable choice. Decision making is not only based on economic outcomes but it is also based on security, and protecting those left behind. Another example was provided by Rindfuss (1991) through his experience in Nang Rong, Burirum province, citing that about 70 per cent, as estimated by the villagers, were labor force age out-migrants. The main reasons for them to migrate were for both education and getting better-paid jobs while the elderly, both women and men, as well as children, were left there. Normally, those who migrated out for jobs, would return to the village with financial resources for supporting other family members left in the rural hometown (Rindfuss, 1991). A study of Changsom in Thailand (2003) confirmed the above finding by revealing that in Kanchanaburi, whenever a family needed someone to migrate out for a job, the family tended to keep females to take care of the elderly and children (Changsom, 2003). Also a study of Kunpakdi (1999) on northeastern youths and their migration, mentioned that having children and elderly in households was one factor taken into consideration for other family members in making decision to migrate (Kunpakdi, 1999).

The above three theories and empirical findings clearly show that internal migration is a safety valve protecting all members in household from suffering. Although internal migration itself can support family members in terms of economic

and social well being, there are some negative effects to elderly and children left behind. A study of Knodel et al in Thailand in 1992 revealed that a consequence of migration was the elderly living alone and an increase in mental and physical ill-health in children (Knodel et al, 1992). The elderly and children left behind experience both physical and mental stress with reference to their status and role such as lack of revenue and loss of confidence, loneliness and anxiety. Awear (2003) showed that the elderly living alone in Kanchanaburi province were faced with health, emotional, financial and other problems (Awear, 2003). Moreover, a study of Mosley and Chen done in China and India (1984) pointed out that family environment directly affected the health condition of children. When the mother migrated to another place, or even worked outside, the absence of the mother at home became one of the underlying causes of child malnutrition. In contrast, Mckinzie (2005) in Mexico revealed that children in migrated households are found to have lower rates of infant mortality and higher birthweight due to their families having better economic status owing to the remittances they gain. Also, the study tried to find the channel through which migration may affect health outcomes and found evidence that migration raised health knowledge in addition to the direct effect on wealth. However, this study also found negative outcomes of migration because breastfeeding and vaccination were less likely for children in migrant households especially households in which the mother had migrated. The reason is that the one who takes care of children the best is the children's parents. Thus migration of parents, especially the mother, normally brings about negative effects on children left behind (Mckinzie, 2005).

But in fact, the negative consequences occurring from out migration of household members may be not serious, especially in a society in which the kinship system is very strong. In the Tenth National Economic and Social Development Plan (2007-2011), the issue of community potentiality on taking care of the vulnerable group of the elderly is strongly mentioned due to Thailand having become an aging society and elderly people, especially those in rural areas, are expected to be taken care of by people in the community (NESBD, 2006). The role of community and people in the community is that they are expected to take care of the elderly in terms of physical and mental health while mechanisms from the government will support

them through economic and medical support projects. This national plan is in accordance with the Thai lifestyle as people normally live in forms of formal and informal kinship as their houses are located near each other. The formal and informal kinship system in Thai society plays a critical role as supporter and care giver for family members (Ritcher et al, 1997). A study on the Land System in Central Thailand by Tomosugi (1998) revealed that rural Thai people still have a strong relationship with kinship and their neighbors. That is to say, as past historical studies have made clear, parents usually bequeath their lands to their children for farming. Thus, sons and daughters have still tried to inherit land and continually do farm work. Rabibhadana (1984) explained that kinship location is the pattern of housing settled among relatives in both same family and other families even though they are not biological kin. The kinship system in Thailand is mainly revealed in the form of matrilocality as a wife brings her husband to live in her parent's house after marriage or to live in the land area near the wife's parents (Rabibhadana, 1984). Limanonda mentioned that martrilocality is nearly universal in Thailand; it was found at its highest in the rural Northeast (72%) followed by the North (57%), the Central region (35%) and the South (25%) (Limanonda, 1979). This type of location could provide a significant positive effect as people in the same family in all generations can help each other. In addition, informal kinship systems managed though helping each other among those who are not kin but live in nearby houses could be one smart way to generate community security and would relieve the problems of the elderly and the children left behind because of adult migration to get better jobs in more developed areas. One role of formal and informal kinship shown partly is in terms of "living arrangement" whose meaning covers the status a person has within his/her household. Whenever one member has to migrate out, living arrangements would be changed to make a fit for others left by changing the status of the "still-be" family members. Thus, living arrangement is a very important strategy for the society because it is a way people help each other through rearranging their status and roles to relieve some suffering and enhance psychological well-being under the unavoidable constraints of one or more household members migrating out.

Kanchanaburi is a province in the central region where economic, social and environmental aspects are changing because it is located near the Myanmar border**.** Because Kanchanaburi is a province where there are a huge number of Burmese migrants migrating illegally every day. The province has also become an important industrial and agricultural mixture containing both rural and urban dwellings and it is a popular place for travel among travelers from around the world. With this importance, the Kanchanaburi Project was established with a 1999 Wellcome Trust Award to the Institution for Population and Social Research (IPSR) as a Center for Research Excellence. The project is dedicated to the monitoring of population change and evaluating the effects of intervention based research (Kanchanaburi Project, 2005). In addition, the distance from Kanchanaburi to Bangkok and other provinces is close enough for the strong power of Bangkok and its vicinity as the magnet city to pull adult migrants to get jobs and good circumstances easily. The percent of out-migrants from Kanchanaburi to other areas has gradually increased from 10 percent in 2001 to 12, 13, and 15 percent in 2002, 2003 and 2004 respectively (Figure 1.1).

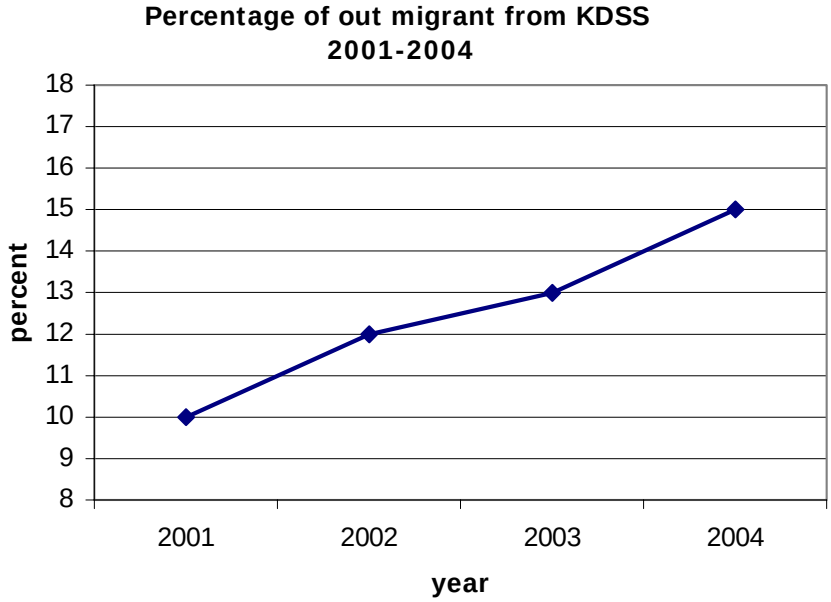



**Figure 1.1** Percentage of out-migration from Kanchanaburi to urban areas

This phenomenon can be explained through the assumption that in the near future, the migration trend in KDSS would continue to increase gradually. If this is true, one may wonder what the negative effect to children and the elderly left behind would be in this unavoidable situation. There have been many studies related to migration-out from Kanchanaburi province to other urban areas. For example, a study of Soe in 2005, which analyzed factors affecting the timing of first migration by employing the event history method, found that only household size had a significant effect on the timing of first migration and when a member of the household migrated, children normally were left to live with their grandparents (Soe, 2005). Another example was a study of Lim, which employed KDSS data to explore the extent of the relationship of landholding and out-migration. The study found that land holding played a very important role in holding people from migrating out (Lim, 2003).

As many scholars confirm, adult out-migration directly relates to the problem of the elderly and the children left behind (Knodel et al, 1992 Awear, 2003 and McKinzie, 2005). So, it is important to concentrate on their living arrangements. The living arrangement in general refers to the status a person has within the household. The aspect of living arrangement is quite important, especially to the elderly and children left behind, because it provides some indication of the amount of potential support available to those left. Also the living arrangement shows the degree to which the elderly and children may experience loneliness and social isolation (Knodel et al, 1992). Data related to living arrangements of the elderly in Kanchanaburi in the two years between 2003 and 2004 are shown below in figure 1.2 while data related to living arrangements of children in the years 2000 and 2004 are shown in figure 1.3 below. According to the data in figure 1.2, the elderly living with their children was the highest categories in both years. There were nearly 70 percent of the elderly living with their children in 2003 but the number slightly decreased to only 60 percent in 2004. Interestingly the number of the elderly living with a spouse has increased dramatically from only 3 percent in 2003 to 21 percent in 2004. The number reflects the issue of children migrating out and the elderly couples being left behind.

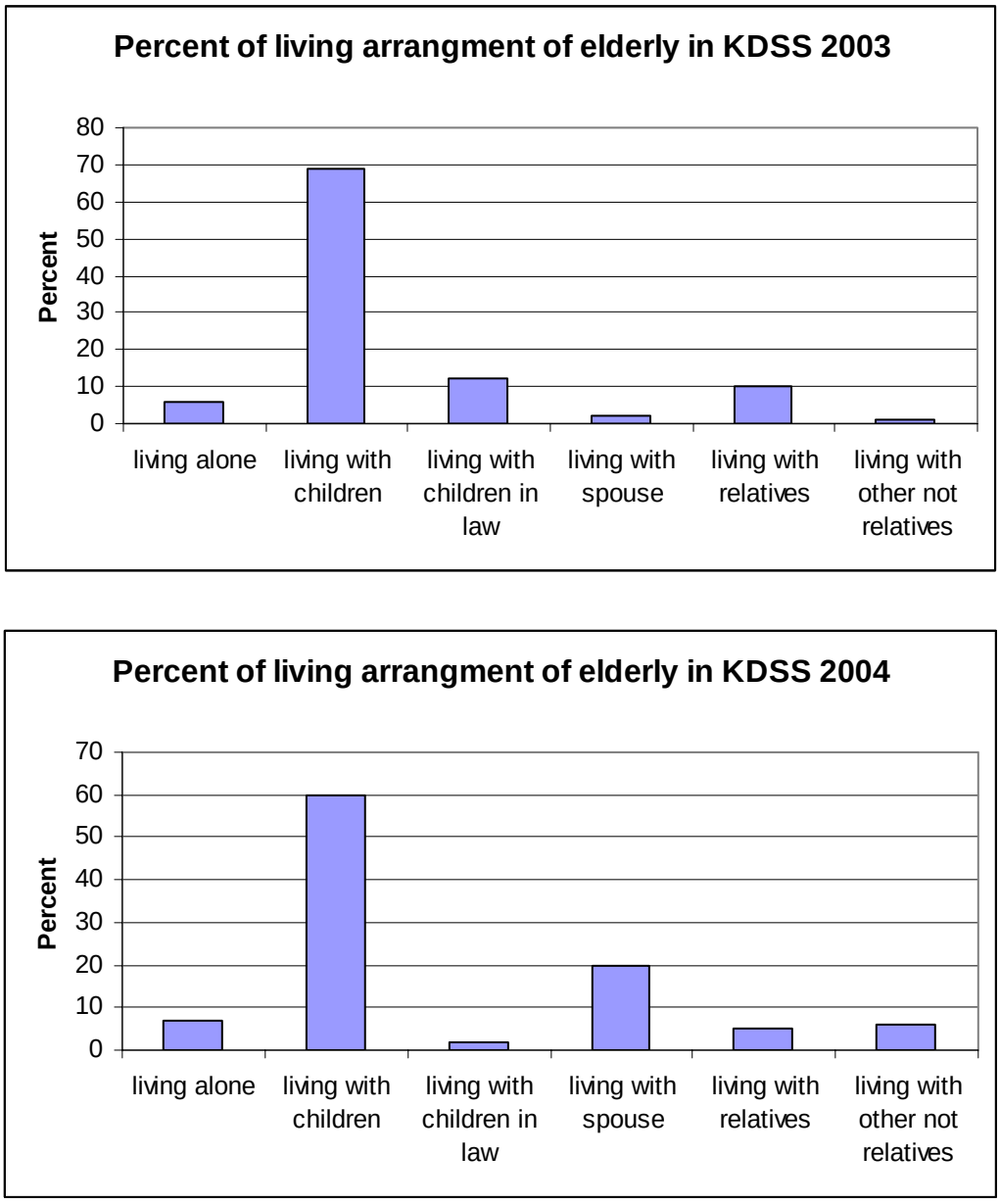



**Figure 1.2** Percentage of living arrangement of the elderly from KDSS in 2003 and 2004

In 2000, the percent of children living with their parents was the highest category at nearly 66 percent, followed by those who lived with grandparents at 12 percent. But five years later, in 2004, the percentage of those living with their parents had decreased to 55 percent while those living with their grandparents had increased to 20 percent. This situation confirms that the number of children left behind with their grandparents had increased significantly and gradually. (Figure 1.3)

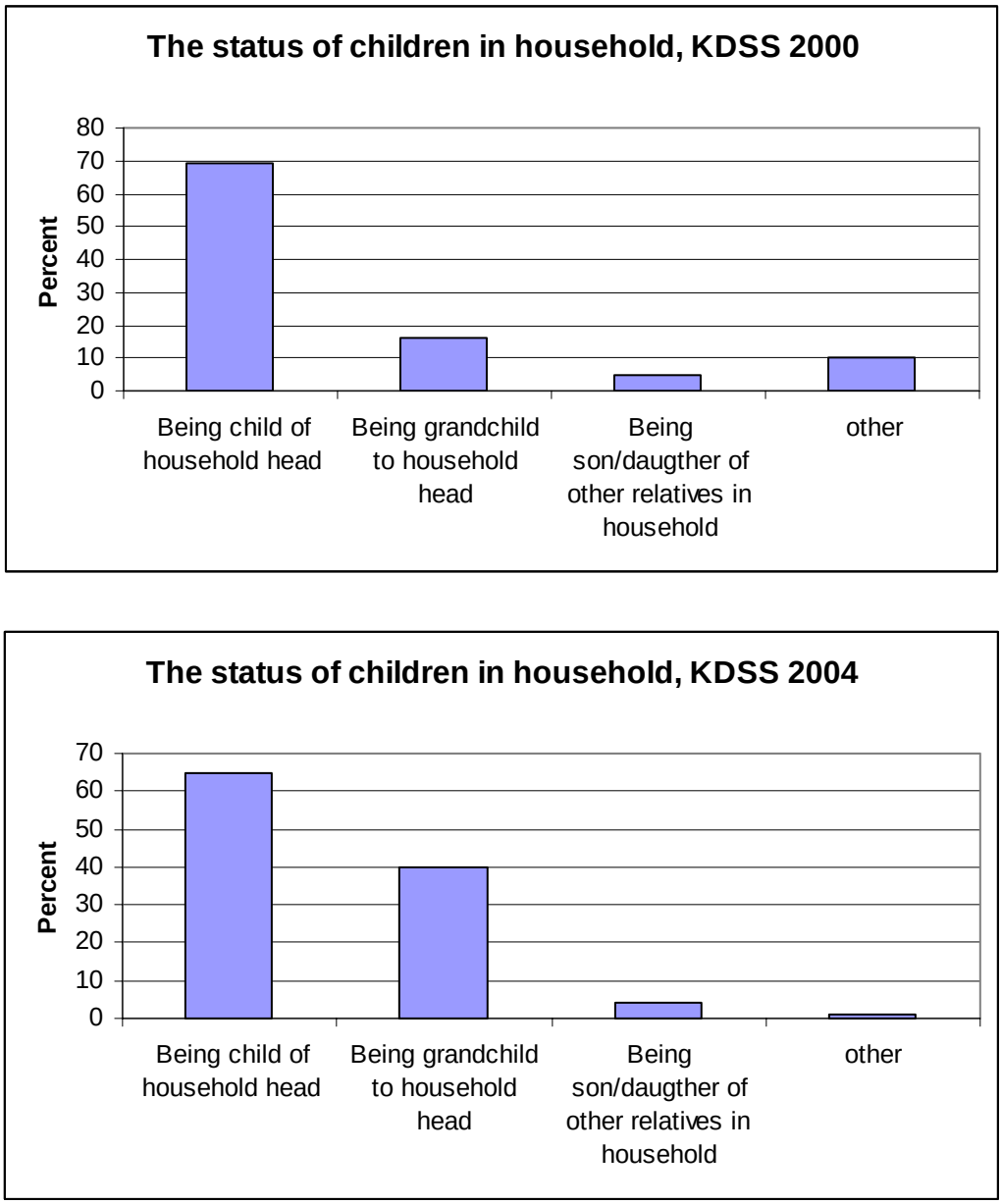



**Figure 1.3** Percentage of living arrangement of the children from KDSS in 2000 and 2004

As far this study is concerned, even though the out-migration aspect in Kanchanaburi and the issue of living arrangement of those who are left behind, especially the older persons, have been studied by many scholars for many decades, researches related to migration rarely concentrate on interactive effects between the role of formal and informal kinship and living arrangement of those who are left behind. It means that there is not any study trying to prove the existence of kinship

role and its relation to the troublesome matters of living arrangement when the situation of labor force age migration has occurred. This study is intended to point out the other side of a coin - that migration may not generate only negative outcomes. On the contrary, with the existence of the kinship role, the dependent persons left behind could live very well in the warm arms of their kin due to the fact that kinship settlement is taking a main role in rural Thai areas. The benefit of this study is not only to fill the knowledge gap by providing an account of the relationship of those two variables generating significant positive effects which have never been explored before, but also to seek some evidence to confirm sociological theory on the significant role of formal and informal kinship in managing the household business when migration has happened. Moreover, the findings will also help policy makers to generate effective policy to support labor force age migrants to discharge their responsibilities without unnecessary worries about the fate of those who are left behind.

## 1.2 Research questions

1. Do existential locality and labor force age out-migration affect the living arrangement of the elderly and the children left behind ?
2. Are there any relationships between labor force age out-migration and existential locality on living arrangement of the elderly and children ?

## 1.3 Research objectives

1. To investigate the patterns of the elderly's and children's living arrangements through the formal and informal kinship management system measured in terms of existential locality.
2. To examine the relationship between labor force age out- migration and existential locality and its consequences on living arrangements of the elderly and children.

## 1.4 Study contributions

1.4.1 It can be predicted that in the near future, the numbers of migrants in Kanchanaburi will increase owing to the country's economic development. It means that the number of those who are left behind would be increased accordingly. An increase of elderly population, in turn, would affect families as they have to bear more burdens in providing care while the number of elderly with no children and grandchildren would increase too (Kendig et al, 1992). In terms of anthropology, it is believable that kinship systems in Thailand, both formal and informal, play the main role in providing care for the elderly and children left behind. But there is no study using quantitative research done to try to prove the existence of formal and informal kinship roles and their relation to troublesome matters of living arrangements when the situation of labor force age migration has occurred. Findings from this study will contribute some evidence to confirm sociological theory on the significance of the role of the kinship.

1.4.2 This study employs the spatial data of GPS spots to connect with household data. Linkage between two sources of data can extend the research boundary and can make collected data more valuable.

1.4.3 Based on the study findings, related policy recommendations for migration will be provided. If the findings show that formal and informal kinship can work well in taking care of those who are left behind, appropriate policies will be provided to support migrants discharging their responsibilities without unnecessary worries for the fate of those left behind. Moreover, if the findings show that the kinship system can support the vulnerable group and enabling migrants to continue working in their destination longer, policies for facility and infrastructure provided at that destination are clearly needed. Any consideration on migration policy will be carefully based on findings from this study.

1.4.4 Furthermore, if the findings from this study show that formal and informal kinship takes a main role in migration decision making among individuals,

the knowledge gap on migration independent variable will be unfolded and further research will be arranged based on a deeper understanding of the variables affecting migration.

## 1.5 Limitations of the study

1.5.1 Since research ethics do not allow the researcher to find blood relationships among households in study area, this study can not identify whether being blood kin or non-blood kin is a more or less powerful variable for any decision making related to migration among all labor force age people. For the purpose of this research, both blood relatives and non-blood related neighbors will be identified as “kin”, that is as part of the kinship system.

# CHAPTER II
# LITERATURE REVIEW

For a long time, studies and researches related to migration have been focused by many scholars since migration is a phenomenon happening ubiquitously throughout the world, in both developed and developing areas. Through this study, definitions of migration and its related variables are investigated variously and repeatedly aimed to find the pattern and theory to reasonably explain the way migration is and the trends it will follow which would be beneficial for policy formulation on dealing with migration problem.

This chapter gives detailed discussion on the definition of migration used in this study due to being the first clear cut element necessary for studying further. Kanchanaburi province and its problem of out-migration follows as the topic of discussion. Interactive effects both in terms of definition and applied study are shown while formal and informal kinship is another topic needed as basic to the study purpose. Then, existing literature on formal kinship and kinship settlement are explained to express the kinship system in both the Thai and international contexts. Later, living arrangements of the elderly and children in KDSS and the influence of formal and informal kinship on their living arrangement are discussed to provide information on the current situation in the study area.

This chapter includes eight sub-sections as follows:

2.1 Migration definition
2.2 Kanchanaburi province and migration
2.3 Formal and informal kin
2.4 Kinship and living locality
2.5 Living arrangement
2.6 Role of kinship on migration and living arrangement

2.7 The influential factors affecting the elderly and children's living arrangement

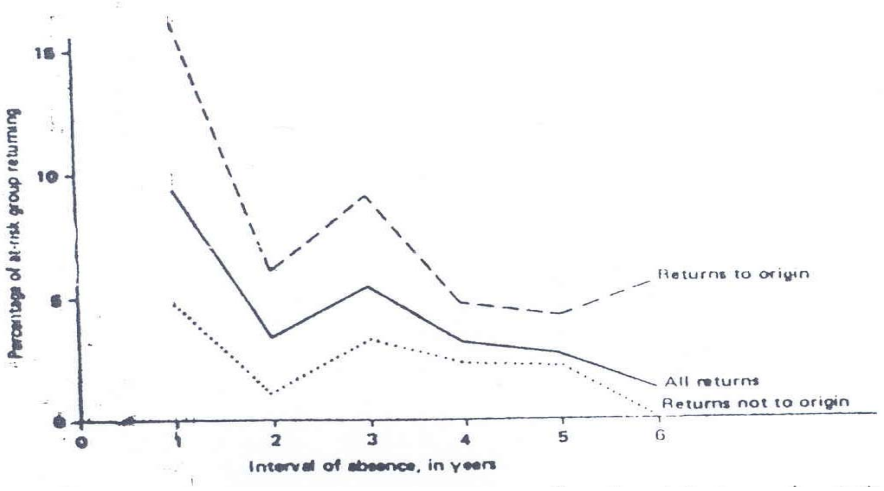
2.8 Conceptual framework

2.9 Hypotheses

## 2.1 Migration definition

It is truly accepted that there is no single definition of migration due to it being quite impossible to define what is exactly called "migration". Migration naturally is involved with several dynamic variables which directly relate to space, time and intention. Thus, an operational definition of migration is dependent on the research objective so one may be a "migrant" in one study but not in others.

In this study, migration is defined as the situation of those who have migrated from their houses to stay in all other places of destination from one month to one year because the researcher intends to focus only on the short-run effect of migration. The study of Davanzo and Morrison (1978) done in Latin American countries revealed that the rate of return to hometown of migrants was high in the period from about one month to two years after leaving. They explained that this period was the sensitive time because migrants might be not successful in their job in the place of destination while some might be worried over the fate of those left behind (Davanzo and Morrison, 1978).




Source: Davanzo and Morrison, 1978.

**Figure 2.1** Time period of return migration back to origin

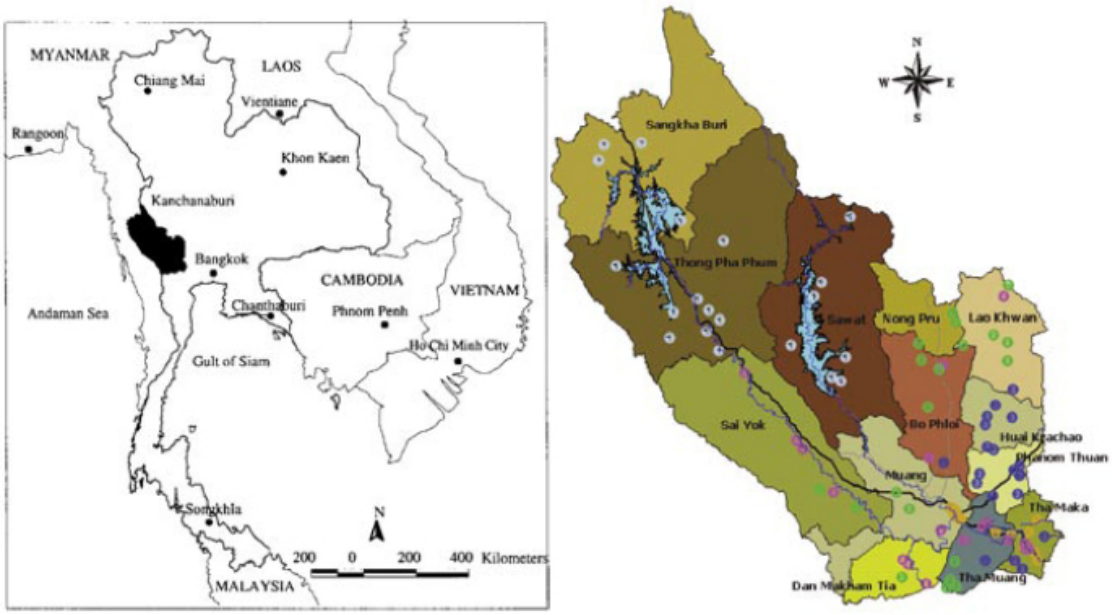
In Thailand, migration patterns and characteristics are explained as a comprehensive picture through the National Migration Survey of Thailand (NMS) conducted firstly in 1992. Data from NMS showed that one-third of total internal migrants in Thailand are temporary migrants in both seasonal and circular terms. The main flow of internal migrants is from the northeastern region towards Bangkok and vicinity areas. The temporary inflow occurs in the dry season and the outflow happens in the wet season taking around 2 - 6 months (Chamratrithirong et al, 1995 and Guest 1998).

## 2.2 Kanchanaburi province and migration

Kanchanaburi is a province where economic, social and environmental aspects are more changing more because it is located on the border with Myanmar. Kanchanaburi has 13 districts (Amphur), 98 sub-districts (Tumbon) and 865 villages. Statistical data from the National Statistics Office (NSO) in 2000 showed that there were 786,001 residents in Kanchanaburi divided into 398,639 of males and 387,362 of females (NSO, 2000). The age structure of residents consisted of three age groups: below labor force age (less than 15), working age (15-59) and old age (60 and over). The working age group was the major group of residents. Rural to urban migration

has occurred significantly. The provincial data of the NSO in 2000 revealed that there were 23.2 percent of life time migrants from the province to other places. In 1995-2000, there were 37,596 migrants who moved out. This is equal to 5 percent of the total population of Kanchanaburi province (NSO, 2000). The phenomenon of migration from Kanchanaburi to other urban areas is still continuing.

Kanchanaburi has the specific characteristic of being a province where there are a huge number of Burmese migrants migrating illegally everyday. Moreover, the province has an important industrial and agricultural mixture containing both rural and urban dwellings as well as being a popular place for traveling among travelers throughout the world. So the Kanchanaburi Project, a member of the INDEPTH network and implemented by IPSR, was established with a 1999 Welcome Trust Award to IPSR as a Center for Research Excellence. The aim of the project is to monitor population change and to evaluate the effects of intervention based research in a selected area of 100 villages (Figure 2.2). The core research activity is the creation of a database on the demographic, health, social and economic composition of the target population. Associated research projects are in the areas of improving adolescent reproductive health outcomes; illegal migrants and health care; population and environment; arrangements for the care of the elderly; family formation, vital events and their registration; and social roles and mortality. The results of the research will be used in formulating and modifying related policies. (Kanchanaburi DSS, 2005.)




Source: KDSS, 2002.

**Figure 2.2** Map of Thailand showing Kanchanaburi province (left) and the subject villages of KDSS (right)

In Kanchanaburi DSS data, the topic related to elders left behind and their health impacts were usually interesting. Kanchanaburi had 67,761 elderly in 2005 or 8.44 percent of the whole population, comprising 31,593 male and 33,168 female (Choeichom, 2005). The trend of the elders in Kanchanaburi province has been to increase gradually in numbers from 1994 – 2004. On contrary, the numbers of the labor force age aged 25-29 in 1994 decreased from 68,200 persons to 66,500 persons five years later in 1999 and decreased to 63,200 persons in 2004. The reasonable explanation for the decreased number of the labor force age is mainly from out-migration since the findings from round 5 of the project revealed that about 25 percent of the population were migrants, 10 percent are in-migrants while 15 percent are out-migrants. The majority of migrants were 15-29 years old. Most of them migrated within Kanchanaburi province. This pattern portrays continuity rather than change from round 4 but the percent of migrants changed from about only 20 percent of the population being migrant, with 7 percent being in-migrants while 13 percent were out migrants. Actually, the percent of migration has gradually changed since the data

from round 2 showed that 82 percent of the population were non-migrants. The out-migrants were only 10 percent.

In addition, the out-migration aspect in Kanchanaburi has been under the spotlight by many scholars. A study was done by Saifi using KDSS data to find the relationship between migration and health. The analysis constructed two models; the first focuses on migration and health status measured in terms of self-report illness, while the second model focuses on migration and health risk behaviors (Saifi, 2006). A study of Lim also used KDSS data for exploring the extent of the relationship of landholding and out-migration. The study revealed that landholding plays a very important role in holding people from migrating out in the context of Kanchanaburi province (Lim, 2003). Furthermore, a study of Soe in 2005 was done for analyzing factors affecting the timing of first migration by employing event history data from KDSS as data for exploring. The study found that only household size had a significant effect on the timing of first migration (Soe, 2005). In addition, a study of Changsom in 2003 was done by using KDSS data for defining the factors of household labor substitute demand during some periods of labor force age (13-59 years old) temporary migration. The study concluded that there was a statistically significant correlation between household labor substitute demand and the number of labor age people permanently living in the household (Changsom, 2003).

## 2.3 Formal and informal kin

Kin groups have been looked at by anthropologists for a long time. Murdock (1945) defined kin groups as 1) residential kin group 2) consanguineal kin group and 3) compromise or informal kin group. The residential kin is defined as kin who live together in one house or nearby residential area. The consanguineal kin covers those who are biological kin. Thus relationship between a wife and her husband is not the consanguineal kin relationship but affinity or marital relationship except for those who were biological kin and later got married. However, marriage between biological kin is rarely found due to the incest taboo which strongly prohibits it in almost all societies. The last group of kin is the compromise or informal kin

group. This type of kin is sometimes called a “nonfamilial kin group”. This informal kinship is mostly evidentin the form of people who are non biological relatives but feel like they are kin because they are located in a nearby area and always help each other in any business (Murdock, 1945).

Beals and Hoijer (1981) agreed with the three types of kin defined by Murdock. They also believed that the kin might not have residential unity or live in the same household. He raised a case of Crow Indians who lived in a scattering of houses in northern Wyoming and in Montana State near the Missouri River. Members of the Crow clan were matri-lineage and most of them married with others, not their relatives. The Crow Indians believed that all of them were kin even if they were located for away and had not seen each other before.

In each society, kinship is different in size. Murdock (1949) revealed that the kin in some societies and its area is quite large in numbers covering all families in a community, called “kin-community”. In some areas, kin are not many in number of members covering only most families in a village, called “kin-barrio”. Anyway, kin-community has always happened from integration of kin-barrio. When the number of kin-barrio members have extended, the boundary of kin-barrio has also extended and gradually transformed its status to that of kin-community. Minnesota Kinship Care Association defines kinship care as caregiving for a dependent child by a relative or close family or friend when the biological parents are unwilling or unable to care for the child or are absent. Kinship care has two types of caregiving arrangements: formal and informal (Minnesota Kinship Care Association, 2003). In Mississippi state, informal kinship was defined as in terms of “caretaker relative”. Mississippi state has yet to enact a state law specific to kinship caregivers. According to the law, "caretaker relative" means: "A person who is providing care to a child qualified for and receiving assistance and who is the child's father, mother, grandfather, grandmother, brother, sister, uncle, aunt or any blood relative, including those of half-blood, and including first cousins or first cousins once removed, nephews, or nieces, and persons of preceding generations as denoted by the prefix of grand, great, or great-great, including great-great-great-grandparents, stepfather, stepmother, stepbrother and

stepsister, persons who legally adopt a child or his parent, as well as the natural and other legally adopted children of such persons, and spouses of any persons named in the above groups all such persons shall qualify as such whether the relationship be acquired by birth or adoption, and neither divorce nor death shall terminate any such relationship (Temporary Assistance for Needy Families (TANF) program, 1996).

In Thailand, the topic of informal kinship is quite important. A study by Samakkarn in 2002 revealed that informal kinship or fictive kinship in Thailand had been happening from economic change. In the past, Thai people mostly lived in an agricultural society in the form of the extended family and in the arms of kin. The socio-economic development happening around the world including Asia has caused changes in the family to a more nuclear family structure. The evidence suggests that with advanced development, movement and migration means that some children have to live among strangers in urban areas while the elderly in rural areas are likely to receive less care from their families (Mason, 1992). So fictive or informal kinship has happened as one respects others as relatives even when they are not biological kin. Normally, fictive kin would be important whenever they live in a nearby house or area and can help people in other families. Samakkarn said that informal or fictive kin always happens naturally among people who locate their houses closely and have the same level of economic status and occupation (Samakkarn, 2002).

There was a study of the Minnesota Kinship Care Association (MKCA) on the experience of kinship caregivers in the state of Minnesota aged 60 and over, who were providing primary caregiving to young relatives or non-related children of close friends through informal arrangements that were initially made among family members. The study defines kinship care as caring for a dependent child by a non-parent relative or close friend when the biological parents are unwilling or unable to care and are absent. While there are two types of caregiving arrangements, formal and informal, this study focuses on informal arrangements, those begun informally among family members without child welfare involvement. The study found that the majority of caregiving arrangements (59%) came from caregivers who were not the relatives of the children and the quality of the arrangements provided was very good. The

arrangements provided were because of parental request, although a small number of grandchildren also made the request (Minnesota Kinship Care Association, 2003).

## 2.4 Kinship and living locality

Kinship is one of the more complex systems of culture. All human groups have a kinship terminology, a set of terms used to refer to kin. Many parts of life are impacted by kinship, and in most societies, kinship relations influence things like who one can and can not marry, who one must show respect to, who one can joke with, and who one can count on in a crisis. Kinship terminologies vary in different societies from as few as twelve to more than fifty terms. Theoretically, kinship is a complex system that determines how people relate to each other and their roles, responsibilities and obligations in relation to one another, ceremonial business and land. This is seen in the so-called 'kin system', a method of subdividing the society into named categories which are related to one another through the kinship system (Central land Council, 2000).

The scientific study of kinship began with the publication of Lewis Henry Morgan's Systems of Consanguinity and Affinity of the Human Family, published in 1870 (Morgan, 1870 cited in Fisher, 1984). Morgan had amassed a huge amount of data on kinship terminology, and using this he worked out a classification of kinship systems. Morgan assumed that human society had evolved through a series of stages from primitive savagery to civilization, and he saw kinship terminologies as reflecting these stages. Primitive promiscuity, for example, is signaled by a Hawaiian type of kinship nomenclature. Morgan made two major criteria distinctions between kinds of kinship terms: classificatory terms, which subsume a relatively large number of biological kin types, and descriptive terms, which subsume relatively small numbers of types - preferably having unique referents. He imposed this scheme on whole terminological systems. He then fitted the typological scheme to his evolutionary framework, where he said that “primitive systems” were classificatory, whereas civilized systems were descriptive. He ignored the problem of how to analyze degrees of extension, or the how to discover the semantic criteria by which people made

distinctions between kindred. This study was quite an important paper since he looked at the principles that were used in separating kinds of kin, and suggested eight: generation, affinity, collaterally, sex of relative, bifurcation, sex of speaker, relative age, and decadence. The kinship system concept has been widespread usage in general but differently owing to the difference in each social context. (Micheal, 1984).

In international study, kinship systems have been of interest to many scholars. Gilbert studied the Cherokee kinship system since 1937 and found that there are four important lineages: the father's matrilineal, the mother's matrilineal, the mother's father's matrilineal, and the father's matrilineal. These four lineages parallel the four fundamental clans that make up an individual's most important relationships (Gilbert, 1937). These clan relationships control all social interaction including marriage, choice of teams in ball games, and inheritance of property (Gilbert, 1937). In Nigeria, the Igbo of Nigeria or Igbo descent organization is based on a segmentary pattern. The core members of a patrilineage group, descended from a male ancestor within eight to ten generations, form the basic descent group. The system inhabits a single territory involving a settled village, or in some cases, interlinked dispersed farmsteads, and the adjoining agricultural land. Villages are more widely integrated into a larger territorial unit, through a series of alliances, common institutions, and joint activities. In some cases, this broader unity is underwritten by a claim that the component lineages are all descended from a remote common ancestor. Within the village, the lineages are subdivided into major segments or sub lineages, which are in turn further subdivided into minor segments, the minimal units of the system. This branching is reflected in the village’s spatial layout. The major segments occupy contiguous wards within the village. The minor ones assume the form of compounds, the basic domestic units. Compounds are also complexly subdivided, but according to patterns of marriage and residence rather than to those of descent. (Schwimmer, 2003).

Kinships settlement can be generated though two ways by which a household may increase the number of people living in it. The first is when a son or a daughter gets married and can not find a place to set up his or her own house. The

preference seems to be for the married couple to set up a house close to either of their parents. The second way a household increases in size is by the addition to a relatives' house. In addition, the reason for living nearby among family members is because agricultural work needs intensive labor as well as agricultural based society needs people to help each other among relatives. Whenever one in the family has to migrate for whatever reasons, kinship suddenly plays a significant role in family business including taking care of vulnerable people such as the elderly and children (Tomosugi, 1998). A study of Sutthirat (1999) on kinship system in suburban Bangkok and the community strategy of existence in social change showed that the kinship system was the base of forming the community as a mechanism of community existence. In the Thai context, the community normally had social organizations which were based on kinship relation and reciprocity. Also, kinship had a main role on screening interest groups and expanding networks for accessing resources in the daily life of family members (Sutthirat, 2001).

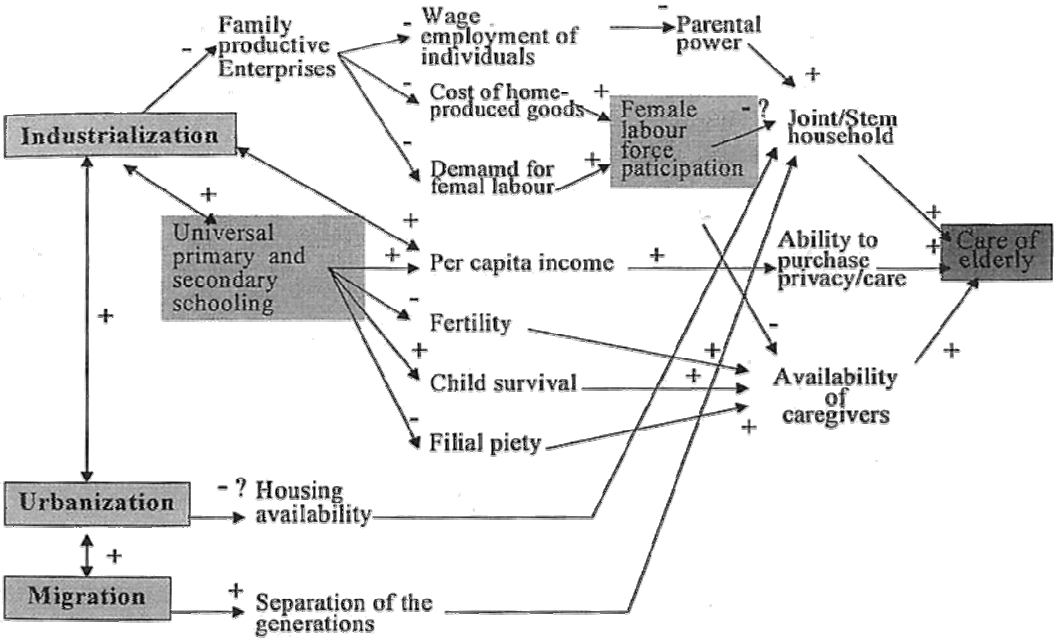
A study of Podhisita in 1984 on Ban Lao Community, a rural community of the Central Chi River Valley, Northeast Thailand, revealed that after marriage, the young couple usually lives at the wife's parental house. Upon the birth of a child, the young couple always separates and builds a house of their own, often within the compound of the parents' house. Normally, one married child stays permanently to succeed to the parental house and to look after the aging parents until they pass away (Podhisita, 1984).

## 2.5 Living arrangement

The issue of living arrangement of the elderly and children is studied widely among scholars in all regions since we are going to be an aging society. Furthermore, living arrangement is one factor determining the issue of living situation and well-being of the elderly and children. A study of Zimmer and Dayton done in Sub-Saharan African countries in 2003 examined the tendency of the elderly to live with children and grandchildren. The result showed that men are more likely to live in a nuclear household, while women are more likely to be living in extended families.

Regressions also showed that determinants of living with children and grandchildren differ by sex (Zimmer and Dayton, 2003). Another study done by Bongaarts and Zimmer in 2001 examined living arrangements of older adults in 43 developing countries by comparing patterns by gender, world regions, and macro-level measures of socioeconomic development. The finding showed that females are more likely than males to live alone and are less likely to live with a spouse or to be head of a household. Moreover, co residence is more frequently associated with sons than with daughters in both Asia and Africa but not in Latin America. Moreover, as a country's level of schooling rises, most living arrangement patterns had changed due to families becoming more nuclear while urbanization and Gross National Product (GNP) have no significant effects on living arrangement (Bongaarts and Zimmer, 2001).

Interestingly, migration has been another crucial demographic factor affecting the elderly on living arrangement. The drop in proportion of shared living arrangements has been caused by an increase in geographical migration from rural to urban areas among young people. The migration of the young reduces the availability of physical support for the elderly, particularly when the female labor force is engaged in autonomous movement as a process of modernization. The literature pointed out that increased migration is associated with a decrease in the probability of living with children and an increase in the probability of living alone (Robert, et al, 1980 and Martin, 1989). Mason (1992) also points out that migration is one of the important conditions contributing to the problem of elderly care as shown in Figure 2.3 (Mason, 1992).




Source: Mason, 1992: 18

**Figure 2.3** The impact of Migration on the Elderly Care

In Thailand, the topic of the relationship between living arrangement and health impacts of children and the elderly has been interesting for many scholars for many decades. A study pointing out the role of kinship and living arrangement by Chayovan and Knodel (1996) revealed that the Thai elderly normally have a pattern of living with a spouse and at least one child. In fact, even though the elderly person lives with a child, he/she also gets help and support from his/her son who lives nearby. The empirical data showed that there were 71 percent living with children but about 15 percent having children visit every day since the children lived nearby (Chayowan and Knodel, 1996). Furthermore, a study of Moises (2003) done in Kanchanaburi also revealed that the use of family networks was an important source of care for the elderly. The availability of household members could be assumed to facilitate the use of health services by the elderly, as they were instrumental in assisting the elderly in planning for, deciding on and utilizing health services. The finding of this study showed something interesting - the bigger the household size, the larger the proportion of the elderly of utilizing the health services. The finding also

showed that the elderly who utilized the health service usually were in a household of 3-4 members and having the pattern of living arrangement as the elderly co-residing with their children (Moises, 2003). Moreover, a study of Choeichom in 2005 revealed that a living arrangement in the pattern of kinship location and extended family would support the elderly to access private hospitals at a higher rate than for those who lived with a spouse or stayed alone. The study explained that the elder's descendants paying for medical fees was a way family members showed their respect to give care to their elders (Choeichom, 2005).

## 2.6 Role of kinship on migration and living arrangement

As with other topics, the role on kinship in migration has been studied in many societies for a long time in various aspects. One among them which highlights migration is the kinship and migration decision making. A study done in Northeastern, Thailand by Ritcher et al. (1997) investigated whether migrants made the decision to move on their own or not. The finding revealed that 43 percent of northeastern migrants made their decision by themselves without any influence from other persons. The other 57 percent of migrants did not make the decision completely on their own but they had other significant persons taking part in their decision-making such as spouse (33 percent), parents (26 percent), and other relatives (16 percent). Also, this study asked non-migrants about family members who may have discouraged them from moving and the finding showed that non-migrants were more likely to have family members who discouraged them from moving. This finding implied that family members' opinions did have a large impact on migration decision-making (Ritcher et al, 1997).

Another part of the kinship role in taking care vulnerable group was studied by Asis 2006. This study was done to find the impacts on left-behind children when large-scale overseas migration in Philippines had been raised. Based on data collected from a 2003 nationwide study, the article examined how left behind children cope without their migrant parents. The study found something interesting: that when the mothers were the ones who went to work abroad, the reshuffling of care giving

became changed. Half of children left behind identified their fathers as the primary care givers while around 63 percent of left behind children in two-parents migration mentioned other female relatives as their primary care givers (Asis, 2006).

Another side of the kinship role on children left behind appeared in a study of Jampaklay (2006). This study employed KDSS data in 2000-2003 to examine the extent to which parental absence has effects on children's school enrolment. The findings of this study showed a negative relationship between parental absence and children left behind as long term absence of the mother appeared to reduce the educational chances of children left behind. Moreover, the finding highlighted that the mother's roles were not easily replaced by other family members and the absence of the mother put the education of the children at risk because it reduced children's chances of enrolling in school (Jampaklay, 2006).

Likewise, a study of Sawangdee (1997) on the topic of migration chains and paths and consequences to children's living arrangement, revealed that kinship system took action for taking care of children left behind. The finding suggested that there was a greater possibility that a child would live with his or her grandparents and other relatives since his or her mother had migration experience. Furthermore, a child whose household did not have a household member migrating earlier seemed to have a higher possibility of staying with both parents by comparison with those whose household had a household member migrating to a new destination. This finding reflected the kinship role on suddenly taking action to take care of vulnerable people like children when one or more members had to migrate out (Sawangdee, 1997).

Another approach on the effect of migration on the well-being of the "left behind" was also used. Studies of Gulati (1993) and a study of Asis and Baggio (2003) provided the same direction of result - that the well-being of the left-behind was strongly influenced by the extent to which social networks were employed in the sending community (Gulati, 1993; Asis and Baggio, 2003). However, the role of kin in previous literature normally limits to only members in the same household. So it

expresses the knowledge gap on the role of non-blood kin and neighbor on living arrangement issue for the left behind.

## 2.7 Influential factors affecting the elderly and children's living arrangement

Considering influential factors relating to elderly and children's living arrangement is one main part for further analysis and investigation. Normally, variables related to the labor force age cohort characteristics such as age, sex and marital status is very important due to children and elderly being a dependent group. Thus, the characteristics of the person whom they depend on are something quite important. Moreover, there are some other household conditions leading to different living arrangement patterns of elderly and children in the study area. All concerned variables are shown below.

### Number of labor force age migrants in household

Number of labor force age migrants in household is an important variable due to it is directly related to the status of those who are left behind. A study of Changsom done in Thailand pointed out the number of labor force age migrants; she mentioned that number and gender of labor force age out-migration is the household strategy the family uses for the overall benefit of the household. Whenever a family needed someone to migrate out for job, a family tended to keep females to take care of the elderly and children and let males migrate out. Thus, normally, not all labor force age persons are allowed to migrate, some might be kept at home for serving the specific reason of taking care of those who are left behind and for other household business (Changsom, 2003). This factor directly affects to living arrangement as the higher number of labor force age means the more chance for elderly to live with his child and a child to live with his parents. The more number of labor force age persons implies that the household has more choice to let a proper one to migrate and keep others for taking care those who are left behind.

**Existential locality (EL)**

In Thailand, the topic of informal kinship is quite important. A study of Samakkarn in 2002 revealed that informal kinship or fictive kinship in Thailand had happened from economic change. In the past, Thai people mostly lived in agricultural society in the form of extended family and in the arms of kin. The socio-economic development happening around the world including Asia has effected changes in the family to a more nuclear family structure. The evidence suggests that with advanced development, movement and migration mean some children having to live among the strangers in urban area while the elderly in rural area are likely to receive less care from their families (Mason, 1992). So fictive or informal kinship has happened as one respects others as relatives even they are not biological kin. Normally, fictive kins would be important whenever they live in nearby house/area and can help people in other families. Samakkarn said that informal or fictive kin always happens naturally among people who locate their houses closely and have the same level of economic status and occupation (Samakkarn, 2002). In Thai society, house settlement among people who are kin is quite close, especially those who in northeast and north regions while those who are in central region are in the same pattern but different in distance among houses located due to agricultural field. However, the way of people to take care their elderly parents is in the same pattern among regions as a study of Podhisita done in 1984 of Northeast Thailand revealed that after marriage, the young couple usually lives at the wife's parental house. Upon the birth of a child, the young couple always separates and builds a house of their own, often within the compound of the parents' house. Normally, one married child stays permanently to succeed to the parental house and to look after the aging parents until they pass away (Podhisita, 1984).

**Age of migrant**

Age of migrant normally affects marital status and then having child/children. The younger age migrant tends to be single and can migrate longer for working. On the contrary, middle and old age migrants have normally settled down,

have children and tend to live with their spouse and children. Thus, migrant age affects living arrangements of children significantly (Limmanonda, 1992). In addition, the migrant's age is also related to the responsibility having for their parents. The younger age migrants who migrate for studying might not have much responsibility to the parents left behind. But whenever they get older and have permanent jobs, they have a serious responsibility to take care of their parents as needed.

Age indexes the level of responsibility and role of people in family. In Thai society, the older brother and sister is expected to be a leader of the family. The Thai proverb "Fak Pee Fak Kai" (parents hope their child takes care of them when they get old) reflects the responsibility of children in taking care of their old parents, especially the older child. Respect from the society affects the older child's perception as having higher responsibility than the younger ones (Rabibhanada, 1984).

**Gender of labor force age migrant**

In Thai society, women normally are the primary caregivers of the elderly and children. Traditional Thai families always regarded men as the head of family who took responsibility as breadwinners. The role in the household for domestic chores like cooking, housekeeping, and taking care of other family members belongs to women (Wongsith, 1992). Thus, increase in labor force participation of women is a significant factor affecting elderly care provision. A study of Yodphet et al. in 1993 also revealed that the elderly always receives care from their coresiding daughter in forms of household chore assistance while sons help with occupational work like taking them to the hospital etc. Daughters are more likely to provide care and assistance to their elderly parents than sons (Yodphet et al,.1993). The study of Spitze and Logan in 1990 also revealed that the elderly with one or two sons are less likely to receive care than the elderly with only one or two daughters (Spitze and Logan, 1990 cited in Poolpolamnuay, 2003). The study of Poolpolamnuay (2003) confirmed that female workers in the non-agricultural sector had a positive effect on financial support for the elderly parents and female workers working in the non-agricultural

sector are less likely to provide food, domestic work assistance and companionship than those working in the agricultural sector.

Gender of migrant is a key factor since this person can control the family resources and play a powerful role in decision making directly affecting the family's welfare. Normally, in a poor agricultural family, the oldest age migrant is the oldest sister/brother who has to take the main responsibility of providing income for the whole family. We always see that the oldest sister/ brother in poor family has to sacrifice himself or herself by quitting studying before graduation and acting as a breadwinner providing money for his/her young brother to study. A study of Panapasa done in Fuji revealed that female breadwinners of household are more likely than male breadwinners to have a positive attitude towards getting medical health care. Normally, female breadwinners of household always take care other family members in all aspects included physical and mental health. Thus, good health has always happened in households having female breadwinners. In addition, there are some studies mentioning that in Thai society, the female breadwinner always sent back their remittance in both terms of number and its frequency to their family more than male breadwinner (Panapasa, S., 1997).

**Marital status of labor force age migrant**

Marital status is another variable that affects quality of life. Living with a spouse would let a person not be lonely as they have a close friend to share with. Normally, a spouse is a very good caregiver who can provide encouragement and consultation as well as understanding, help, warmth and security. A finding from Somboonsith (1992) who studied Location of Living Process and Satisfaction with Life indicates that marital status is related to satisfaction with life as married persons tend to have more satisfaction with their life than those who are single (Somboonsith, 1992).

In terms of migration, marital status indicates a person's responsibility to his/her family, especially a migrant who has children left behind. A study of Ritcher

et al. in 1997 found that married migrants are more likely to send back their remittance to their family in their hometown, especially those who have the child left behind (Ritcher et al, 1997).

**Number of household member**

Another variable investigated for this study is household size measured through number of persons living in a household. This variable is based on the fact that the more persons in the household means the more chance for elderly and children of having someone taking care them. Furthermore, a study of Moises (2003) done in Kanchanaburi also revealed that the use of family network was an important source of care for the elderly. The availability of household members could be assumed to facilitate the use of health services by the elderly, as they were instrumental in assisting the elderly in planning, deciding and utilizing health services. The finding of this study showed something interesting - that the bigger the household size, the larger the proportion of the elderly of utilizing the health services. The finding also showed that the elderly who utilized the health service always were in a household of 3-4 members and having the pattern of living arrangement as the elderly co-resided with their children (Moises, 2003). Moreover, a study of Choeichom in 2005 revealed that living arrangement in pattern of kinship location and extended family would support the elderly to access private hospitals in higher rate than those who lived with spouse or stayed alone. The study explained that the elder's descendants paid for medical fees as the way family members showed their respects and to give care to their elders (Choeichom, 2005).

**Number of elderly and children in household**

The number of those who are in vulnerable groups such as children and elderly living in household is one important variable to predict the living arrangement status of those who are left behind. There are many studies that have mentioned that the number of elderly and children in household is a tie influencing the decision making among other household members to migrate or still live there (Sutthirat, 2001,

and Choeichom, 2005). A study of Podhisita in 1984 on Ban Lao Community, a rural community of the Central Chi River Valley, Northeast Thailand, revealed that after marriage, the young couple usually lives at the wife's parental house. Upon the birth of child, the young couple always separates and builds a house of their own, often within the compound of the parents' house. Normally, one married child stays permanently to succeed parental house and to take after the aging parents until they pass away (Podhisita, 1984).

**Household wealth and household debt**

Household wealth and debt is one factor that reflects the family capability of taking care the elderly and children. A study of Teeraworn (2002) on child health services among Muslims in Thailand mentioned that household wealth or household income affects the standard of living and child's health. Higher income households are normally able to find clean food and provide a pleasant environment to stay in. Moreover, with higher income, the household can utilize better medical services by comparing with low wealth since the low wealth household has to find income only to survive. With this study, it becomes the fact that the higher income family tends to have more access to medical services due to it having high purchasing power. Thus, family with more economic resources is likely to be able to take better care of the elderly. For the wealthy family, there are many choices for the elderly since the family can provide formal medical services in both governmental and private hospitals. In Thailand, a study of Kespichayawattana (1999) and Liawprapai and Sirirassamee (1988) revealed that economic status of the family measured through family earning and its debt is one among the important factors affecting the quality of the elderly care. Because health expenditure is quite high for those who are old, the affordability of medical fees is an important condition generating good quality of life among the elderly.

In regard to child care provision, a study of United Nations in 1994 pointed out that the poverty in a family limits family members to choose between taking care of the children or the elderly. Thus, in this study, household wealth is one

among other controlled variables since it is proved as an influential variable for the model.

## 2.8 Conceptual framework and hypothesis

Considering the living arrangement of elderly and children in this study is based on many concerned mentioned variables such as number of labor force age migrants, existential locality, age of migrant, gender of migrant, household wealth etc. Some variables have already been investigated and their results are quite constant but some as yet are not. In order to provide clear findings for this study, the conceptual framework is set separately as a conceptual framework for elderly's living arrangement and another one for children's living arrangement. Selected variables and the conceptual framework for the elderly and children's living arrangement are gradually presented in Figure 2.4 and 2.5.

However, this research does not employ demographic factors relating to biological factors of elderly and children such as age and sex into the analysis model due to elderly and children in all ages and in both sexes are naturally vulnerable persons who need to depend on other labor force age persons in household. When a situation of labor force age migration has occurred, both elderly and children are significantly arranged to live with other who can take care them properly.

Dependent variable is living arrangement status while there are two groups of independent variables: number of labor force age migrants and existential locality (EL), while another variable is controlled variable divided into labor force age migrant characteristics and household size and household socioeconomic characteristics. Measurements for each variable are presented in detail in Chapter 3.

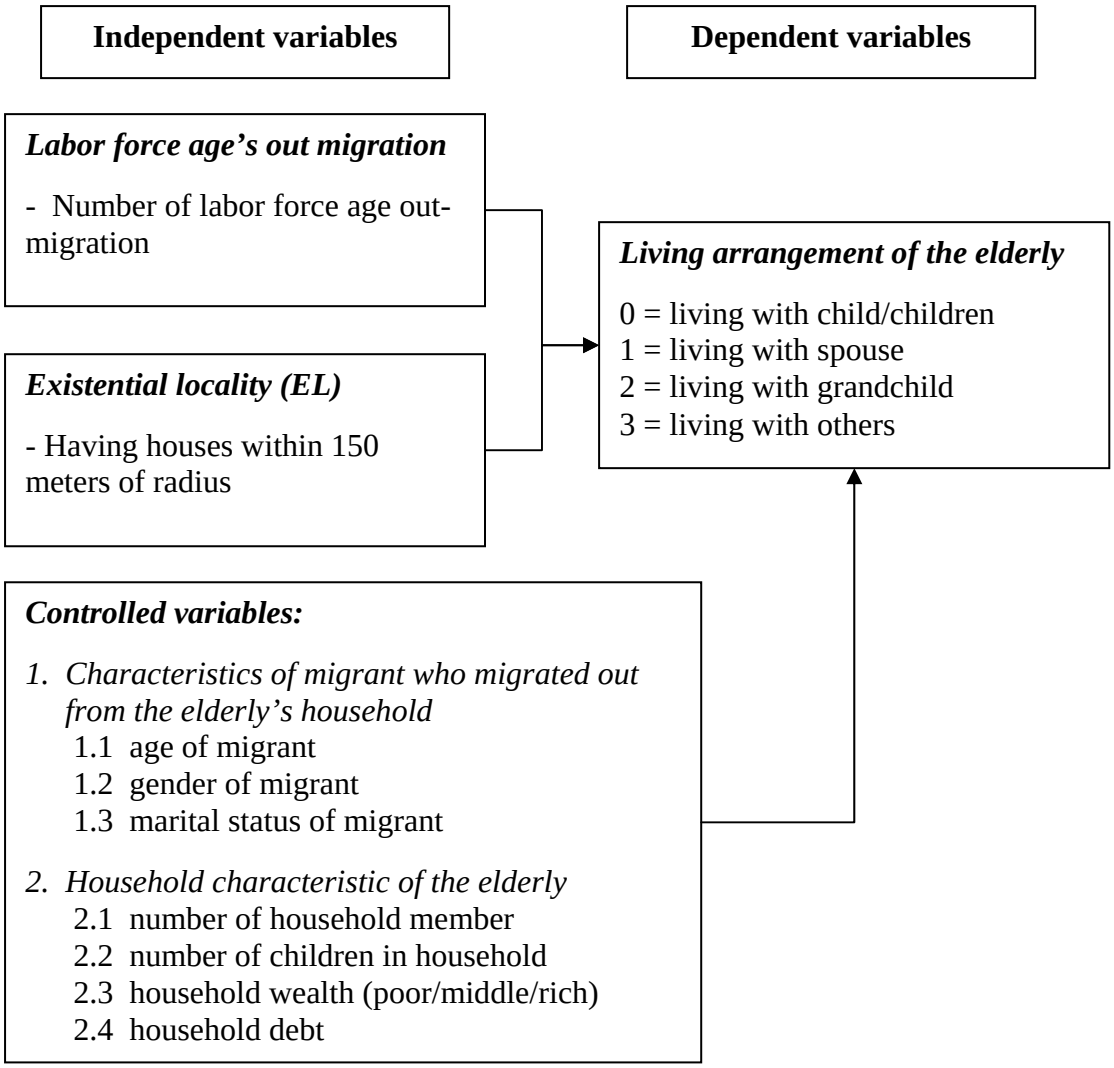



**Figure 2.4** Conceptual framework for the elderly living arrangement

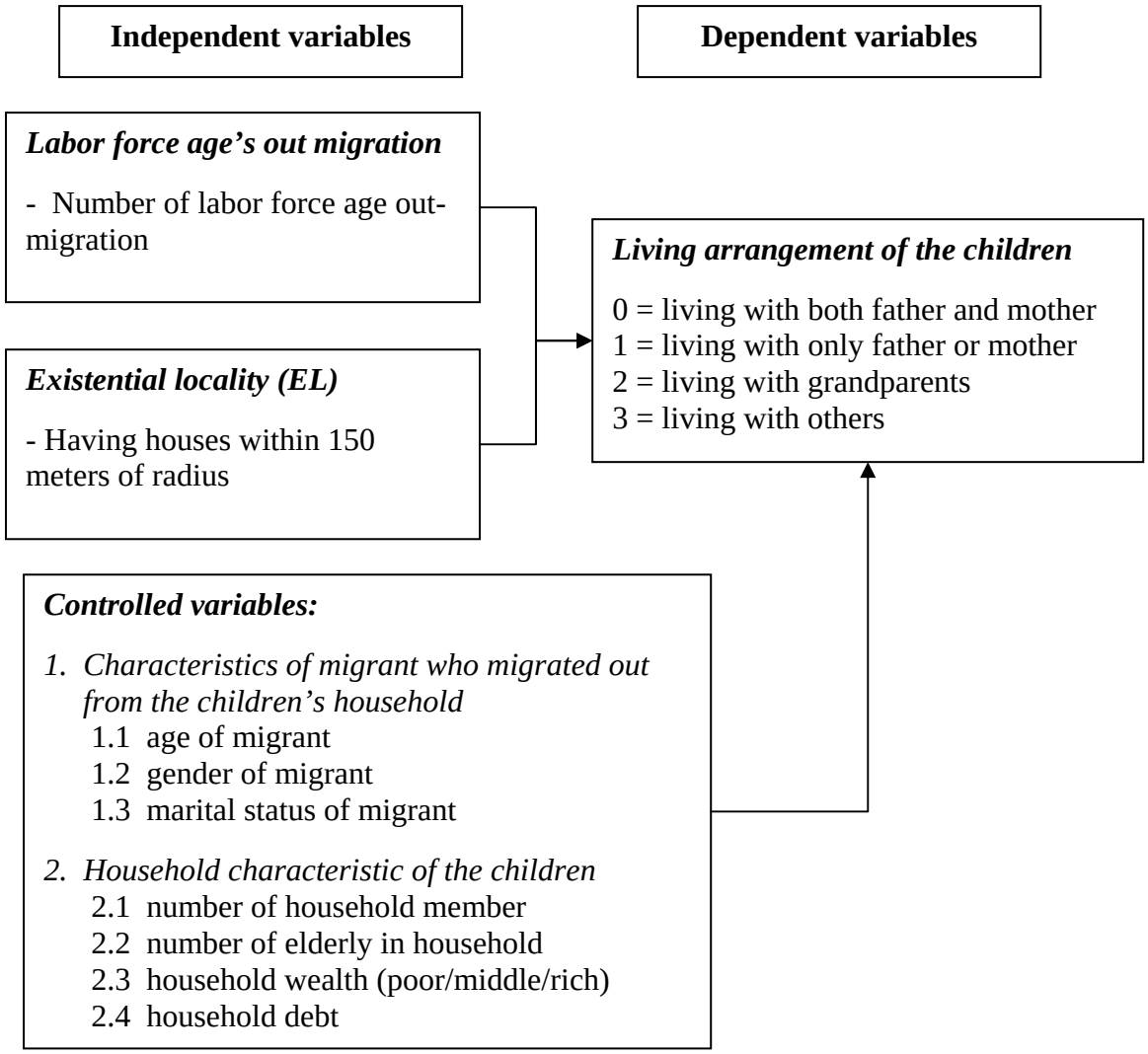



**Figure 2.5** Conceptual Framework for the children living arrangement

**Hypothesis**

The hypothesis is divided into 2 issues:

*Hypothesis on elderly's living arrangement*

The hypothesis for this part is that where there are a high number of labor force age migrants together with having two houses and over in a radius 150 meters

from the house of the subject, there is a high possibility of the elderly living with their grandchildren or intergenerational living.

*Hypothesis on children's living arrangement*

The hypothesis for this part is that where there are a high number of labor force age migrants together with having two houses and over within a radius 150 meters, there is a high possibility of children living with their grandparents or intergenerational living.

# CHAPTER III
# METHODOLOGY

This chapter discusses research methodology employed in this study. Firstly, Kanchanaburi Demographic Surveillance System (KDSS) in the fifth round (2004) is described in detail. Secondly, study sample and operational definitions of dependent and independent variables are discussed. Then analytical process and method of analysis are presented.

## 3.1 Data source

This study employs only a data set of KDSS round 5 (2004). The main reason for selecting round 5 of KDSS is because in this year, the phenomenon of elderly living with spouses dramatically increased from 3 percent in 2003 to 21 percent one year later in 2004. Normally, the majority of elderly in KDSS appeared as living with their child/children. But in 2004, the proportion of them living with their children significantly decreased while the proportion of those living with their spouse increased instead. As researcher, I am interested in this point and selected round 5 to be the study year. Detail of this data source is as follows:

## 3.2 Characteristics of Kanchanaburi province, KDSS labour migrant, elderly, children and their density of living locality

### 3.2.1 Kanchanaburi province

According to most historians, the ancient town of Kanchanaburi was located near Ban Lat Ya, a small village situated approximately 16 kilometers north of the present town. The site was repeatedly recorded in Thai History as an invasion route which the Burmese used to enter Thai Kingdoms. Kanchanaburi has mostly mountainous terrain covering an area of approximately 19,473 square kilometers and

is the third largest province in Thailand after Chiengmai and Nakorn Ratchasima. Situated approximately 129 kilometers west of Bangkok, Kanchanaburi shares a border with Myanmar to the west, Tak and Uthai Thani provinces to the north, Suphanburi and Nakhon Pathom provinces to the east, and Rachaburi province to the south.

In north and west Kanchanaburi, the terrain is comprised mainly of mountains and high plains, with the Thanon Thongchai Range acting as a natural border between Thailand and Myanmar. The range is the source of Kanchanaburi's two most important rivers, Maenam Khwae Noi and Maenam Khwae Yai, which form the famous Maenam Mae Klong. As a result, several of Thailand's largest waterfalls and most extensive wildlife sanctuaries are found in this area.

The magnificent landscape and charming beauty of Kanchanaburi have resulted in major tourist attractions including several well-known waterfalls, caves which were once inhabited by Neolithic man, pristine national parks, tranquil rivers, virgin forests, and reservoir. Together, they offer an intriguing experience for first-time or repeat visitors. Whether its fishing, rafting, canoeing, mountain biking, bird-watching, star-gazing, golfing, elephant and jungle trekking, or even staying on bamboo rafts, Kanchanaburi takes pride in offering them all.

The city of Kanchanaburi is located at the point where two tributaries, the Khwae Noi and Khwae Yai meet and form the Maenam Mae Klong. This is the location of the notorious Death Railway and the Bridge on the River Khwae one of the worlds famous World War II sites which have been immortalized in print and film.

In economic terms, Kanchanaburi has been doing well on a national scale, with over 10 per cent growth annually. Important industries include sugar, agricultural products and jewelry. Tourism is also a main source of income for the locals as the provinces high tourism potential has made Kanchanaburi number one among the west provinces in having the highest number of visitors each year.

Most residents of Kanchanaburi are engaged in agricultural activities. Most of the locals are of Thai ancestry with notable Mon and Karen minorities. Rural dwellers enjoy living simply and respecting nature. Moreover, folk music and dances dating back at least 500 years are still performed today.

**Distances from Amphoe Muang (provincial capital) to neighboring districts:**

| | | |
|---|---|---|
| Tha Muang | 12 | kms. |
| Phanom Thuan | 24 | kms. |
| Tha Maka | 30 | kms. |
| Dan Makham Tia | 30 | kms. |
| Sai Yok | 50 | kms. |
| Thong Pha Phum | 145 | kms. |
| Sangkhla Buri | 230 | kms. |
| Si Sawat | 102 | kms. |
| Bo Phloi | 40 | kms. |
| Nong Prue | 75 | kms. |
| Huai Krachao | 60 | kms. |
| Lao Khwan | 97 | kms. |

Source: Kanchanaburi Provincial Office, 2005**.**

### 3.2.2 Kanchanaburi Demographic Surveillance System (KDSS) round 5

Kanchanaburi Demographic Surveillance System is a project under responsibility of Institute for Population and Social Research (IPSR), Mahidol University under support of the Wellcome Trust, United Kingdom. The project is intended to monitor changes in demographic, socio-economic, migration and also health status characteristics of the population in selected areas in Kanchanaburi province. Data were collected every year from 2000 to 2004 for every household and individual. Data collection was done by dividing Kanchanaburi province area into five strata based on the land usage of people. These five strata are urban/semi urban, rice producing, plantation, upland area and mixed economy. Then, twenty villages were

selected from each stratum according to Stratified Systematic Approach. Thus, totally 100 villages were included as study areas for KDSS. Data collection for KDSS was done using face to face interview and three sets of questionnaires at village, household and individual level. The village questionnaire collects data related to household member status and other household details. The individual questionnaire was used for collecting data from these household members aged 15 years and over in all aspects of individual status.

Since this study uses data set of the Kanchanaburi Demographic Surveillance System (KDSS) in which data were collected in 100 villages in Kanchanaburi province, the KDSS project divides study area of Kanchanaburi province into five strata based on economic features and economic production as rice, plantation, urban-semi urban, uplands and mixed economy. Table 3.1 and 3.2 below show total population of KDSS project divided into five strata in the round of study (round 5, 2004).

**Table 3.1** The number of population separated by strata, age group and sex

Unit: person

| Age Group | Sex | urban/ semi | rice field | Plantation | Up lands | Mixed eco. | Total pop. |
|---|---|---|---|---|---|---|---|
| **0-14** | **male** | 1,223 | 1,159 | 1,204 | 2,621 | 1,497 | 7,704 |
| | **female** | 1,124 | 1,178 | 1,135 | 2,523 | 1,506 | 7,466 |
| | **total** | 2,347 | 2,337 | 2,339 | 5,144 | 3,003 | 15,170 |
| **15-59** | **male** | 3,167 | 2,665 | 2,687 | 4,626 | 3,498 | 16,643 |
| | **female** | 4,111 | 3,067 | 2,950 | 4,826 | 4,062 | 19,016 |
| | **total** | 7,278 | 5,732 | 5,637 | 9,452 | 7,560 | 35,659 |
| **60-110** | **male** | 464 | 456 | 341 | 584 | 510 | 2,355 |
| | **female** | 643 | 580 | 440 | 566 | 638 | 2,867 |
| | **total** | 1,107 | 1,036 | 781 | 1,150 | 1,148 | 5,222 |
| **Total pop** | **male** | 4,854 | 4,280 | 4,232 | 7,831 | 5,505 | 26,702 |
| | **female** | 5,878 | 4,825 | 4,525 | 7,915 | 6,206 | 29,349 |
| | **total** | 10,732 | 9,105 | 8,757 | 15,746 | 11,711 | 56,051 |

As the number above shows, total population of study area in round 5 was 56,051 persons with the number of males and females are not much different as 26, 702 males and 29,349 females respectively. The majority of population is labor

force age as there are 35, 659 persons aged 15-59 years old, divided into 19, 016 of females and 16,643 males. The next group are children as total number is 15, 170 persons, divided into 7, 466 females and 7,704 in males. Then, the last group of people in the studied area is the elderly group, among whom 2,867 are females and 2,355 are males.

In terms of strata, uplands has the highest number of population with 15,746, followed by mixed economy at 11,711 and urban/semi-urban at 10,732 persons. The number of people living in rice and plantation is quite close at 9,105 and 8,757 persons respectively.

**Table 3.2** Percentage of population separated by strata, age group and sex

| Age Group | Sex | urban/ semi | Rice field | Plantation | Up lands | Mixed eco. | Total pop. |
|---|---|---|---|---|---|---|---|
| **0-14** | **male** | 52.1 | 49.6 | 51.5 | 51.0 | 49.9 | 50.8 |
| | **female** | 47.9 | 50.4 | 48.5 | 49.0 | 50.1 | 49.2 |
| | **total** | 100 | 100 | 100 | 100 | 100 | 100 |
| **15-59** | **male** | 45.6 | 47.2 | 48.7 | 50.1 | 47.3 | 47.9 |
| | **female** | 54.4 | 52.8 | 51.3 | 49.9 | 52.7 | 52.1 |
| | **total** | 100 | 100 | 100 | 100 | 100 | 100 |
| **60-110** | **male** | 41.9 | 44.0 | 43.7 | 50.8 | 44.4 | 45.1 |
| | **female** | 58.1 | 56.0 | 56.3 | 49.2 | 55.6 | 54.9 |
| | **total** | 100 | 100 | 100 | 100 | 100 | 100 |
| **Total pop** | **male** | 46.7 | 47.4 | 49.0 | 50.4 | 47.7 | 46.5 |
| | **female** | 53.3 | 52.6 | 51.0 | 49.6 | 52.3 | 53.5 |
| | **total** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

In terms of percentage, the female population is higher than male for every age group, except child age as female population approximately is more than fifty percent for all groups. In labor force age group, the proportion of female is higher than males all strata except uplands. Dependency ratio is around 0.58, meaning that two labor force age persons have to take care only one dependent person (one child/one elderly).

## 3.3 Study sample

This study has been divided into 4 sections because the size of population for each sections is different. For the part of migration's decision making, total population is 35,659, divided into 25,555 of those who are not migrants and 10,104 of migrants. For the part of migration duration, there are 9,236 of population of whom2,884 had migrated for less than one year and 6,352 are migrants who migrated longer than one year. The total sample size for the part of elderly's living arrangement is 4,108 cases of whom 2,028 were male and 2,080 are female. The number of elderly is a phenomenon selectivity selecting the elderly only those living in household of having labor force age migrants. Lastly, for children's living arrangement part, as same as the elderly, a phenomenon selectivity is applied for children living only in household having labor force age migrants. There are male children aged 0-14 as 4,422 persons and female children are 4,127 persons. In total, there are 8,549 children included in the analysis.

## 3.4 Definition of key terms

Since this study is aimed to find the relationship among living arrangement of those who are vulnerable and left behind, migration situation of labor force age and existential locality, then the below are some important operational definitions.

3.4.1 Labor force age: The United Nations defines the labor force age persons as those who are aged 15-59 years old (United Nations, 1991).

3.4.2 Elder age: The United Nations defines the elder age as those of age 60 and over who are of dependent population age according to demographic theory (United Nations, 1991).

3.4.3 Children age: The United Nations defines the children age as those of age lower than 14 and being a dependent population age according to demographic theory (United Nations, 1991).

3.4.4 Living Arrangement: The concept of living arrangement applies to the status a person has within the household, census family or economic family (Ranman, 2001).

3.4.5 Migration: Migration for this study refers to leaving home/village for two months to two years. The reason for setting two months to two years as out migration time is explained by a study of DaVanzo and Morrison (1978) which pointed out that two months to two years was the period of uncertainty. High rate of return to the origin of migrants in this period revealed that they were still concerned about the fate of those who were left behind (DaVanzo and Morrison, 1978).

**Operational definitions of variables**

Also, the research has to provide definitions of concerned variables in order to make clear for researching in further steps. The concerned variables and their definitions are follows.

Dependent variable:

The dependent “living arrangement of the elderly” is a categorical variable divided into four category measures: 0 = living with children, 1 = living with spouse, 2 = living with grandchildren and 3 = living with others.

The dependent “living arrangement of the children” is a categorical variable divided into four category measures: 0 = living with both father and mother 1 = living with only father or mother 2 = living with grandparents and 3 = living with other.

Independent variable

Based on literature review, the independent variable can be categorized into 3 groups as follows:

a. Labor force age out migration

Labor force aged out migration as one independent variable is measured through the number of adults aged 15-59 migrating out in the year of the study. Labor force age out migration is a ratio variable.

b. Existential locality (EL)

Based on a study of Podhisita in 1984 which mentioning that after marriage, the young couple usually lives at the wife's parental house. Upon the birth of a child, the young couple always separates and builds a house of their own, often within the compound of the parents' house. It means that at least a house located nearby is normally belonged to one married child who stays permanently to look after the aging parents until they pass away (Podhisita, 1984). Thus, formal and informal kinship in this study is measured as the dummy variable of having at least a house and having two houses and over in the surrounding area of 150 meter diameter.

c. Controlled variable

Controlled variables cover two parts, labor force age migrant characteristics and household size and socioeconomic status. The labor force age migrant characteristics are composed of age of migrant, sex of migrant and marital status of migrant while household size and socioeconomic status are 1) number of person in household 2) number of children/elderly in household 3) household wealth and 4) household debt. Details are as follows:

- **Labor force age migrant characteristics**

- Age of migrant. Age of migrant is treated as ratio variable on the process of analysis but it is categorized into three groups as categorical scale in frequency tables aimed to generate easier understanding among readers.

- Gender of migrant. Gender of migrant is treated as dummy variable as 0 = female and 1 = male

- Marital status of migrant. Marital status of migrant is treated as categorical variable. There are three groups: 1 = single 2 = married 3 = widowed, divorced, separated.

- **Household size and socioeconomic status**

- Number of persons in household. Number of persons in household is treated as ratio variable

- Number of children/elderly in household. Number of children / elderly in household is treated as ratio variable.

- Household wealth. This variable is estimated from information of household income and asset. Data on household income and asset will be mixed and estimated to be "wealth index" by SPSS which divided household wealth to be 5 groups of 20 percentile. Later, five groups of percentile are categorized to 3 groups:

1 = poor household (the lowest -0 .727906),

2 = middle household (.727907-0.0911907) and

3 = rich household (0.0911908- the highest)

- Household debt. This variable is treated as dummy variable as 0= no debt and 1 = having debt.

Briefly, availability of variables in data source is presented in Table 3.3

**Table 3.3** Availability of variables

| Variables | The Elderly | The Children |
|---|---|---|
| **Dependent Variable** | | |
| - Living arrangement | 0 = living with children<br>1 = living with spouse<br>2 = living with grandchildren<br>3 = living with other | 0 = living with both father and mother<br>1 = living only with father or mother<br>2 = living with grandparents<br>3 = living with other |
| **Independent Variable** | | |
| 1. Labor force age out-migration | - categorical scale of number of adult aged 15-59 migrating out in the year of study | - categorical scale of number of adult aged 15-59 migrating out in the year of study |
| 2. Existential locality | - dummy variable of the number of neighbor houses located within 150 meter diameter as 0 = having no house or one house 1 = having two houses and more | - dummy variable of the number of neighbor houses located within 150 meter diameter as 0 = having no house or one house 1 = having two houses and more |
| 3. Controlled variable | | |
| 3.1 Labor force age migrant characteristics | | |
| - Age of migrant | - ratio scale of age of migrants from 15-59 | - ratio scale of age of migrants from 15-59 |
| - Gender of migrant | - dummy variable as 0 = female and 1=male | - dummy variable as 0 = female and 1 = male |
| - Marital status of migrant | - categorical variable as 1 = single, 2 = married and 3 = widow, divorced, separated | - categorical variable as 1=single, 2=married and 3= widow, divorced, separated |
| 3.2 Household size and socioeconomic status | | |
| - number of persons in household | - ratio scale of number of people living in household in time of study | - ratio scale of number of people living in household in time of study |

**Table 3.3** Availability of variables (Cont.)

| Variables | The Elderly | The Children |
|---|---|---|
| - number of children/elderly in household | - ratio scale of number of children living in household in time of study | - ratio scale of number of elderly living in household in time of study |
| - household wealth | - categorical variable as 1 = poor, 2 = middle and 3 = rich | - categorical variable as 1 = poor, 2 = middle and 3 = rich |
| - household debt | - dummy variable as 0 = no debt 1 = having debt | - dummy variable as 0 = no debt 1 = having debt |

## 3.5 Analytical Process and methods

Analytical process is discussed step by step from counting the number of formal and informal kinship houses to forecasting the living arrangement of the elderly and the children.

### 3.5.1 Analysis on kinship settlement

In order to study a kinship settlement, a field trip was made by going to 5 villages as representatives of five strata in KDSS. This step aimed to find the settlement of whether the near house is kin or not, as well as to prove the existence and action of formal and informal kinship for helping each others. Five villages are:

1) Makokmoo Village, Wangsala sub-district, Tamuang district as a representative of urban/semi urban area.

2) Donprok village, Tungsamore sub-district, Panomtuan district as a representative village of rice producing area.

3) Nongsampran Village, Wangdong sub-district, Muang district as a representative village of plantation area.

4) Kuiyae Village, Lintin sub-district, Thongpapum district as a representative village of upland area.

5) Nongpai, Tungthong sub-district, Thamuang district as a representative village of rice mixed economic area.

Data collection was done by interview with natural groups. Questions of interview covered formal kinship and informal kinship settlement, roles of both types of kin on living arrangement and providing care for vulnerable groups as well as trend of informal kinship's role in taking care of those left behind. When the field finding is finished, the number of formal and informal kinship houses of each household in the study area within 150 meters radius can be counted through Geographical Information Data. This type of data is collected in order to give

information of geographical schedule and settlement location of each house also other important places i.e. school, temple and public health station in the study area. The figure 3.1 below shows the number of houses as formal and informal kin houses counted.

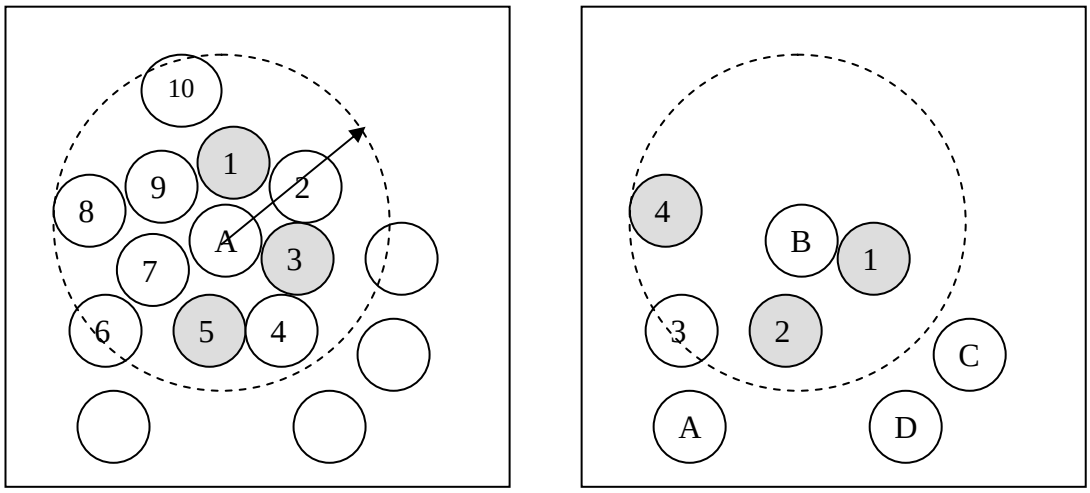



**Figure 3.1** Formal and informal kinship houses as existential locality

From above figure, house “A” has 10 houses of existential locality (EL) located within 150 meters of radius.

### 3.5.2 Evidence from qualitative approach

Qualitative approach done through the field work is mainly aimed to find the real situation on how elderly and children live when other labor force age persons migrate out. Focus houses for field work are houses having either the elderly or child left behind while labor force age members have migrated out or commute for work. In depth interview is employed as a tool for data collection as interviewee is allowed to specify on which house is his/her kin and which house is not. Interview is started from general question related to general information of village. Then questions about house location pattern and relationship among members of nearby houses as well as role of members in each house on taking care of the vulnerable group left behind are provided.

**Village A: The case study of urban/semi-urban area**

In this village, there are approximately 290 households and around 700 people as villagers. The main occupation for villagers is gardener while short-period vegetables and corn are the main vegetable products. Interviewing with the head of village found that nuclear family is the main type of family in the village while migration rate among labor force age is not high due to agricultural output providing the villagers with good benefit and income all year round.

In terms of kinship and non-kinship location and the relationship among them, the study shows that villagers normally locate their houses in pattern of group. The group of houses generally composes of 2-6 houses and people in these houses are kin and not kin. Figure 3.2 below shows the relationship among focus house (no.1) and others.

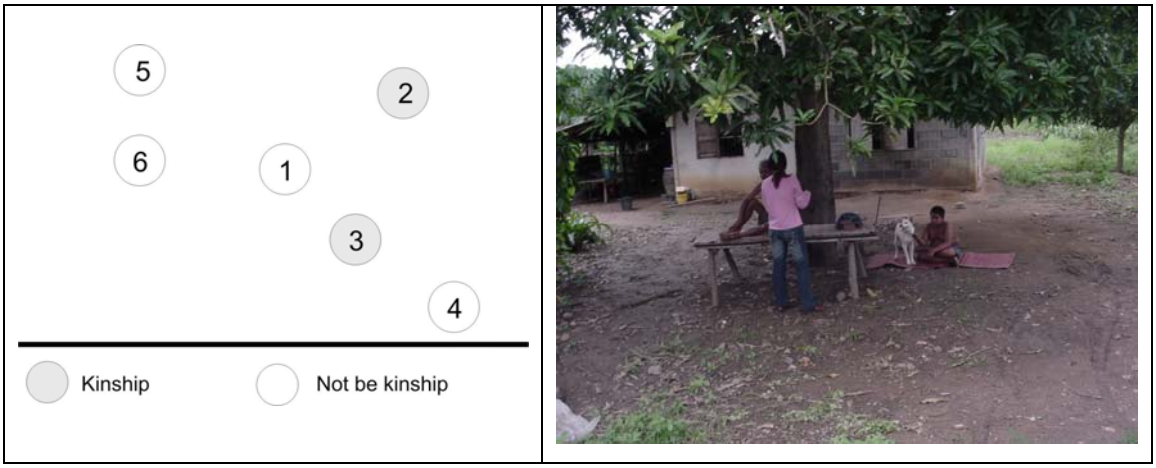



**Figure 3.2** Living locality and relationship between the focus and surrounding houses in urban/semi urban area

In this case, the male elderly in house no.1 explained that surrounding houses do various activities and supports for him. The owners of houses no.2 and 3 are his relatives as both of them are his married sons. So his daughters in law and grandchildren from both houses always provide him food and any other goods. When

he feels lonely, he always visits the elderly in houses no.4 and 5 since these houses have the elderly near in age to him. The elderly in house no.4 and 5 are not his relatives but they always help each other since all of them feel familiar for a long time. Talking and sharing ideas and experiences among three elderly can let them reduce their feeling of loneliness. Something interesting found from this study shows that a young female member in house no.6 once took him (the elderly in house no.1) to hospital because he felt faint in the day time when other relatives in adjacent houses went to join in a ceremony of tonsure. Thus, for this type of village, helping each other between persons who are not kin is quite strong while the role of female kin is important especially for providing foods for the elderly.

**Village B: The case study of mixed-economy area**

In this village, there are around 359 households composed of 1,323 members. Normally, the household in this village is in the form of nuclear family. Main occupation for villagers is planter as sugarcane and sweet corn. Some vegetables such as morning glory and Chinese mustard are main products. There are three crops the planter can harvest for all year round. Interview with the head of the village shows that the number of out- migration of labor force age is not high since the products get good prices on selling so they let the villagers have enough earning capacity, so there was no need to move out for finding other well-paid jobs. Anyway, there are some villagers who have no land, so some of them rent a neighbor’s land for plantation and some work as laborers in plants and farms of others.

In terms of kinship and non-kinship location, finding from the study shows that normally house locations of villagers is in arm of kin due to most of the villagers owning their own fertile lands which provide good quantity products. Because of this reason, they still work on the farm and do not sell their lands. Thus lands are property the old generation send to their offspring. Figure 3.3 below shows the relationship among house no.1 as an focus house and other surroundings.


**Figure 3.3** Living locality and relationship between the focus and surrounding houses in mixed economy area

The distance among house no.1 and other adjacent houses is quite long as the nearest one of house no.1 is the house no.2 locating around 70 meters far. Everyday, the male elderly in house no.1 walks to house no.2 or sometimes no.3 for getting meals due to house no.2 and 3 are belonged to his married son and married daughter respectively. Normally, duty for taking care him as the old father in daily life such as meal providing and house cleansing is always belonged to his daughter and daughter in law while son normally takes care him for other hard jobs such as house repairing and driving him to hospital etc. For house no.4, even this is a kin house, but it is not a blood kin as the head of household is a kin by marriage with his brother in law. Thus, relationship between the elderly in house no.1 and family member in house no.4 is not much strong, only visiting and talking for relieving the loneliness is only thing they do.

**Village C: The case study of rice area**

As a case of rice field, the villagers normally confront with poor earning due to the cost of rice production is high, even there are two times of rice crop annually. Thus, the number of labor force age migration is quite high while the

problem of the elderly left behind is significant. The form of out migration reveals in both term of in-province and out-province migration.

In terms of house pattern, houses located among people are quite closed with each other even the area is rice field. The figure 3.4 below is an example houses showing relationship among kin and non-kin houses.

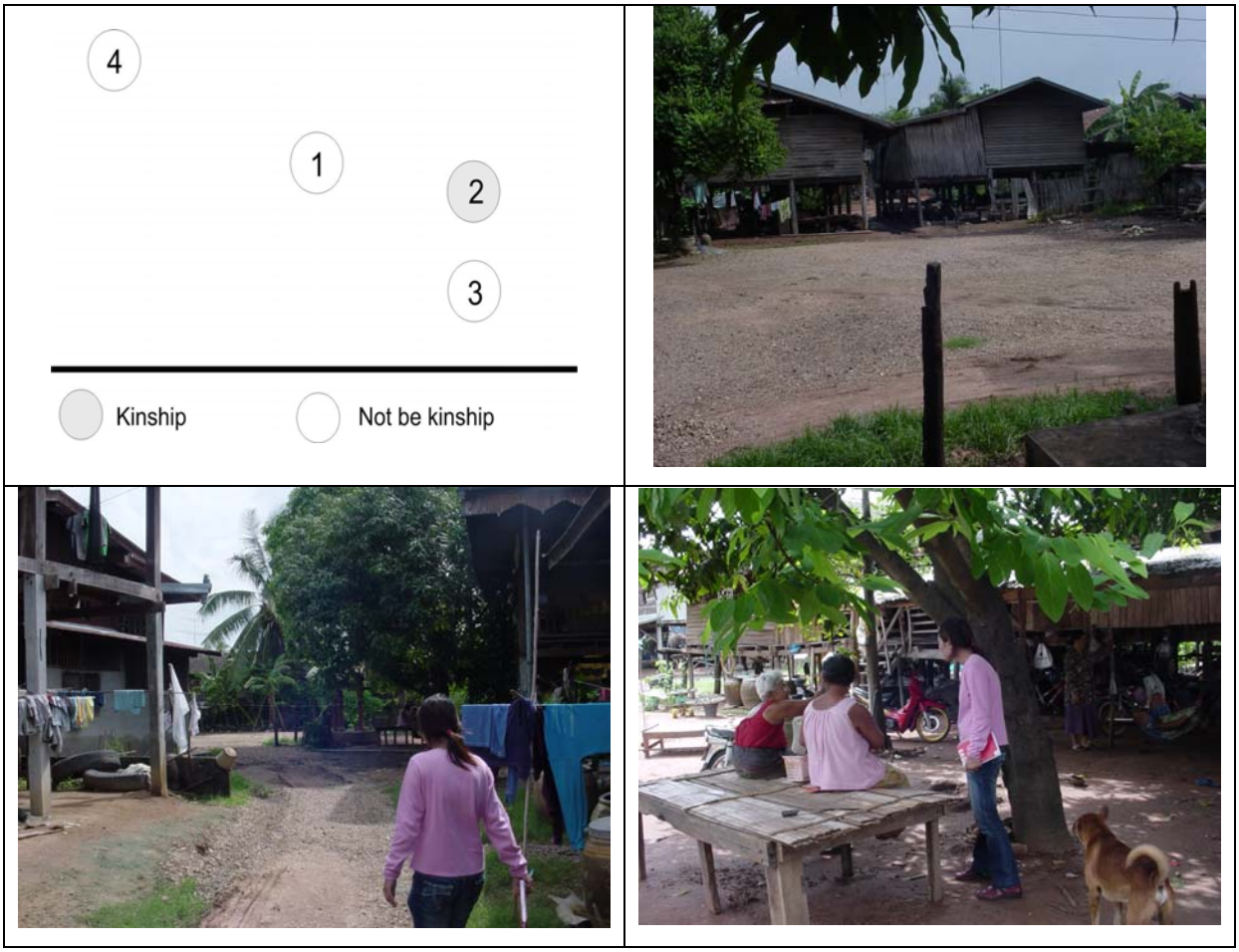



**Figure 3.4** Living locality and relationship between the focus and surrounding houses in rice area

The house no.1 has elderly couple left behind due to their son migrating to work in factory in Samutprakarn province. For the house no.1, only house no.2 members are their blood kin as the head of house no.2 is the married niece of them. Normally, the elderly couple cooks for themselves but stuffs and fresh foods for

cooking such as fresh fish, vegetable, cooking oil and firewood are provided by their niece who lives in house no.2. Due to the elderly couple has still been strong so they never went to see doctor at hospital. If they get sick needed medical treatment, they believe that their niece and her family will bring them to hospital safely. By the way, the roles of people in houses no.3 and 4 are important since the head of house no.3 is the elderly who is talkative so the elderly form nearby houses will come and talk also share experiences together by using area of houses no.3 and 4 for meeting in every evening.

**Village D: The case study of plantation area**

Village D has approximately 250 households of about 900 members. There are around 62 elderly living in the village. The village D is a new village where people from Kok-sumrong sub district moved to live here 20 years ago. Main products of the village cover sugarcane, cassava and chili. The village always confronts with insufficient water for plantation due to irrigation system has not been available. Plantation is done only by rain water. Normally, earning of people in the village is not consistent due to agricultural products are depended on rain water. Thus, the number of migrants is quite large as earning of them is not enough for living. Some migrate to be unskilled workers in construction site in Bangkok and periphery provinces while some move to be fishermen in Rayong and Trad provinces. However, there are some labor force aged persons commute to work in a seed producing factory located nearby sub-district (Amphur).

In terms of house location, houses are normally located closely by mixing both kin and non-kin houses. The figure 3.5 below show relationship between focus house (no.1) and others in surrounding.


**Figure 3.5** Living locality and relationship between the focus and surrounding houses in plantation area

The house no.1 is a living place of a female elderly where houses no.2 and 3 are belonged to her sons. Son in house no.2 migrates to Bangkok while son in house no.3 has still been here. The household head of house no.5 is the elderly's niece while house no.4 is owned by her married daughter. As a mother of sons and daughter living near, she cooks rice whenever she needs since her children do it for her. Normally, she can have breakfast till dinner in every children's houses she wants. In five days of week day, she normally lives alone in day time but having a young niece to stay overnight with her. In weekend, her daughter who is a nurse in Muang district regularly comes back to stay with her and right back for working on Monday. The elderly has still been strong, having no chronic illness, only problem with eyesight she faces. Whenever she got sick, her daughter who is a nurse always brings some medicines for curing her illness. Asking about the role of non-kin houses nearby, she explained that the houses no. 6 and 7 are not her blood kin but they always help her and help each other in almost all of matters. For example, members of house no.7 ever brought her pregnant daughter to hospital for monthly pregnant checking. Moreover, they always give and take for foods and any stuffs each other.

**Village E: The case study of uplands**

There are around 230 households and 560 members in this village where the main occupation is upland planter. The plant products for the village cover banana, rubber and chili. Migration rate of labor force age is not high as one villager explains that it is because agricultural products are consistent for harvesting. This allows people having enough earning. Anyway, there are some migrating out for studying and jobs in Bangkok and Muang district.

In terms of house location, houses are located in group but the number of houses in a group is not many. Interviewing with some villagers shows that migration rate is not much. Normally, migrant who has old parents tends to migrate when there is at least one family member living with the parents. Moreover, the role of non-kinship people for taking care the elderly and children left behind is quite good as villagers always help due to they feel familiar each other. Figure 3.6 below shows relationship between houses of kin and non-kin as an example case.

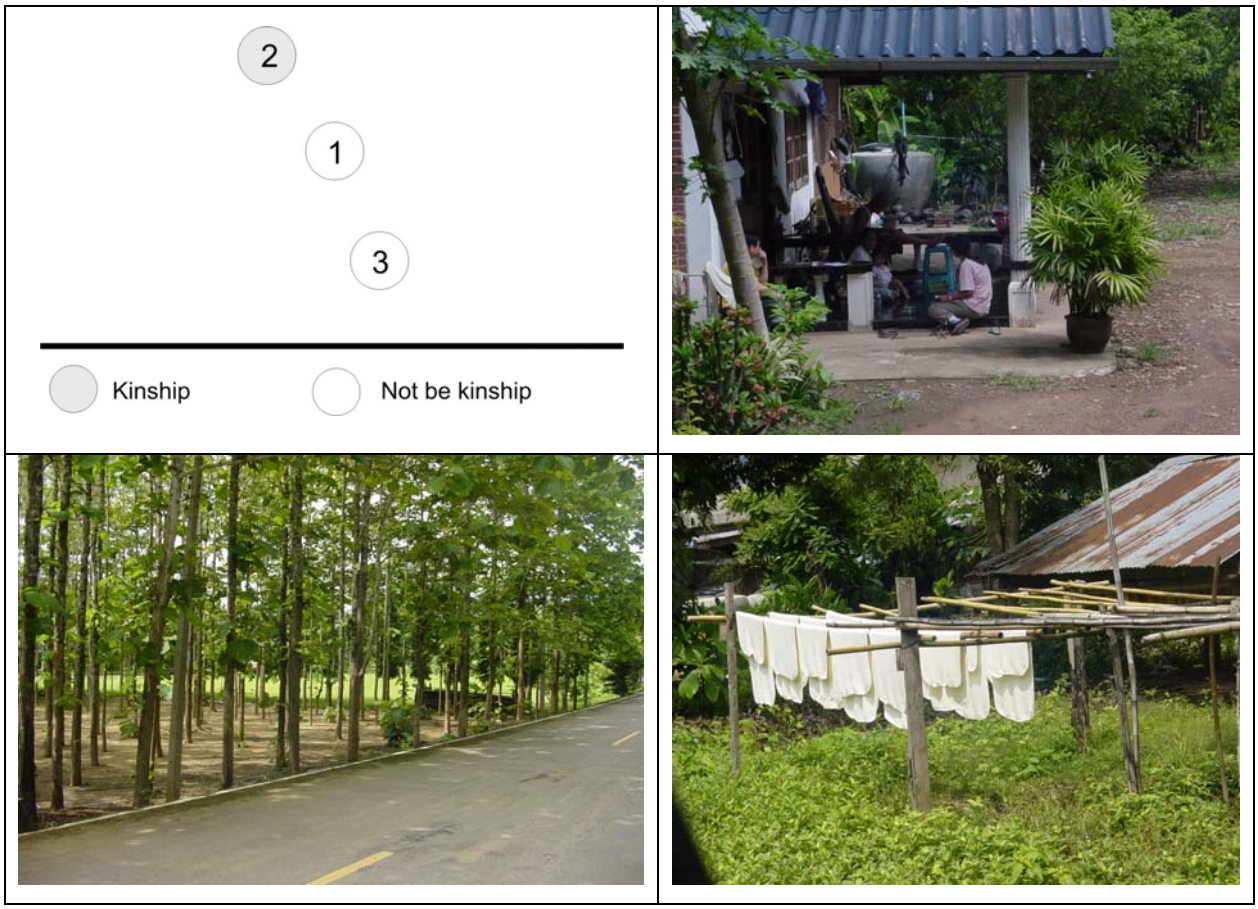



**Figure 3.6** Living locality and relationship between the focus and surrounding houses in uplands

The elderly couple in house no.1 gives researcher some beneficial information as the house no.2 is belonged to her sister. Her sister lives with her married son and single daughter. In the past, the couple lived with their daughter but nowadays she migrates to live with her spouse in Chonburi province. Then, role for taking care them (the elderly couple) is moved to their niece and nephew in house no.2. Fortunately, both of them are very strong and can do daily activities by themselves. Moreover, her daughter sends remittance back every month which allows them having enough money for living expenditure. Their niece and nephew always help them for buying some stuffs, riding them to the temple or public health station by motorcycle and helping them for repairing some broken furniture etc.

In conclusion, finding from field study confirms that the role of kin and non-kin people for supporting the elderly and children left behind is quite strong. Moreover, in some areas, the more number of people as kin and non-kin living with those vulnerable people means the more chance for people to make decision for migrating out.

# CHAPTER IV
# RESULTS

This chapter gives an overall picture and process of study step by step from the finding on influence of labor force age out migration and density of living locality to the living arrangement of the elderly and children. Firstly, field work results in 5 villages in Kanchanaburi province for finding the relationship between the elderly and children's living arrangement when migrants move out and role of kin and non-kin people in taking care the left behind is revealed. Secondly, descriptive analysis is employed to describe characteristics of Kanchanaburi province and KDSS labor migrants, the elderly and children as well as the living locality of the study. Then, an analysis on influences of existential locality is investigated on migration of those of labor force age. Fourthly, an analysis of influences of existential locality to migration duration is presented. Lastly, analysis on influence of existential locality and labor force age out migration on elderly and children's living arrangement is investigated through multivariate analysis. Household and individual factors are included.

The first part on migration decision making is based on the fact that in rural Thai society people are tied to their relatives in their hometown. People who migrate out normally send their remittance and come back to visit their relatives left behind. Even though ties with the relatives in the hometown is a psychological matter which is not easy to measure, its existence and power in soothing concern among those who are migrants is accepted. Thus, this part is mainly aimed to prove whether kinship system is a cause of labor force age migration or not. Logistic regression is employed as a method in this part (Figure 4.1).

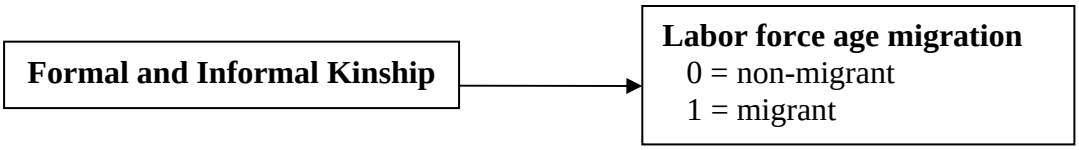



**Figure 4.1** Study cause and consequence of labor force age migration

## 4.1 Influence of existential locality (EL) on migrant's decision making

Most previous studies mentioned that decision making to migrate among labor force normally depends on economic benefit they expect to gain in the place of destination. In Thailand, poverty is a main source of family problems while migration is an effective way of alleviating it. Other studies mentioned that the extended family in Thai society plays a critical role in mitigating the negative effect on those who left behind. Bryant (2005) revealed that children of migrants are more likely to have relatives living in the same household to take care of them (Bryant, 2005). Very few studies explore the role of kin and non-kin as a condition for migrants to make a decision for migrating.

This part is intended to explore the role of kin and non-kin measured by a dummy variable of having at least one house and having two houses and more within 150 meters on migrants' decision making. Having at least 2 houses is employed as an independent variable. The dependent variables whether or not an individual is a migrant. Other influential variables, considered as controlled variables, are personal characteristics of migrants including age, gender and marital status, economic variables of household economic status and debt, and household size measured through number of people in each age group and total members in household. This step of study is based on the assumption that the higher density of surrounding houses leads to the higher probability the migrants moving out.

Unit of analysis in this part is individual. The study sample are those aged 15-59 who migrated last year (10,104 persons) and those who still lived in the study area (25,555 persons), In total, there are 35,659 persons included in the analysis. Among them, there are 16,643 males accounting for 46.67 percent and 19,016 females accounting for 53.55 percent. 27.5 percent of them were single, while majority were married at 65.0 percent and the 7.4 percent left were those who were separated, divorced or widowed. Labor force aged migrants and non-migrants are explained according to strata in Table 4.1 below.

**Table 4.1** The number of labor force aged migrated and not migrated, classified by strata

| Strata | Labor force age | | Total |
|---|---|---|---|
| | Migrated | Not migrate | |
| - Urban/semi urban | 26.2% (1,907) | 73.8% (5,371) | 100.0% (7,278) |
| - Rice field | 27.1% (1,549) | 72.9% (4,183) | 100.0% (5,732) |
| - Plantation | 28.3% (1,597) | 71.6%(4,040) | 100.0% (5,637) |
| - Uplands | 30.9% (2,924) | 69.1% (6,528) | 100.0% (9,452) |
| - Mixed economy | 28.1% (2,127) | 71.8% (5,433) | 100.0% (7,560) |
| Total | 28.3% (10,104) | 71.7% (25,555) | 100.0% (35,659) |

**Table 4.2** Frequency in number of all variables in urban/semi urban stratum

| Variable | Migration | | | | Total | |
|---|---|---|---|---|---|---|
| | Migrated | | Not migrated | | | |
| Age of migrant | | | | | | |
| 15-30 years old | 64.1 | 1,855 | 35.9 | 1,037 | 100.0 | 2,892 |
| 31-45 years old | 83.5 | 2,095 | 16.5 | 415 | 100.0 | 2,510 |
| 46-59 years old | 91.7 | 1,421 | 8.3 | 128 | 100.0 | 1,549 |
| Sex of migrant | | | | | | |
| Female | 78.2 | 2,958 | 21.8 | 824 | 100.0 | 3,782 |
| Male | 76.1 | 2,413 | 23.9 | 756 | 100.0 | 3,169 |
| Marital Status of migrant | | | | | | |
| Single | 68.0 | 1,440 | 32.0 | 678 | 100.0 | 2,118 |
| Married | 82.4 | 3,445 | 17.6 | 735 | 100.0 | 4,180 |
| Widow/Divorced/ Separated | 75.2 | 486 | 24.8 | 160 | 100.0 | 646 |
| have less than 2 houses within 150m | 76.8 | 5126 | 23.2 | 1552 | 100.0 | 6678 |
| have 2 houses and more within 150m | 89.7 | 245 | 10.3 | 28 | 100.0 | 273 |
| Household economic | | | | | | |
| Middle | 76.3 | 904 | 23.7 | 281 | 100.0 | 1,185 |
| Poor | 71.8 | 673 | 28.2 | 264 | 100.0 | 937 |
| Rich | 78.6 | 3,794 | 21.4 | 1,035 | 100.0 | 4,829 |
| Household debt | 76.7 | 3,834 | 23.3 | 1,162 | 100.0 | 4,996 |
| Household member | | | | | | |
| 1-4 household members | 83.7 | 2,955 | 16.3 | 575 | 100.0 | 3,530 |
| 5-9 household members | 72.0 | 2,168 | 28.0 | 842 | 100.0 | 3,010 |
| > 9 household members | 60.3 | 248 | 39.7 | 163 | 100.0 | 411 |
| No. of migrant in HH | | | | | | |
| 1-4 migrant in HH | 81.2 | 4,097 | 18.8 | 946 | 100.0 | 5,043 |
| 5-9 migrant in HH | 66.9 | 1,234 | 33.1 | 611 | 100.0 | 1,845 |
| > 9 migrant in HH | 63.5 | 40 | 36.5 | 23 | 100.0 | 63 |
| No. of children in HH | | | | | | |
| no children in HH | | 0 | | 0 | | 0 |
| 1-4 children in HH | 78.8 | 4,843 | 21.2 | 1,303 | 100.0 | 6,146 |
| 5-9 children in HH | 67.9 | 486 | 32.1 | 230 | 100.0 | 716 |
| > 9 children in HH | 47.2 | 42 | 52.8 | 47 | 100.0 | 89 |
| No. of elderly in HH | | | | | | |
| no elderly in HH | 72.1 | 1,910 | 27.9 | 738 | 100.0 | 2,648 |
| 1 elderly in HH | 82.0 | 2,766 | 18.0 | 608 | 100.0 | 3,374 |
| > 1 elderly in HH | 74.8 | 695 | 25.2 | 234 | 100.0 | 929 |

**Table 4.3** Frequency in number of all variables in rice field stratum

| Variable | Migration | | | | Total | |
|---|---|---|---|---|---|---|
| | Migrated | | Not migrated | | | |
| Age of migrant | | | | | | |
| 15-30 years old | 57.4 | 1,396 | 42.6 | 1,035 | 100.0 | 2,431 |
| 31-45 years old | 82.6 | 1,720 | 17.4 | 362 | 100.0 | 2,082 |
| 46-59 years old | 92.5 | 1,067 | 7.5 | 87 | 100.0 | 1,154 |
| Sex of migrant | | | | | | |
| Female | 76.1 | 2,279 | 23.9 | 717 | 100.0 | 2,996 |
| Male | 71.3 | 1,904 | 28.7 | 767 | 100.0 | 2,671 |
| Marital Status of migrant | | | | | | |
| Single | 62.5 | 960 | 37.5 | 577 | 100.0 | 1,537 |
| Married | 79.7 | 2,926 | 20.3 | 747 | 100.0 | 3,673 |
| Widow/Divorced/ Separated | 65.1 | 297 | 34.9 | 159 | 100.0 | 456 |
| have less than 2 houses within 150m | 73.6 | 4100 | 26.4 | 1471 | 100.0 | 5571 |
| have 2 houses and more within 150m | 86.5 | 83 | 13.5 | 13 | 100.0 | 96 |
| Household economic | | | | | | |
| Middle | 72.9 | 999 | 27.1 | 371 | 100.0 | 1,370 |
| Poor | 68.1 | 1,101 | 31.9 | 516 | 100.0 | 1,617 |
| Rich | 77.7 | 2,083 | 22.3 | 597 | 100.0 | 2,680 |
| Household debt | 73.6 | 3,713 | 26.4 | 1,330 | 100.0 | 5,043 |
| Household member | | | | | | |
| 1-4 household members | 82.0 | 2,158 | 18.0 | 474 | 100.0 | 2,632 |
| 5-9 household members | 68.4 | 1,924 | 31.6 | 887 | 100.0 | 2,811 |
| > 10 household members | 45.1 | 101 | 54.9 | 123 | 100.0 | 224 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 78.2 | 3,309 | 21.8 | 924 | 100.0 | 4,233 |
| 5-9 migrants in HH | 61.5 | 859 | 38.5 | 537 | 100.0 | 1,396 |
| > 10 migrants in HH | 39.5 | 15 | 60.5 | 23 | 100.0 | 38 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 74.7 | 3,949 | 25.3 | 1,335 | 100.0 | 5,284 |
| 5-9 children in HH | 63.2 | 192 | 36.8 | 112 | 100.0 | 304 |
| > 10 children in HH | 53.2 | 42 | 46.8 | 37 | 100.0 | 79 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 70.7 | 930 | 29.3 | 386 | 100.0 | 1,316 |
| 1 elderly in household | 74.7 | 2,250 | 25.3 | 761 | 100.0 | 3,011 |
| > 1 elderly in household | 74.9 | 1,003 | 25.1 | 337 | 100.0 | 1,340 |

**Table 4.4** Frequency in number of all variables in plantation stratum

| Variable | Migration | | | | Total | |
|---|---|---|---|---|---|---|
| | Migrated | | Not migrated | | | |
| Age of migrant | | | | | | |
| 15-30 years old | 58.0 | 1,421 | 42.0 | 1,027 | 100.0 | 2,448 |
| 31-45 years old | 81.4 | 1,631 | 18.6 | 373 | 100.0 | 2,004 |
| 46-59 years old | 92.2 | 988 | 7.8 | 84 | 100.0 | 1,072 |
| Sex of migrant | | | | | | |
| Female | 75.4 | 2,136 | 24.6 | 698 | 100.0 | 2,834 |
| Male | 70.8 | 1,904 | 29.2 | 786 | 100.0 | 2,690 |
| Marital Status of migrant | | | | | | |
| Single | 59.6 | 773 | 40.4 | 525 | 100.0 | 1,298 |
| Married | 78.2 | 2,983 | 21.8 | 832 | 100.0 | 3,815 |
| Widow/Divorced/ Separated | 69.4 | 284 | 30.6 | 125 | 100.0 | 409 |
| have less than 2 houses within 150m | 72.6 | 3909 | 27.4 | 1473 | 100.0 | 5382 |
| have 2 houses and more within 150m | 92.3 | 131 | 7.7 | 11 | 100.0 | 142 |
| Household economic | | | | | | |
| Middle | 71.8 | 996 | 28.2 | 391 | 100.0 | 1,387 |
| Poor | 71.1 | 1,371 | 28.9 | 558 | 100.0 | 1,929 |
| Rich | 75.8 | 1,673 | 24.2 | 535 | 100.0 | 2,208 |
| Household debt | 72.5 | 3,455 | 27.5 | 1,311 | 100.0 | 4,766 |
| Household member | | | | | | |
| 1-4 household members | 83.1 | 2,197 | 16.9 | 447 | 100.0 | 2,644 |
| 5-9 household members | 64.6 | 1,720 | 35.4 | 943 | 100.0 | 2,663 |
| > 10 household members | 56.7 | 123 | 43.3 | 94 | 100.0 | 217 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 78.1 | 3,156 | 21.9 | 887 | 100.0 | 4,043 |
| 5-9 migrants in HH | 60.0 | 877 | 40.0 | 584 | 100.0 | 1,461 |
| > 10 migrants in HH | 35.0 | 7 | 65.0 | 13 | 100.0 | 20 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 74.5 | 3,713 | 25.5 | 1,272 | 100.0 | 4,985 |
| 5-9 children in HH | 61.2 | 287 | 38.8 | 182 | 100.0 | 469 |
| > 10 children in HH | 57.1 | 40 | 42.9 | 30 | 100.0 | 70 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 72.8 | 1,337 | 27.2 | 499 | 100.0 | 1,836 |
| 1 elderly in household | 74.7 | 1,962 | 25.3 | 666 | 100.0 | 2,628 |
| > 1 elderly in household | 69.9 | 741 | 30.1 | 319 | 100.0 | 1,060 |

**Table 4.5** Frequency in number of all variables in uplands stratum

| Variable | Migration | | | | Total | |
|---|---|---|---|---|---|---|
| | Migrated | | Not migrated | | | |
| Age of migrant | | | | | | |
| 15-30 years old | 52.9 | 2,174 | 47.1 | 1,933 | 100.0 | 4,107 |
| 31-45 years old | 82.2 | 2,745 | 17.8 | 593 | 100.0 | 3,338 |
| 46-59 years old | 89.5 | 1,609 | 10.5 | 188 | 100.0 | 1,797 |
| Sex of migrant | | | | | | |
| Female | 73.8 | 3407 | 26.2 | 1208 | 100.0 | 4,615 |
| Male | 67.5 | 3121 | 32.5 | 1506 | 100.0 | 4,627 |
| Marital status of migrant | | | | | | |
| Single | 47.4 | 1016 | 52.6 | 1127 | 100.0 | 2,143 |
| Married | 78.6 | 5109 | 21.4 | 1390 | 100.0 | 6,499 |
| Widow/Divorced/ Separated | 67.2 | 403 | 32.8 | 197 | 100.0 | 600 |
| have less than 2 houses within 150m | 69.9 | 6208 | 30.1 | 2672 | 100.0 | 8,880 |
| have 2 houses and more within 150m | 88.4 | 320 | 11.6 | 42 | 100.0 | 362 |
| Household economic | | | | | | |
| Middle | 69.6 | 1064 | 30.4 | 464 | 100.0 | 1,528 |
| Poor | 69.8 | 3964 | 30.2 | 1715 | 100.0 | 5,679 |
| Rich | 73.8 | 1500 | 26.2 | 533 | 100.0 | 2,033 |
| Household debt | 69.5 | 4596 | 30.5 | 2016 | 100.0 | 6,612 |
| Household member | | | | | | |
| 1-4 household members | 82.4 | 3,143 | 17.6 | 670 | 100.0 | 3,813 |
| 5-9 household members | 64.9 | 3,147 | 35.1 | 1,704 | 100.0 | 4,851 |
| > 10 household members | 41.2 | 238 | 58.8 | 340 | 100.0 | 578 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 76.8 | 5,242 | 23.2 | 1,581 | 100.0 | 6,823 |
| 5-9 migrants in HH | 53.8 | 1,261 | 46.2 | 1,085 | 100.0 | 2,346 |
| > 10 migrants in HH | 34.2 | 25 | 65.8 | 48 | 100.0 | 73 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 74.0 | 5,486 | 26.0 | 1,929 | 100.0 | 7,415 |
| 5-9 children in HH | 61.4 | 845 | 38.6 | 532 | 100.0 | 1,377 |
| > 10 children in HH | 43.8 | 197 | 56.2 | 253 | 100.0 | 450 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 67.9 | 3,895 | 32.1 | 1,841 | 100.0 | 5,736 |
| 1 elderly in household | 75.7 | 2,063 | 24.3 | 662 | 100.0 | 2,725 |
| > 1 elderly in household | 73.0 | 570 | 27.0 | 211 | 100.0 | 781 |

**Table 4.6** Frequency in number of all variables in mixed economy stratum

| Variable | Migration | | | | Total | |
|---|---|---|---|---|---|---|
| | Migrated | | Not migrated | | | |
| Age of migrant | | | | | | |
| 15-30 years old | 58.5 | 1,853 | 41.5 | 1,315 | 100.0 | 3,168 |
| 31-45 years old | 81.1 | 2,116 | 18.9 | 493 | 100.0 | 2,609 |
| 46-59 years old | 89.6 | 1,464 | 10.4 | 170 | 100.0 | 1,634 |
| Sex of migrant | | | | | | |
| Female | 75.2 | 2,935 | 24.8 | 968 | 100.0 | 3,903 |
| Male | 71.2 | 2,498 | 28.8 | 1,010 | 100.0 | 3,508 |
| Marital status of migrant | | | | | | |
| Single | 59.4 | 1101 | 40.6 | 754 | 100.0 | 1855 |
| Married | 78.5 | 3939 | 21.5 | 1076 | 100.0 | 5015 |
| Widow/Divorced/ Separated | 72.8 | 393 | 27.2 | 147 | 100.0 | 540 |
| have less than 2 houses within 150m | 73.0 | 5288 | 27.0 | 1959 | 100.0 | 7247 |
| have 2 houses and more within 150m | 88.4 | 145 | 11.6 | 19 | 100.0 | 164 |
| Household economic | | | | | | |
| Middle | 70.9 | 1045 | 29.1 | 429 | 100.0 | 1474 |
| Poor | 69.1 | 1195 | 30.9 | 535 | 100.0 | 1730 |
| Rich | 75.9 | 3193 | 24.1 | 1014 | 100.0 | 4207 |
| Household debt | 29.6 | 311 | 70.4 | 738 | 100.0 | 1,049 |
| Household member | | | | | | |
| 1-4 household members | 81.2 | 2,671 | 18.8 | 618 | 100.0 | 3,289 |
| 5-9 household members | 68.2 | 2,512 | 31.8 | 1,171 | 100.0 | 3,683 |
| > 10 household members | 56.9 | 250 | 43.1 | 189 | 100.0 | 439 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 77.6 | 4,072 | 22.4 | 1,177 | 100.0 | 5,249 |
| 5-9 migrants in HH | 63.1 | 1,320 | 36.9 | 772 | 100.0 | 2,092 |
| > 10 migrants in HH | 58.6 | 41 | 41.4 | 29 | 100.0 | 70 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 75.0 | 4,918 | 25.0 | 1,638 | 100.0 | 6,556 |
| 5-9 children in HH | 65.3 | 393 | 34.7 | 209 | 100.0 | 602 |
| > 10 children in HH | 48.2 | 122 | 51.8 | 131 | 100.0 | 253 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 68.7 | 1,681 | 31.3 | 767 | 100.0 | 2,448 |
| 1 elderly in household | 76.1 | 2,769 | 23.9 | 871 | 100.0 | 3,640 |
| > 1 elderly in household | 74.3 | 983 | 25.7 | 340 | 100.0 | 1,323 |

**Table 4.7** Descriptive data related to variables

| | Urban/semi-urban | | | rice field | | | Plantation | | | Uplands | | | mixed economy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** |
| Age of migrant | 7,278 | 33.83 | 12.25 | 5,732 | 33.78 | 12.15 | 5,637 | 33.36 | 12.02 | 9,452 | 33.07 | 12.1 | 7,560 | 33.92 | 12.26 |
| Sex of migrant | 7,278 | 0.48 | 0.5 | 5,732 | 0.48 | 0.5 | 5,637 | 0.5 | 0.5 | 9,452 | 0.51 | 0.5 | 7,560 | 0.48 | 0.5 |
| Marital status of migrant | | | | | | | | | | | | | | | |
| - Single | 7,271 | 0.34 | 0.47 | 5,731 | 0.28 | 0.45 | 5,635 | 0.25 | 0.43 | 9,452 | 0.25 | 0.43 | 7,559 | 0.27 | 0.44 |
| - Married | 7,271 | 0.57 | 0.49 | 5,731 | 0.64 | 0.48 | 5,635 | 0.68 | 0.47 | 9,452 | 0.69 | 0.46 | 7,559 | 0.66 | 0.47 |
| - divorced, widow, separated | 7,271 | 0.09 | 0.28 | 5,731 | 0.08 | 0.27 | 5,635 | 0.07 | 0.26 | 9,452 | 0.06 | 0.24 | 7,559 | 0.07 | 0.26 |
| Number of elderly in HH | 6,965 | 0.2 | 0.55 | 5,678 | 0.22 | 0.57 | 5,531 | 0.17 | 0.49 | 9,298 | 0.14 | 0.44 | 7,419 | 0.18 | 0.52 |
| Number of children in HH | 6,965 | 0.29 | 0.7 | 5,678 | 0.35 | 0.74 | 5,531 | 0.35 | 0.78 | 9,298 | 0.45 | 0.93 | 7,419 | 0.33 | 0.75 |
| Household economic status | | | | | | | | | | | | | | | |
| - poor | 7,278 | 0.13 | 0.33 | 5,732 | 0.28 | 0.45 | 5,637 | 0.34 | 0.47 | 9,452 | 0.6 | 0.49 | 7,560 | 0.23 | 0.42 |
| - middle | 7,278 | 0.16 | 0.37 | 5,732 | 0.24 | 0.43 | 5,637 | 0.25 | 0.43 | 9,452 | 0.16 | 0.37 | 7,560 | 0.19 | 0.4 |
| -rich | 7,278 | 0.66 | 0.47 | 5,732 | 0.47 | 0.5 | 5,637 | 0.39 | 0.49 | 9,452 | 0.22 | 0.41 | 7,560 | 0.56 | 0.5 |
| Household debt | 6,951 | 0.72 | 0.45 | 5,667 | 0.89 | 0.31 | 5,524 | 0.86 | 0.34 | 9,281 | 0.72 | 0.45 | 7,411 | 0.81 | 0.39 |
| Existential locality | 7,278 | 0.84 | 3.91 | 5,732 | 0.07 | 0.57 | 5,637 | 0.13 | 0.84 | 9,452 | 0.16 | 0.92 | 7,560 | 0.11 | 0.77 |

**Table 4.8** The exponential coefficient from binary logit model predicting the odds of migrating out by stratum

| Independent variable | Urban | | Rice | | Plantation | | Uplands | | Mixed economy | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. |
| Age | 0.58**** | 0.003 | 0.92**** | 0.004 | 0.93**** | 0.004 | 1.01**** | 0.003 | 0.94**** | 0.003 |
| Sex | | | | | | | | | | |
| Female (ref.) | | | | | | | | | | |
| Male | 1.12 | 0.062 | 1.37**** | 0.068 | 1.03**** | 0.068 | 1.43**** | 0.054 | 1.02**** | 0.057 |
| Marital Status | | | | | | | | | | |
| Single (ref.) | | | | | | | | | | |
| Married | 0.85** | 0.077 | 1.11 | 0.085 | 1.06 | 0.087 | 0.67**** | 0.070 | 0.86** | 0.072 |
| Widow/Divorced/ Separated | 1.65**** | 0.123 | 3.10**** | 0.141 | 2.26**** | 0.149 | 1.01**** | 0.001 | 1.05**** | 0.128 |
| Household economic | Status | | | | | | | | | |
| Middle (ref.) | | | | | | | | | | |
| Poor | 1.38** | 0.107 | 1.37*** | 0.091 | 1.18** | 0.087 | 0.98 | 0.073 | 1.30*** | 0.085 |
| Rich | 0.79** | 0.083 | 0.66**** | 0.086 | 0.64**** | 0.088 | 0.70**** | 0.086 | 0.69**** | 0.007 |
| Household debt | 1.06 | 0.070 | 1.01 | 0.111 | 1.17 | 0.103 | 1.25**** | 0.061 | 1.38**** | 0.076 |
| Household member | 1.09**** | 0.022 | 1.13**** | 0.024 | 1.14**** | 0.025 | 1.14**** | 0.018 | 1.06*** | 0.020 |
| No. of migrants in HH | 1.09** | 0.031 | 1.16**** | 0.032 | 1.18**** | 0.032 | 1.16**** | 0.024 | 1.14**** | 0.028 |
| No. of child in HH | 1.07**** | 0.001 | 1.04** | 0.018 | 1.08**** | 0.017 | 1.06**** | 0.010 | 1.06**** | 0.012 |
| No. of elderly in HH | 0.80**** | 0.047 | 0.42 | 0.050 | 1.10** | 0.047 | 1.02**** | 0.042 | 0.84**** | 0.042 |
| Existential locality at 150 m | 0.54*** | 0.211 | 0.67 | 0.310 | 0.40*** | 0.325 | 0.63*** | 0.174 | 0.57** | 0.253 |
| N | 6944 | | 5666 | | 5522 | | 9240 | | 7410 | |
| D.F. | 12 | | 12 | | 12 | | 12 | | 12 | |
| Model Chi-square | 854..24 | | 1120.04 | | 1023.51 | | 2200.33 | | 792.18 | |
| P value | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | |

**** p< .001 *** p< .01 ** p<.05 * p<.10

The coefficients presented in Table 4.8 above are in the form of odd ratios. An odd ratio greater than 1 indicates that the independent variable increases the log odds when all else is equal. On the contrary, an odds ratio less than 1 indicates that the independent variable decreases the log odds. The Table above shows that persons who have formal and informal kinship in 150 meter of radius are less likely to migrate than those who have no nearby houses within 150 radius by 46, 60, 37 and 43 percent in urban, plantation, uplands and mixed economy strata respectively. This finding is in accordance with a study of Sutthirat (1999) which explains that kinship community has a main role on expanding network for accessing resources. It means that one living in a community where the role of kin is strong can access resources which make him not have any need to migrate out for getting resources in other places (Sutthirat, 1999). The higher in age is the less probability of migrants to migrate in every stratum, except in uplands where the higher age means the higher probability to move out. Males tend to migrate around 0.02- 0.43 times more than females in every stratum. Married people are less likely to migrate by 15, 33 and 14 percent than single persons in urban, uplands and mixed economy strata respectively. Persons who are separated/widow and divorced tend to migrate 2 times more than single persons in all strata.

When household economic status was put into the model, the finding shows that a member of a poor household is more likely to migrate than those from a moderate one at 0.2-0.4 times by average in all strata. In contrast, a member of a rich household is less likely to migrate than the moderate one by 21-36 percent among strata. In terms of debt, a household having debt is more likely to migrate than those having no debt by around 1.5 times for all strata. This finding is in accordance with Lee's theory of migration (1969) which mentioned that economic conditions are one among many push factors pushing the poor to migrate out for a better chance of living.

In terms of household size, the finding from this study shows that the higher the number of household members, the higher chance for migrants to migrate out for all types of strata. At the same time, having higher number of migrants and

children in household means a chance to migrate among migrants having to increase simultaneously. This finding is in accordance with a study of Stark (1982) which mentioned that migration is a household strategy the family uses as a safety valve for correcting some problems relating to economic reasons. Something interesting found in this study is that households having the elderly in urban, rice and mixed economy strata are less likely to have migrants who migrate out, while the converse occurred in plantation and uplands as the greater number of elderly was associated with a greater likelihood for migrants to migrate out.

## 4.2 Influence of existential locality (EL) on migration duration

Duration of migration among migrants directly relates to many conditions such as purpose of migration, successfulness of migrants in destination, concern/ unconcern for those who are left behind as well as work condition of migrants in place of destination. There are some studies demonstrating that unconcern for those who are left behind is one strongly influential condition for migration pattern and duration in Thailand (Ritcher et. al, 1997 and Samakkarn, 2002). Normally, migrants who have married and have kids tend to bring their kids to live with them in place of destination. But bringing kids to live with migrated parents might not be possible for every family since living expense in the city is quite high, especially among parents who work as unskilled laborers (Archavanitkul, 1993). Under this condition, some parents have left their kids in their hometown in rural areas under the responsibility of the kids' grandparents in order to reduce daily expenditure cost of the kids and let parents feel comfortable to work to earn more income.

This step is aimed to clarify and answer the research question as to whether kinship system directly affects migration among the labor age people. If findings from this step show clearly that the larger number of formal and informal kinship houses means the longer time measured in terms of month migrants spend in their place of destination, the research question is answered as kinship system in Thai society takes a very important role for migration decision making among those of labor force age. (figure 4.2).

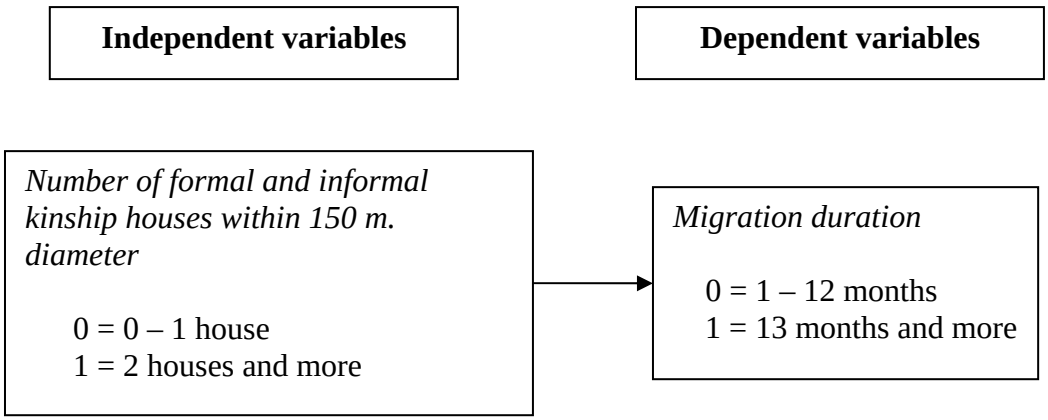



**Figure 4.2** Study on the relation between existential locality and migration duration

Study sample in this part is people in labor force age who have already migrated out and had not returned yet in the year of study (2004) at 9,236 persons. Among them, there are 4,823 males accounting for 52.2 percent and 4,413 females accounting for 47.8 percent. There are 39.6 percent of them being single, while the most part is married by 51.7 percent and 8.7 percent left are those who separated, divorced and widow. Explained according to strata, there are labor force aged migrants as in the Table 4.9 below.

**Table 4.9** Descriptive data of migrants divided by stratum

| | Strata | | | | | Total |
|---|---|---|---|---|---|---|
| | urban | Rice | plantation | Uplands | Mixed eco | |
| **Age group of migrant** | | | | | | |
| -15-30 years old | 1,035 | 1,048 | 1,027 | 1,930 | 1,306 | 6,346 |
| -31-45 years old | 412 | 363 | 370 | 593 | 495 | 2,233 |
| -46-59 years old | 128 | 89 | 87 | 186 | 167 | 657 |
| **Sex of migrant** | | | | | | |
| - Male | 757 | 774 | 782 | 1,502 | 1,008 | 4,823 |
| - Female | 818 | 726 | 702 | 1,207 | 960 | 4,413 |
| **Marital status of migrant** | 679 | 582 | 527 | 1,126 | 747 | 3,661 |
| - Single | 729 | 760 | 827 | 1,388 | 1,072 | 4,776 |
| - Married | 167 | 158 | 130 | 195 | 149 | 799 |
| - Widow, divorced, separated | | | | | | |
| **Migration duration** | | | | | | |
| - less than 1 year | 530 | 466 | 452 | 829 | 607 | 2,884 |
| - more than 1 years | 1,045 | 1,034 | 1,032 | 1,880 | 1,361 | 6,352 |

**Table 4.10** Frequency in number of all variables in urban/semi-urban stratum

| Variable | Duration of migration | | | | Total | |
|---|---|---|---|---|---|---|
| | < 1 year | | > 1 year | | | |
| Age of migrant | | | | | | |
| 15-29 years old | 33.3 | 345 | 66.7 | 690 | 100.0 | 1,035 |
| 30-44 years old | 34.5 | 142 | 65.5 | 270 | 100.0 | 412 |
| 45-59 years old | 33.6 | 43 | 66.4 | 85 | 100.0 | 128 |
| Sex of migrant | | | | | | |
| Female | 32.0 | 262 | 68.0 | 556 | 100.0 | 818 |
| Male | 35.4 | 268 | 64.6 | 489 | 100.0 | 757 |
| Marital status of migrant | | | | | | |
| Single | 35.3 | 240 | 64.7 | 439 | 100.0 | 679 |
| Married | 32.5 | 237 | 67.5 | 492 | 100.0 | 729 |
| Widow/Divorced/ Separated | 31.7 | 53 | 68.3 | 114 | 100.0 | 167 |
| Have less than 2 houses within 150m | 32.3 | 481 | 67.7 | 1010 | 100.0 | 1491 |
| Have 2 houses and more within 150m | 58.3 | 49 | 41.7 | 35 | 100.0 | 84 |
| Household economic | | | | | | |
| Middle | 42.2 | 128 | 57.8 | 175 | 100.0 | 303 |
| Poor | 44.1 | 131 | 55.9 | 166 | 100.0 | 297 |
| Rich | 35.2 | 342 | 64.8 | 629 | 100.0 | 971 |
| Household debt | 31.6 | 249 | 68.4 | 539 | 100.0 | 788 |
| Household member | | | | | | |
| 1-4 household members | 34.8 | 24 | 65.2 | 45 | 100.0 | 69 |
| 5-9 household members | 34.7 | 488 | 65.3 | 917 | 100.0 | 1,405 |
| > 9 household members | 17.8 | 18 | 82.2 | 83 | 100.0 | 101 |
| No. of migrant in HH | | | | | | |
| 1-4 migrant in HH | 34.2 | 518 | 65.8 | 995 | 100.0 | 1,513 |
| >4 migrant in HH | 19.4 | 12 | 80.6 | 50 | 100.0 | 62 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 34.7 | 500 | 65.3 | 940 | 100.0 | 1,440 |
| 5-9 children in HH | 21.2 | 24 | 78.8 | 89 | 100.0 | 113 |
| > 9 children in HH | 27.3 | 6 | 72.7 | 16 | 100.0 | 22 |
| No. of elderly in HH | | | | | | |
| No elderly in household | 32.9 | 296 | 67.1 | 605 | 100.0 | 901 |
| 1 elderly in household | 34.5 | 180 | 65.5 | 342 | 100.0 | 522 |
| > 1 elderly in household | 35.5 | 54 | 64.5 | 98 | 100.0 | 152 |

**Table 4.11** Frequency in number of all variables in rice field stratum

| Variable | Duration of migration | | | | Total | |
|---|---|---|---|---|---|---|
| | < 1 year | | > 1 year | | | |
| Age of migrant | | | | | | |
| 15-29 years old | 31.3 | 328 | 68.7 | 720 | 100.0 | 1,048 |
| 30-44 years old | 27.5 | 100 | 72.5 | 263 | 100.0 | 363 |
| 45-59 years old | 42.7 | 38 | 57.3 | 51 | 100.0 | 89 |
| Sex of migrant | | | | | | |
| Female | 29.3 | 213 | 70.7 | 513 | 100.0 | 726 |
| Male | 32.7 | 253 | 67.3 | 521 | 100.0 | 774 |
| Marital status of migrant | | | | | | |
| Single | 31.3 | 182 | 68.7 | 400 | 100.0 | 582 |
| Married | 30.8 | 234 | 69.2 | 526 | 100.0 | 760 |
| Widow/Divorced/ Separated | 31.6 | 50 | 68.4 | 108 | 100.0 | 158 |
| Have less than 2 houses within 150m | 30.8 | 455 | 69.2 | 1023 | 100.0 | 1478 |
| Have 2 houses and more within 150m | 50.0 | 11 | 50.0 | 11 | 100.0 | 22 |
| Household economic | | | | | | |
| Middle | 29.1 | 107 | 70.9 | 260 | 100.0 | 367 |
| Poor | 28.6 | 116 | 71.4 | 290 | 100.0 | 406 |
| Rich | 35.8 | 260 | 64.2 | 467 | 100.0 | 727 |
| Household debt | 32.6 | 188 | 67.4 | 389 | 100.0 | 577 |
| Household member | | | | | | |
| 1-4 household members | 37.5 | 6 | 62.5 | 10 | 100.0 | 16 |
| 5-9 household members | 31.2 | 191 | 68.8 | 421 | 100.0 | 612 |
| > 10 household members | 30.8 | 269 | 69.2 | 603 | 100.0 | 872 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 30.4 | 394 | 69.6 | 903 | 100.0 | 1,297 |
| > 4 migrants in HH | 35.5 | 72 | 64.5 | 131 | 100.0 | 203 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 31.4 | 193 | 68.6 | 422 | 100.0 | 615 |
| 5-9 children in HH | 30.4 | 160 | 69.6 | 367 | 100.0 | 527 |
| > 10 children in HH | 31.6 | 113 | 68.4 | 245 | 100.0 | 358 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 29.8 | 311 | 70.2 | 732 | 100.0 | 1,043 |
| 1 elderly in household | 30.8 | 49 | 69.2 | 110 | 100.0 | 159 |
| > 1 elderly in household | 35.6 | 106 | 64.4 | 192 | 100.0 | 298 |

**Table 4.12** Frequency in number of all variables in plantation stratum

| Variable | Duration of migration | | | | Total | |
|---|---|---|---|---|---|---|
| | < 1 year | | > 1 year | | | |
| Age of migrant | | | | | | |
| 15-29 years old | 31.0 | 318 | 69.0 | 709 | 100.0 | 1,027 |
| 30-44 years old | 28.6 | 106 | 71.4 | 264 | 100.0 | 370 |
| 45-59 years old | 32.2 | 28 | 67.8 | 59 | 100.0 | 87 |
| Sex of migrant | | | | | | |
| Female | 28.3 | 199 | 71.7 | 503 | 100.0 | 702 |
| Male | 32.4 | 253 | 67.6 | 529 | 100.0 | 782 |
| Marital status of migrant | | | | | | |
| Single | 32.1 | 169 | 67.9 | 358 | 100.0 | 527 |
| Married | 29.4 | 243 | 70.6 | 584 | 100.0 | 827 |
| Widow/Divorced/ Separated | 30.8 | 40 | 69.2 | 90 | 100.0 | 130 |
| Have less than 2 houses within 150m | 29.9 | 431 | 70.1 | 1012 | 100.0 | 1443 |
| Have 2 houses and more within 150m | 51.2 | 21 | 48.8 | 20 | 100.0 | 41 |
| Household economic | | | | | | |
| Middle | 29.1 | 99 | 70.9 | 241 | 100.0 | 340 |
| Poor | 28.6 | 150 | 71.4 | 374 | 100.0 | 524 |
| Rich | 35.8 | 222 | 64.2 | 398 | 100.0 | 620 |
| Household debt | 31.1 | 246 | 68.9 | 546 | 100.0 | 792 |
| Household member | | | | | | |
| 1-4 household members | 45.6 | 36 | 54.4 | 43 | 100.0 | 79 |
| 5-9 household members | 31.5 | 322 | 68.5 | 699 | 100.0 | 1,021 |
| > 10 household members | 24.5 | 94 | 75.5 | 290 | 100.0 | 384 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 32.2 | 388 | 67.8 | 818 | 100.0 | 1,206 |
| > 4 migrants in HH | 23.0 | 64 | 77.0 | 214 | 100.0 | 278 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 30.0 | 291 | 70.0 | 584 | 100.0 | 875 |
| 5-9 children in HH | 23.7 | 80 | 76.3 | 187 | 100.0 | 267 |
| > 10 children in HH | 23.7 | 81 | 76.3 | 261 | 100.0 | 342 |
| No. of elderly in HH | | | | | | |
| No elderly in household | 31.0 | 315 | 69.0 | 629 | 100.0 | 944 |
| 1 elderly in household | 20.4 | 79 | 79.6 | 176 | 100.0 | 255 |
| > 1 elderly in household | 20.4 | 58 | 79.6 | 227 | 100.0 | 285 |

**Table 4.13** Frequency in number of all variables in uplands stratum

| Variable | Duration of migration | | | | Total | |
|---|---|---|---|---|---|---|
| | < 1 year | | > 1 year | | | |
| Age of migrant | | | | | | |
| 15-29 years old | 29.9 | 578 | 70.1 | 1,352 | 100.0 | 1,930 |
| 30-44 years old | 31.4 | 186 | 68.6 | 407 | 100.0 | 593 |
| 45-59 years old | 34.9 | 65 | 65.1 | 121 | 100.0 | 186 |
| Sex of migrant | | | | | | |
| Female | 30.1 | 363 | 69.9 | 844 | 100.0 | 1,207 |
| Male | 31.0 | 466 | 69.0 | 1,036 | 100.0 | 1,502 |
| Marital status of migrant | | | | | | |
| Single | 29.0 | 327 | 71.0 | 799 | 100.0 | 1,126 |
| Married | 32.6 | 452 | 67.4 | 936 | 100.0 | 1,388 |
| Widow/Divorced/ Separated | 25.6 | 50 | 74.4 | 145 | 100.0 | 195 |
| Have less than 2 houses within 150m | 29.9 | 777 | 70.1 | 1821 | 100.0 | 2598 |
| Have 2 houses and more within 150m | 46.8 | 52 | 53.2 | 59 | 100.0 | 111 |
| Household economic | | | | | | |
| Middle | 29.1 | 144 | 70.9 | 352 | 100.0 | 496 |
| Poor | 28.6 | 432 | 71.4 | 1,081 | 100.0 | 1,514 |
| Rich | 35.8 | 250 | 64.2 | 449 | 100.0 | 699 |
| Household debt | 27.6 | 223 | 72.4 | 585 | 100.0 | 808 |
| Household member | | | | | | |
| 1-4 household members | 28.1 | 34 | 71.9 | 87 | 100.0 | 121 |
| 5-9 household members | 31.1 | 765 | 68.9 | 1,691 | 100.0 | 2,456 |
| > 10 household members | 22.7 | 30 | 77.3 | 102 | 100.0 | 132 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 30.9 | 826 | 69.1 | 1,850 | 100.0 | 2,676 |
| > 4 migrants in HH | 9.1 | 3 | 90.9 | 30 | 100.0 | 33 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 28.4 | 480 | 71.6 | 1,210 | 100.0 | 1,690 |
| 5-9 children in HH | 34.9 | 346 | 65.1 | 645 | 100.0 | 991 |
| > 10 children in HH | 10.7 | 3 | 89.3 | 25 | 100.0 | 28 |
| No. of elderly in HH | | | | | | |
| No elderly in household | 31.3 | 596 | 68.7 | 1,306 | 100.0 | 1,902 |
| 1 elderly in household | 29.9 | 191 | 70.1 | 448 | 100.0 | 639 |
| > 1 elderly in household | 25.0 | 42 | 75.0 | 126 | 100.0 | 168 |

**Table 4.14** Frequency in number of all variables in mixed economy stratum

| Variable | Duration of migration | | | | Total | |
|---|---|---|---|---|---|---|
| | < 1 year | | > 1 year | | | |
| Age of migrant | | | | | | |
| 15-29 years old | 29.2 | 382 | 70.8 | 924 | 100.0 | 1,306 |
| 30-44 years old | 32.3 | 160 | 67.7 | 335 | 100.0 | 495 |
| 45-59 years old | 38.9 | 65 | 61.1 | 102 | 100.0 | 167 |
| Sex of migrant | | | | | | |
| Female | 29.8 | 286 | 70.2 | 674 | 100.0 | 960 |
| Male | 31.8 | 321 | 68.2 | 687 | 100.0 | 1,008 |
| Marital status of migrant | | | | | | |
| Single | 29.2 | 218 | 70.8 | 529 | 100.0 | 747 |
| Married | 32.1 | 344 | 67.9 | 728 | 100.0 | 1,072 |
| Widow/Divorced/ Separated | 30.2 | 45 | 69.8 | 104 | 100.0 | 149 |
| Have less than 2 houses within 150m | 30.3 | 582 | 69.7 | 1339 | 100.0 | 1921 |
| Have 2 houses and more within 150m | 53.2 | 25 | 46.8 | 22 | 100.0 | 47 |
| Household economic | | | | | | |
| Middle | 29.1 | 119 | 70.9 | 290 | 100.0 | 409 |
| Poor | 28.6 | 123 | 71.4 | 307 | 100.0 | 430 |
| Rich | 35.8 | 404 | 64.2 | 725 | 100.0 | 1,129 |
| Household debt | 29.6 | 311 | 70.4 | 738 | 100.0 | 1,049 |
| Household member | | | | | | |
| 1-4 household members | 31.1 | 23 | 68.9 | 51 | 100.0 | 74 |
| 5-9 household members | 31.3 | 426 | 68.7 | 933 | 100.0 | 1,359 |
| > 10 household members | 29.5 | 158 | 70.5 | 377 | 100.0 | 535 |
| No. of migrant in HH | | | | | | |
| 1-4 migrants in HH | 31.4 | 449 | 68.6 | 982 | 100.0 | 1,431 |
| > 4 migrants in HH | 29.4 | 158 | 70.6 | 379 | 100.0 | 537 |
| No. of children in HH | | | | | | |
| 1-4 children in HH | 31.7 | 429 | 68.3 | 925 | 100.0 | 1,354 |
| 5-9 children in HH | 26.5 | 63 | 73.5 | 175 | 100.0 | 238 |
| > 10 children in HH | 30.6 | 115 | 69.4 | 261 | 100.0 | 376 |
| No. of elderly in HH | | | | | | |
| no elderly in household | 30.8 | 326 | 69.2 | 733 | 100.0 | 1,059 |
| 1 elderly in household | 31.9 | 127 | 68.1 | 271 | 100.0 | 398 |
| > 1 elderly in household | 30.1 | 154 | 69.9 | 357 | 100.0 | 511 |

**Table 4.15** Descriptive data related to variables

| | urban/semi-urban | | | Rice field | | | plantation | | | uplands | | | mixed economy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | SD | N | Mean | SD | N | Mean | SD | N | Mean | SD | N | Mean | SD |
| Age of migrant | 1,575 | 28.47 | 9.94 | 1,500 | 27.09 | 9.40 | 1,484 | 27.25 | 9.56 | 2,709 | 26.67 | 10.09 | 1,968 | 28.05 | 10.30 |
| Sex of migrant | 1,575 | 0.48 | 0.50 | 1,500 | 0.52 | 0.50 | 1,484 | 0.53 | 0.50 | 2,709 | 0.55 | 0.50 | 1,968 | 0.51 | 0.50 |
| Marital status of migrant | 1,575 | 1.86 | 1.16 | 1,500 | 1.91 | 1.12 | 1,484 | 1.89 | 1.05 | 2,709 | 1.77 | 0.95 | 1,968 | 1.82 | 0.96 |
| Existential Locality | 1,575 | 0.52 | 3.20 | 1,500 | 0.05 | 0.47 | 1,484 | 0.09 | 0.70 | 2,709 | 0.14 | 0.87 | 1,968 | 0.07 | 0.57 |
| Number of elderly in HH | 1,575 | 0.53 | 0.67 | 1,500 | 0.50 | 0.80 | 1,484 | 0.56 | 0.80 | 2,709 | 0.36 | 0.60 | 1,968 | 0.73 | 0.86 |
| Number of child in HH | 1,575 | 3.48 | 1.78 | 1,500 | 7.12 | 4.05 | 1,484 | 5.41 | 4.11 | 2,709 | 3.51 | 2.63 | 1,968 | 5.55 | 4.42 |
| Household economic status | | | | | | | | | | | | | | | |
| - Poor | 1,575 | 0.09 | 0.29 | 1,500 | 0.12 | 0.32 | 1,484 | 0.22 | 0.41 | 2,709 | 0.22 | 0.42 | 1,968 | 0.14 | 0.34 |
| - Middle | 1,575 | 0.09 | 0.29 | 1,500 | 0.11 | 0.31 | 1,484 | 0.14 | 0.35 | 2,709 | 0.07 | 0.26 | 1,968 | 0.13 | 0.34 |
| - Rich | 1,575 | 0.52 | 0.50 | 1,500 | 0.21 | 0.41 | 1,484 | 0.26 | 0.44 | 2,709 | 0.10 | 0.30 | 1,968 | 0.36 | 0.48 |
| Household debt | 1,575 | 0.50 | 0.50 | 1,500 | 0.38 | 0.49 | 1,484 | 0.53 | 0.50 | 2,709 | 0.30 | 0.46 | 1,968 | 0.53 | 0.50 |

**Table 4.16** The exponential coefficient from binary logit model predicting the odds of migrating for more than 1 year by stratum

| Independent variable | Urban | | Rice | | Plantation | | Uplands | | Mixed | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. | Exp(B) | S.E. |
| Age of migrant | 1.005 | 0.006 | 1.005 | 0.006 | 1.007 | 0.007 | 0.995 | 0.004 | 0.995 | 0.005 |
| Sex of migrant | | | | | | | | | | |
| Female (ref.) | | | | | | | | | | |
| Male | 0.865 | 0.109 | 0.857 | 0.113 | 0.813 | 0.116 | 0.972 | 0.086 | 0.927 | 0.009 |
| Marital status of migrant | | | | | | | | | | |
| Single (ref.) | | | | | | | | | | |
| Married | 1.124 | 0.128 | 1.124 | 0.133 | 1.016 | 0.138 | 0.111 | 0.101 | 0.991 | 0.117 |
| Widow/Divorced/ Separated | 1.199 | 0.203 | 0.917 | 0.029 | 0.927 | 0.234 | 1.270 | 0.195 | 1.022 | 0.214 |
| Household economic | | | | | | | | | | |
| Middle (ref.) | | | | | | | | | | |
| Poor | 0.777 | 0.212 | 1.096 | 0.216 | 1.070 | 0.170 | 0.816 | 0.129 | 1.072 | 0.168 |
| Rich | 0.947 | 0.135 | 0.786 | 0.018 | 0.978 | 0.163 | 0.895 | 0.172 | 1.001 | 0.137 |
| Household debt | 1.251 | 0.130 | 1.018 | 0.167 | 1.010 | 0.145 | 1.003 | 0.127 | 1.145 | 0.128 |
| Household member | 1.041 | 0.045 | 1.491 | 0.066 | 1.097 | 0.058 | 0.935 | 0.044 | 1.033 | 0.033 |
| No. of child in HH | 1.006 | 0.045 | 1.005 | 0.053 | 0.962 | 0.048 | 1.013 | 0.027 | 0.989 | 0.027 |
| No. of elderly in HH | 0.851 | 0.083 | 0.897 | 0.089 | 1.190 | 0.088 | 1.123 | 0.007 | 0.962 | 0.068 |
| Existential locality at 150 m | 0.342*** | 0.235 | 0.437* | 0.434 | 0.924* | 0.323 | 0.530*** | 0.197 | 0.395** | 0.298 |
| N | 1575 | | 1500 | | 1484 | | 2709 | | 1968 | |
| D.F. | 11 | | 11 | | 11 | | 11 | | 11 | |
| Model Chi-square | 35.62 | | 14.26 | | 35.33 | | 32.79 | | 17.49 | |
| P value | 0.01 | | 0.01 | | 0.001 | | 0.001 | | 0.05 | |

**** p <.001 *** p< .01 ** p<.05 * P<.10

Findings from Table 4.6 show that the main thing is that migrants having at least two houses and being located within 150 meter radius appear to migrate for shorter durations or less than one year at 66, 61, 57 and 47 percent in urban, mixed economy, rice field and uplands respectively while there is only 8 percent migrants migrating for shorter duration in plantation areas. This finding is in accordance with a study of Sutthirat (1999) which explains that kinship community has a main role in expanding networks for accessing resources. It means that one living in a community where the role of kin is strong can access resources which make him not have any need to migrate out for getting resources in other places (Sutthirat, 1999).

In order to point out clearly the influential effect of existential locality on duration of migration when other individual characteristics are controlled, adjusted proportional probability is employed in this analysis. Results are shown in Table 4.17 and below.

**Table 4.17** Adjusted proportional probability of migration duration by existential locality within 150 m. of radius

| Strata | Less than 1 yr. migration | More than 1 yr. migration | N | D.F. | Model $X^2$ | p value |
|---|---|---|---|---|---|---|
| *Urban/semi urban* | | | | | | |
| -Having one house | 67 | 40 | 1,575 | 5 | 27.31 | 0.001 |
| -Having two houses and more | 54 | 36 | | | | |
| *Rice field* | | | | | | |
| -Having one house | 69 | 49 | 1,500 | 5 | 6.08 | 0.01 |
| -Having two houses and more | 62 | 40 | | | | |
| *Plantation* | | | | | | |
| -Having one house | 70 | 48 | 1,484 | 5 | 12.06 | 0.01 |
| -Having two houses and more | 63 | 41 | | | | |
| *Uplands* | | | | | | |
| -Having one house | 70 | 53 | 2,709 | 5 | 19.28 | 0.01 |
| -Having two houses and more | 68 | 50 | | | | |
| *Mixed economy* | | | | | | |
| -Having one house | 69 | 47 | 1,968 | 5 | 13.61 | 0.01 |
| -having two houses and more | 65 | 33 | | | | |

The result is that in every stratum on average 70% of migrants migrated for less than one year when there was at least one house located nearby. For

urban/semi urban areas, 67 percent of migrants migrated for less than one year with 69 percent in rice field and mixed economy and 70 percent in plantation and uplands respectively. But, the number of migrants migrating for more than one year is lower at around 20 percent in all strata by average. It means that having two houses and more located nearby leads to a shorter duration of migration. Also, the result shows that in the urban/semi urban stratum, a labor force aged person who has at least one house of formal or informal kinship within 150 meter of radius tends to have a 27 percent greater probability of migrating for less than one year than migrating for eon year and over. In rice field area, a labor force aged person who has at least one house of formal or informal kinship within 150 meter of radius tends to have probability to migrate less than one year more 20 percent than those who migrate longer than one year. In plantation, uplands and mixed economy strata, the finding comes into the same direction; a labor force aged person who has at least one house of formal or informal kinship within 150 meter of radius tends to have a higher probability of migrating less than one year also. This finding is in accordance with Lee's theory (1966) which mentioned that even though push and pull economic condition in place of origin and destination is a very strong influential factor, non-economic factor such as family ties, housing, marriage, language and ethnicity etc. are also strong in their importance. Hence, potential migrants do not only respond to only economic opportunities but also take other things into consideration. However, the push and pull theory of Lee (1966) can not explain some phenomena such as why migration is selective and why patterns of migration change over time.

### 4.3 Influence of existential locality (EL) and labor force age migration on elderly's living arrangement

This part is aimed to investigate migration of labor force age and influence of having a house located nearby on living arrangement for the elderly who are left behind. Due to the unit of analysis for this part of study is elderly but the research is intended to investigate the influence of migrants' characteristics such as age, sex, marital status of migrants to living arrangement of the elderly. Then, personnel characteristics of each elderly must be linked with personnel characteristics of each

migrant. Thus, unit of analysis of elderly is repeatedly counted. This research is different from others which their units of analysis are not repeatedly counted. Before going into more detail, descriptive statistic results are shown to provide fundamental data of samples.

There are 4,108 elderly living in five strata. The highest number was in the uplands at 947 persons, followed by 885 persons living in mixed economy, 818 persons in urban areas, 703 persons in rice field areas and 665 persons in plantation areas. Most were married in all strata, followed by those who are single. Also, most of them are living with children at 1,878 persons followed by those who live with others at 1,117 persons.

**Table 4.18** Descriptive data of migrants who live in houses having elderly by stratum

| | Strata | | | | | Total |
|---|---|---|---|---|---|---|
| | **Urban** | **Rice field** | **Plantation** | **Uplands** | **Mixed economy** | |
| **Sex of migrant** | | | | | | |
| - Male | 18.34%(372) | 19.28%(391) | 15.68%(318) | 21.10%(428) | 25.60%(434) | 100.00%(2,028) |
| - Female | 21.44%(446) | 19.32%(402) | 16.68%(347) | 24.95%(519) | 17.61%(451) | 100.00%(2,080) |
| Total | 19.91%(818) | 19.30%(793) | 16.18%(665) | 23.05%(947) | 21.56%(885) | 100.00%(4,108) |
| **Marital status of migrant** | | | | | | |
| - Single | 21.94%(332) | 17.97%(272) | 14.47%(219) | 22.40%(339) | 23.22%(351) | 100.00%(1,513) |
| - Married | 17.71%(396) | 18.51%(414) | 18.15%(406) | 24.23%(542) | 21.40%(478) | 100.00%(2,236) |
| - Widow, divorced, Separated | 25.06%(90) | 29.80%(107) | 11.14%(40) | 18.38%(66) | 15.08%(56) | 100.00%(359) |
| Total | 19.91%(818) | 19.30%(793) | 16.18%(665) | 23.05%(947) | 21.56%(885) | 100.00%(4,108) |
| **Live with** | | | | | | |
| - Children | 23.80%(447) | 21.67%(407) | 13.68%(257) | 19.70%(370) | 21.15%(397) | 100.00%(1,878) |
| - Spouse | 18.50%(158) | 18.50%(158) | 20.72%(177) | 22.01%(188) | 20.27%(173) | 100.00%(854) |
| - Grandchildren | 14.06%(36) | 16.40%(42) | 17.57%(45) | 28.90%(74) | 23.07%(59) | 100.00%(256) |
| - Others | 15.84%(177) | 16.65%(186) | 16.47%(184) | 28.11%(314) | 22.93%(256) | 100.00%(1,117) |
| Total | 19.91%(818) | 19.30%(793) | 16.13%(663) | 23.02%(946) | 21.64%(885) | 100.00%(4,108) |

**Table 4.19** Frequency in number of all variables for elderly's living arrangement in urban/semi-urban stratum

| Variable | Elderly Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Children | | Spouse | | Grandchildren | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 55.7 | 253 | 17.8 | 81 | 2.6 | 12 | 23.8 | 108 | 100.0 | 454 |
| 30-44 years old | 53.4 | 166 | 22.2 | 69 | 7.1 | 22 | 17.4 | 54 | 100.0 | 311 |
| 45-59 years old | 52.8 | 28 | 15.1 | 8 | 3.8 | 2 | 28.3 | 15 | 100.0 | 53 |
| Sex of migrant | | | | | | | | | | |
| Female | 55.2 | 246 | 21.1 | 94 | 4.7 | 21 | 19.1 | 85 | 100.0 | 446 |
| Male | 54.0 | 201 | 17.2 | 64 | 4.0 | 15 | 24.7 | 92 | 100.0 | 372 |
| Marital status of migrant | | | | | | | | | | |
| Single | 56.0 | 186 | 18.4 | 61 | 2.1 | 7 | 23.5 | 78 | 100.0 | 332 |
| Married | 52.7 | 212 | 20.4 | 82 | 3.7 | 15 | 23.1 | 93 | 100.0 | 402 |
| Widow/Divorced/ Separated | 58.3 | 49 | 17.9 | 15 | 16.7 | 14 | 7.1 | 6 | 100.0 | 84 |
| have less than 2 houses within 150m | 55.1 | 443 | 19.3 | 155 | 4.4 | 35 | 21.3 | 171 | 100.0 | 804 |
| have 2 houses and more within 150m | 28.6 | 4 | 21.4 | 3 | 7.1 | 1 | 42.9 | 6 | 100.0 | 14 |
| Household economic | | | | | | | | | | |
| Middle | 49.6 | 68 | 21.9 | 30 | 1.5 | 2 | 27.0 | 37 | 100.0 | 137 |
| Poor | 46.5 | 67 | 18.8 | 27 | 5.6 | 8 | 29.2 | 42 | 100.0 | 144 |
| Rich | 58.5 | 312 | 18.6 | 99 | 4.9 | 26 | 18.0 | 96 | 100.0 | 533 |
| Household debt | 54.5 | 403 | 19.9 | 147 | 4.5 | 33 | 21.1 | 156 | 100.0 | 739 |
| Household member | | | | | | | | | | |
| 1-4 household members | 45.0 | 9 | 10.0 | 2 | 0.0 | 0 | 45.0 | 9 | 100.0 | 20 |
| 5-9 household members | 53.8 | 344 | 20.2 | 129 | 3.6 | 23 | 22.5 | 144 | 100.0 | 640 |
| > 9 household members | 59.5 | 94 | 17.1 | 27 | 8.2 | 13 | 15.2 | 24 | 100.0 | 158 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 54.3 | 401 | 19.0 | 140 | 3.8 | 28 | 22.9 | 169 | 100.0 | 738 |
| >4 migrants in HH | 57.5 | 46 | 22.5 | 18 | 10.0 | 8 | 10.0 | 8 | 100.0 | 80 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 54.2 | 362 | 19.3 | 129 | 3.9 | 26 | 22.6 | 151 | 100.0 | 668 |
| 5-9 children in HH | 60.3 | 70 | 18.1 | 21 | 4.3 | 5 | 17.2 | 20 | 100.0 | 116 |
| > 9 children in HH | 44.1 | 15 | 23.5 | 8 | 14.7 | 5 | 17.6 | 6 | 100.0 | 34 |
| No. of elderly in HH | | | | | | | | | | |
| no elderly in household | 57.6 | 346 | 15.0 | 90 | 4.8 | 29 | 22.6 | 136 | 100.0 | 601 |
| 1 elderly in household | 47.4 | 101 | 31.9 | 68 | 3.3 | 7 | 17.4 | 37 | 100.0 | 213 |
| > 1 elderly in household | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 4 | 100.0 | 4 |

**Table 4.20** Frequency in number of all variables for elderly's living arrangement in rice field stratum

| Variable | Elderly Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Children | | Spouse | | Grandchildren | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 52.0 | 251 | 19.5 | 94 | 4.1 | 20 | 24.4 | 118 | 100.0 | 483 |
| 30-44 years old | 49.6 | 136 | 21.5 | 59 | 6.9 | 19 | 21.9 | 60 | 100.0 | 274 |
| 45-59 years old | 55.6 | 20 | 13.9 | 5 | 8.3 | 3 | 22.2 | 8 | 100.0 | 36 |
| Sex of migrant | | | | | | | | | | |
| Female | 50.7 | 204 | 18.7 | 75 | 7.0 | 28 | 23.6 | 95 | 100.0 | 402 |
| Male | 51.9 | 203 | 21.2 | 83 | 3.6 | 14 | 23.3 | 91 | 100.0 | 391 |
| Marital status of migrant | | | | | | | | | | |
| Single | 52.2 | 142 | 20.2 | 55 | 2.2 | 6 | 25.4 | 69 | 100.0 | 272 |
| Married | 48.9 | 203 | 19.5 | 81 | 7.7 | 32 | 23.9 | 99 | 100.0 | 415 |
| Widow/Divorced/ Separated | 58.5 | 62 | 20.8 | 22 | 3.8 | 4 | 17.0 | 18 | 100.0 | 106 |
| have less than 2 houses within 150m | 51.7 | 406 | 19.8 | 156 | 5.2 | 41 | 23.3 | 183 | 100.0 | 786 |
| have 2 houses and more within 150m | 14.3 | 1 | 28.6 | 2 | 14.3 | 1 | 42.9 | 3 | 100.0 | 7 |
| Household economic | | | | | | | | | | |
| Middle | 61.8 | 105 | 14.1 | 24 | 4.7 | 8 | 19.4 | 33 | 100.0 | 170 |
| Poor | 40.5 | 122 | 19.6 | 59 | 5.6 | 17 | 34.2 | 103 | 100.0 | 301 |
| Rich | 55.9 | 180 | 23.3 | 75 | 5.3 | 17 | 15.5 | 50 | 100.0 | 322 |
| Household debt | 51.1 | 386 | 20.7 | 156 | 5.4 | 41 | 22.8 | 172 | 100.0 | 755 |
| Household member | | | | | | | | | | |
| 1-4 household members | 54.8 | 17 | 16.1 | 5 | 12.9 | 4 | 16.1 | 5 | 100.0 | 31 |
| 5-9 household members | 52.1 | 173 | 22.6 | 75 | 2.1 | 7 | 23.2 | 77 | 100.0 | 332 |
| > 10 household members | 50.5 | 217 | 18.1 | 78 | 7.2 | 31 | 24.2 | 104 | 100.0 | 430 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 52.7 | 375 | 20.1 | 143 | 3.8 | 27 | 23.3 | 166 | 100.0 | 711 |
| > 4 migrants in HH | 39.0 | 32 | 18.3 | 15 | 18.3 | 15 | 24.4 | 20 | 100.0 | 82 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 52.3 | 190 | 22.0 | 80 | 3.0 | 11 | 22.6 | 82 | 100.0 | 363 |
| 5-9 children in HH | 49.4 | 127 | 17.5 | 45 | 6.2 | 16 | 26.8 | 69 | 100.0 | 257 |
| > 10 children in HH | 52.0 | 90 | 19.1 | 33 | 8.7 | 15 | 20.2 | 35 | 100.0 | 173 |
| No. of elderly in HH | | | | | | | | | | |
| no elderly in household | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| 1 elderly in household | 53.3 | 350 | 19.0 | 125 | 4.1 | 27 | 23.6 | 155 | 100.0 | 657 |
| > 1 elderly in household | 41.9 | 57 | 24.3 | 33 | 11.0 | 15 | 22.8 | 31 | 100.0 | 136 |

**Table 4.21** Frequency in number of all variables for elderly's living arrangement in plantation stratum

| Variable | Elderly Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Children | | Spouse | | Grandchildren | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 38.2 | 161 | 28.5 | 120 | 3.8 | 16 | 29.5 | 124 | 100.0 | 421 |
| 30-44 years old | 39.8 | 88 | 23.5 | 52 | 12.2 | 27 | 24.4 | 54 | 100.0 | 221 |
| 45-59 years old | 38.1 | 8 | 23.8 | 5 | 9.5 | 2 | 28.6 | 6 | 100.0 | 21 |
| Sex of migrant | | | | | | | | | | |
| Female | 37.5 | 119 | 27.8 | 88 | 6.6 | 21 | 28.1 | 89 | 100.0 | 317 |
| Male | 39.9 | 138 | 25.7 | 89 | 6.9 | 24 | 27.5 | 95 | 100.0 | 346 |
| Marital status of migrant | | | | | | | | | | |
| Single | 39.3 | 86 | 27.9 | 61 | 2.3 | 5 | 30.6 | 67 | 100.0 | 219 |
| Married | 37.2 | 151 | 26.1 | 106 | 9.4 | 38 | 27.3 | 111 | 100.0 | 406 |
| Widow/Divorced/ Separated | 52.6 | 20 | 26.3 | 10 | 5.3 | 2 | 15.8 | 6 | 100.0 | 38 |
| have less than 2 houses within 150m | 38.8 | 256 | 26.8 | 177 | 6.8 | 45 | 27.6 | 182 | 100.0 | 660 |
| have 2 houses and more within 150m | 33.3 | 1 | 0.0 | 0 | 0.0 | 0 | 66.7 | 2 | 100.0 | 3 |
| Household economic | | | | | | | | | | |
| Middle | 43.2 | 63 | 25.3 | 37 | 5.5 | 8 | 26.0 | 38 | 100.0 | 146 |
| Poor | 27.7 | 78 | 25.5 | 72 | 7.8 | 22 | 39.0 | 110 | 100.0 | 282 |
| Rich | 49.6 | 116 | 29.1 | 68 | 6.4 | 15 | 15.0 | 35 | 100.0 | 234 |
| Household debt | 39.5 | 246 | 26.5 | 165 | 6.7 | 42 | 27.3 | 170 | 100.0 | 623 |
| Household member | | | | | | | | | | |
| 1-4 household members | 36.0 | 9 | 24.0 | 6 | 4.0 | 1 | 36.0 | 9 | 100.0 | 25 |
| 5-9 household members | 37.8 | 182 | 27.9 | 134 | 7.9 | 38 | 26.4 | 127 | 100.0 | 481 |
| > 10 household members | 42.0 | 66 | 23.6 | 37 | 3.8 | 6 | 30.6 | 48 | 100.0 | 157 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 38.7 | 223 | 25.7 | 148 | 7.6 | 44 | 28.0 | 161 | 100.0 | 576 |
| > 4 migrants in HH | 39.1 | 34 | 33.3 | 29 | 1.1 | 1 | 26.4 | 23 | 100.0 | 87 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 41.9 | 175 | 24.4 | 102 | 6.9 | 29 | 26.8 | 112 | 100.0 | 418 |
| 5-9 children in HH | 27.1 | 35 | 38.0 | 49 | 10.9 | 14 | 24.0 | 31 | 100.0 | 129 |
| > 10 children in HH | 40.5 | 47 | 22.4 | 26 | 1.7 | 2 | 35.3 | 41 | 100.0 | 116 |
| No. of elderly in HH | | | | | | | | | | |
| no elderly in household | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| 1 elderly in household | 42.3 | 225 | 22.7 | 121 | 7.7 | 41 | 27.3 | 145 | 100.0 | 532 |
| > 1 elderly in household | 24.4 | 32 | 42.7 | 56 | 3.1 | 4 | 29.8 | 39 | 100.0 | 131 |

**Table 4.22** Frequency in number of all variables for elderly's living arrangement in uplands stratum

| Variable | Elderly Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Children | | Spouse | | Grandchildren | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 44.3 | 269 | 20.4 | 124 | 6.3 | 38 | 29.0 | 176 | 100.0 | 607 |
| 30-44 years old | 30.2 | 89 | 19.7 | 58 | 11.2 | 33 | 39.0 | 115 | 100.0 | 295 |
| 45-59 years old | 27.3 | 12 | 13.6 | 6 | 6.8 | 3 | 52.3 | 23 | 100.0 | 44 |
| Sex of migrant | | | | | | | | | | |
| Female | 39.8 | 170 | 19.7 | 84 | 7.7 | 33 | 32.8 | 140 | 100.0 | 427 |
| Male | 38.5 | 200 | 20.0 | 104 | 7.9 | 41 | 33.5 | 174 | 100.0 | 519 |
| Marital status of migrant | | | | | | | | | | |
| Single | 45.9 | 155 | 18.3 | 62 | 5.6 | 19 | 30.2 | 102 | 100.0 | 338 |
| Married | 36.2 | 196 | 20.8 | 113 | 8.9 | 48 | 34.1 | 185 | 100.0 | 542 |
| Widow/Divorced/ Separated | 28.8 | 19 | 19.7 | 13 | 10.6 | 7 | 40.9 | 27 | 100.0 | 66 |
| have less than 2 houses within 150m | 39.8 | 369 | 19.7 | 183 | 7.9 | 73 | 32.6 | 302 | 100.0 | 927 |
| have 2 houses and more within 150m | 5.3 | 1 | 26.3 | 5 | 5.3 | 1 | 63.2 | 12 | 100.0 | 19 |
| Household economic | | | | | | | | | | |
| Middle | 28.6 | 44 | 22.1 | 34 | 18.8 | 29 | 30.5 | 47 | 100.0 | 154 |
| Poor | 37.1 | 230 | 19.5 | 121 | 5.8 | 36 | 37.6 | 233 | 100.0 | 620 |
| Rich | 55.6 | 95 | 19.3 | 33 | 5.3 | 9 | 19.9 | 34 | 100.0 | 171 |
| Household debt | 39.9 | 336 | 20.1 | 169 | 7.5 | 63 | 32.5 | 274 | 100.0 | 842 |
| Household member | | | | | | | | | | |
| 1-4 household members | 39.6 | 19 | 22.9 | 11 | 8.3 | 4 | 29.2 | 14 | 100.0 | 48 |
| 5-9 household members | 38.5 | 313 | 20.8 | 169 | 7.4 | 60 | 33.3 | 270 | 100.0 | 812 |
| > 10 household members | 44.2 | 38 | 9.3 | 8 | 11.6 | 10 | 34.9 | 30 | 100.0 | 86 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 38.5 | 361 | 20.1 | 188 | 7.9 | 74 | 33.5 | 314 | 100.0 | 937 |
| > 4 migrants in HH | 100.0 | 9 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 9 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 35.6 | 230 | 21.1 | 136 | 7.9 | 51 | 35.4 | 229 | 100.0 | 646 |
| 5-9 children in HH | 45.0 | 131 | 17.9 | 52 | 7.9 | 23 | 29.2 | 85 | 100.0 | 291 |
| > 10 children in HH | 100.0 | 9 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 9 |
| No. of elderly in HH | | | | | | | | | | |
| no elderly in household | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| 1 elderly in household | 38.5 | 280 | 18.0 | 131 | 8.2 | 60 | 35.3 | 257 | 100.0 | 728 |
| > 1 elderly in household | 41.3 | 90 | 26.1 | 57 | 6.4 | 14 | 26.1 | 57 | 100.0 | 218 |

**Table 4.23** Frequency in number of all variables for elderly's living arrangement in mixed economy stratum

| Variable | Elderly Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Children | | Spouse | | Grandchildren | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 46.2 | 231 | 19.8 | 99 | 5.0 | 25 | 29.0 | 145 | 100.0 | 500 |
| 30-44 years old | 44.6 | 146 | 20.2 | 66 | 7.6 | 25 | 27.5 | 90 | 100.0 | 327 |
| 45-59 years old | 34.5 | 20 | 13.8 | 8 | 15.5 | 9 | 36.2 | 21 | 100.0 | 58 |
| Sex of migrant | | | | | | | | | | |
| Female | 44.9 | 195 | 19.6 | 85 | 5.3 | 23 | 30.2 | 131 | 100.0 | 434 |
| Male | 44.8 | 202 | 19.5 | 88 | 8.0 | 36 | 27.7 | 125 | 100.0 | 451 |
| Marital status of migrant | | | | | | | | | | |
| Single | 48.4 | 170 | 20.5 | 72 | 3.1 | 11 | 27.9 | 98 | 100.0 | 351 |
| Married | 40.7 | 195 | 19.0 | 91 | 9.4 | 45 | 30.9 | 148 | 100.0 | 479 |
| Widow/Divorced/ Separated | 58.2 | 32 | 18.2 | 10 | 5.5 | 3 | 18.2 | 10 | 100.0 | 55 |
| have less than 2 houses within 150m | 44.7 | 393 | 19.7 | 173 | 6.7 | 59 | 29.0 | 255 | 100.0 | 880 |
| have 2 houses and more within 150m | 80.0 | 4 | - | 0 | - | 0 | 20.0 | 1 | 100.0 | 5 |
| Household economic | | | | | | | | | | |
| Middle | 37.8 | 73 | 25.9 | 50 | 10.9 | 21 | 25.4 | 49 | 100.0 | 193 |
| Poor | 28.5 | 70 | 16.7 | 41 | 4.9 | 12 | 50.0 | 123 | 100.0 | 246 |
| Rich | 57.0 | 254 | 18.4 | 82 | 5.8 | 26 | 18.8 | 84 | 100.0 | 446 |
| Household debt | 45.4 | 358 | 20.4 | 161 | 6.6 | 52 | 27.5 | 217 | 100.0 | 788 |
| Household member | | | | | | | | | | |
| 1-4 household members | 48.8 | 40 | 13.4 | 11 | 2.4 | 2 | 35.4 | 29 | 100.0 | 82 |
| 5-9 household members | 43.6 | 237 | 19.7 | 107 | 7.2 | 39 | 29.6 | 161 | 100.0 | 544 |
| > 10 household members | 46.3 | 120 | 21.2 | 55 | 6.9 | 18 | 25.5 | 66 | 100.0 | 259 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 47.2 | 331 | 20.5 | 144 | 6.1 | 43 | 26.1 | 183 | 100.0 | 701 |
| > 4 migrants in HH | 35.9 | 66 | 15.8 | 29 | 8.7 | 16 | 39.7 | 73 | 100.0 | 184 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 46.9 | 260 | 18.4 | 102 | 5.6 | 31 | 29.1 | 161 | 100.0 | 554 |
| 5-9 children in HH | 80.8 | 105 | 44.6 | 58 | 17.7 | 23 | 37.7 | 49 | 180.8 | 130 |
| > 10 children in HH | 20.0 | 32 | 8.1 | 13 | 3.1 | 5 | 28.8 | 46 | 60.0 | 160 |
| No. of elderly in HH | | | | | | | | | | |
| no elderly in household | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| 1 elderly in household | 45.6 | 251 | 15.6 | 86 | 6.9 | 38 | 31.8 | 175 | 100.0 | 550 |
| > 1 elderly in household | 43.6 | 146 | 26.0 | 87 | 6.3 | 21 | 24.2 | 81 | 100.0 | 335 |

**Table 4.24** Descriptive data of all variables of migrants who live in houses having elderly by stratum

| | urban/semi-urban | | | Rice field | | | plantation | | | uplands | | | mixed economy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** |
| Age of migrant | 818 | 29.68 | 9.66 | 793 | 28.18 | 9.17 | 665 | 28.22 | 8.84 | 947 | 27.71 | 9.52 | 885 | 29.35 | 9.70 |
| Sex of migrant | 818 | 0.45 | 0.50 | 793 | 0.49 | 0.50 | 665 | 0.52 | 0.50 | 947 | 0.55 | 0.50 | 885 | 0.51 | 0.50 |
| *Marital status of migrant* | | | | | | | | | | | | | | | |
| - Single | 812 | 0.41 | 0.49 | 792 | 0.34 | 0.48 | 663 | 0.33 | 0.47 | 947 | 0.36 | 0.48 | 884 | 0.40 | 0.49 |
| - Married | 818 | 0.49 | 0.50 | 793 | 0.52 | 0.50 | 665 | 0.61 | 0.49 | 947 | 0.57 | 0.50 | 885 | 0.54 | 0.50 |
| - Widow, Separated, divorced | 818 | 0.10 | 0.30 | 793 | 0.13 | 0.34 | 665 | 0.06 | 0.23 | 947 | 0.07 | 0.25 | 885 | 0.06 | 0.24 |
| EL of 150 m. | 818 | 0.15 | 1.32 | 793 | 0.03 | 0.36 | 665 | 0.02 | 0.32 | 947 | 0.06 | 0.53 | 885 | 0.02 | 0.28 |
| *Household characteristics* | | | | | | | | | | | | | | | |
| - Number of migrant | 818 | 2.14 | 1.27 | 793 | 3.33 | 1.40 | 665 | 2.72 | 1.36 | 947 | 2.06 | 1.09 | 885 | 2.96 | 1.79 |
| -Number of elderly in household | 818 | 1.27 | 0.46 | 793 | 1.17 | 0.38 | 665 | 1.20 | 0.41 | 947 | 1.23 | 0.42 | 885 | 1.38 | 0.49 |
| -Number of children in household | 818 | 3.45 | 2.60 | 793 | 6.53 | 4.01 | 665 | 4.70 | 3.21 | 947 | 3.96 | 2.97 | 885 | 4.95 | 3.68 |
| *Household economic status* | | | | | | | | | | | | | | | |
| - Poor | 818 | 0.18 | 0.38 | 793 | 0.38 | 0.49 | 665 | 0.42 | 0.49 | 947 | 0.65 | 0.48 | 885 | | 0.45 |
| - Middle | 818 | 0.17 | 0.37 | 793 | 0.21 | 0.41 | 665 | 0.22 | 0.42 | 947 | 0.16 | 0.37 | 885 | 0.22 | 0.41 |
| - Rich | 818 | 0.65 | 0.48 | 793 | 0.41 | 0.49 | 665 | 0.35 | 0.48 | 947 | 0.18 | 0.39 | 885 | 0.50 | 0.50 |
| Household debt | 818 | 0.90 | 0.30 | 793 | 0.95 | 0.21 | 665 | 0.94 | 0.24 | 947 | 0.89 | 0.31 | 885 | 0.89 | 0.31 |

Table 4.25 below demonstrates results from multinomial logistic regression which is conducted to investigate characteristics of migrants to elderly living arrangement in urban/semi-urban stratum, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that the older the migrant, the greater the possibility of an elderly person living with spouse. The higher number of household members and elderly members conversely reduces by 7 percent an elderly's log odd on living with spouse and by 14 percent an elderly's log odd on living with grandchildren but having more children in household increases an elderly's log odd on living with spouse.

Similarly, the older the migrant, the greater the possibility of an elderly living with grandchildren. The migrant having married increases an elderly's log odd of living with grandchildren by 2 times. The greater number of migrants gives positive effect on the elderly on living with others and grandchildren by around 0.6 to 1 times more. The higher the number of household members and elderly members conversely gives effect as reduces by 14 percent an elderly's log odd on living with grandchildren but having more of children in a household increases one time an elderly's log odd on living with grandchildren. Moreover, poor and rich households create a negative effect an elderly's log odd to live with grandchildren by 60 and 72 percent, compared with the middle economic status household.

Also, results suggest that the older the migrant, the bigger the chance for an elderly to live with others. The migrant having been widowed, divorced and separated leads to a lower chance for an elderly person to live with others by 67 percent. The more the number of elderly in the household means the more the chance for an elderly to live with others by one time. Contrarily, poor households create positive effect to an elderly's log odd to live with others by 1 time, while rich households create a negative effect by 50 percent, compared with the middle economic status household.

**Table 4.25** Multinomial logistic regression result focusing on determinants of elderly living arrangement in urban/semi-urban stratum

| | **Live with spouse vs live with children** | **live with grandchildren vs live with children** | **Live with other vs Live with children** | **live with grandchild vs live with spouse** | **live with other vs Live with spouse** | **live with other vs live with grandchild** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.012** | 1.042** | 1.022* | 1.0016 | 1.0059 | 1.0018 |
| Sex of migrant | 0.969 | 1.642 | 0.867 | 0.7865 | 0.9295 | 1.2090 |
| *Marital status of migrant* | | | | | | |
| - Married | 0.961 | 2.724** | 0.985 | 1.1603 | 1.9235 | 1.0875 |
| - Widow, divorced, separated | 0.541 | 0.825 | 0.327** | 0.8745 | 9.4291*** | 0.293** |
| Number of migrant | 1.224 | 1.943 | 1.995** | 1.654* | 1.453* | 1.980 |
| *Household characteristics* | | | | | | |
| - No. of household member | 0.938* | 0.860* | 0.816*** | 0.9544 | 0.7510* | 0.875* |
| - Number of children | 1.085* | 1.255*** | 1.246*** | 1.0230 | 1.399*** | 1.0635 |
| *Household status* | | | | | | |
| - Poor | 0.827 | 0.412* | 2.115** | 0.8549 | 4.8430 | 1.0255 |
| - Rich | 0.459 | 0.286** | 0.414*** | 0.6926 | 5.7739* | 0.566* |
| Household debt | 1.381 | 0.768 | 0.632 | 1.3934 | 1.2833 | 0.7450 |
| EL in150m | 0.041 | 0.055 | 0.196 | 2.0051 | 5.0442 | 2.9059 |
| N | 818 | | | | | |
| D.F. | 30 | | | | | |
| Model Chi-square | 87.89 | | | | | |
| p value | 0.000 | | | | | |

**** p< .001 *** p<.01 ** p<.05 *p<.10

Due to the fact that the result interpretation shown above is quite complicated and difficult to understand, probability simulation is designed to give a clear explanation on the relationship between concerned variables and the percentage of probability on living arrangement of the elderly. The simulation is done for every stratum after multinomial analysis result is shown.

**Table 4.26** Predicted probability of elderly living arrangement in urban/semi urban stratum

| Information | live with children | live with spouse | live with grandchild | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 56 | 18 | 4 | 22 |
| age 30 | 55 | 19 | 4 | 22 |
| age 45 | 54 | 20 | 5 | 21 |
| **Gender of migrant** | | | | |
| Female | 55 | 21 | 5 | 19 |
| Male | 54 | 17 | 4 | 25 |
| **Marital status of migrant** | | | | |
| Single | 55 | 19 | 4 | 22 |
| Married | 53 | 20 | 5 | 22 |
| Widow/separated/divorced | 54 | 17 | 22 | 7 |
| **Age group of children** | | | | |
| Children age 0 | 51 | 23 | 6 | 20 |
| Children age 5 | 58 | 17 | 2 | 23 |
| children age 10 | 62 | 12 | 1 | 25 |
| **Number of migrant** | | | | |
| have > 1 migrant | 57 | 19 | 5 | 19 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 28 | 20 | 9 | 43 |

From above table, it is interesting that in all age groups of migrant, for both genders of migrant and for all age groups of elderly, an elderly tends to live with others more than living with their grandparents. As same as in terms of existential locality, having two houses and over in adjacent area leads an elderly to live with other more than living with their grandchildren.

Table 4.27 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to elderly living arrangement in rice stratum. The contrast shows the log odds of living with children to living with spouse, grandchildren and others. It appears that both poor and rich

households create positive effect to an elderly's log odd to live with spouse by 1.2 and 0.8 times, compared with the middle economic status household. Moreover, having household debt gives the positive effect to an elderly to live with spouse by 3.8 times more. The more the number of migrants, the more the chance for the elderly to live with grandchildren by 0.5 times.

Correspondingly, the migrant having married increases an elderly's log odd of living with grandchildren by about 2 times. The more number of household member gives positive effect to an elderly's log odd on living with grandchildren by 0.3 times. Also, results suggest that the migrant having been widowed, divorced and separated leads to a lower chance for an elderly to live with others by 57 percent. Poor households create positive effect to an elderly's log odd to live with others by 2 times, compared with the middle economic status household.

**Table 4.27** Multinomial logistic regression result focusing on determinants of elderly living arrangement in rice field stratum

| | **Live with spouse vs live with children** | **Live with grandchildren vs live with children** | **live with other vs live with children** | **live with grandchild vs live with spouse** | **live with other vs live with spouse** | **live with other vs live with grandchild** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.008 | 1.024 | 1.014 | 1.007 | 1.024 | 1.013 |
| Sex of migrant | 1.150 | 0.533 | 0.930 | 1.150 | 0.533 | 0.930 |
| *Marital status of migrant* | | | | | | |
| - Married | 0.963 | 2.793* | 0.803 | 0.963 | 2.793 | 0.802 |
| - Widow, divorced, separated | 0.887 | 1.050 | 0.432** | 0.887 | 1.049 | 0.431 |
| Number of migrant | 1.442 | 1.543* | 1.767 | 1.001 | 1.008 | 1.544 |
| *Household characteristics* | | | | | | |
| - household member | 0.925 | 1.325* | 1.142 | 0.924 | 1.325 | 1.141 |
| - number of children | 1.067 | 0.893 | 0.894 | 1.066 | 0.892 | 0.893 |
| *Household status* | | | | | | |
| - Poor | 2.211** | 1.922 | 2.760*** | 2.210 | 1.922 | 2.760 |
| - Rich | 1.854* | 1.472 | 0.860 | 1.854 | 1.472 | 0.859 |
| Household debt | 4.739* | 1.685 | 0.753 | 4.739 | 1.685 | 0.752 |
| EL in150m | 4.748 | 10.351 | 3.986 | 4.747 | 10.351 | 3.986 |
| N | 793 | | | | | |
| D.F. | 30 | | | | | |
| Model Chi square | 97.85 | | | | | |
| p value | 0.000 | | | | | |

**** p< .001 *** p< .01 ** p< .05 * p< .10

**Table 4.28** Predicted probability of elderly living arrangement in rice field stratum

| Information | live with children | live with spouse | live with grandchild | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 55 | 19 | 4 | 22 |
| age 30 | 51 | 20 | 5 | 24 |
| age 45 | 47 | 21 | 7 | 25 |
| **Gender of migrant** | | | | |
| Female | 50 | 19 | 7 | 24 |
| Male | 52 | 21 | 4 | 23 |
| **Marital status of migrant** | | | | |
| Single | 51 | 20 | 5 | 24 |
| Married | 50 | 20 | 8 | 22 |
| Widow/separated/divorced | 56 | 20 | 9 | 15 |
| **Age group of children** | | | | |
| Children age 0 | 48 | 23 | 5 | 24 |
| Children age 5 | 54 | 18 | 5 | 23 |
| Children age 10 | 59 | 14 | 5 | 22 |
| **Number of migrant** | | | | |
| have > 1 migrant | 51 | 21 | 5 | 23 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 14 | 30 | 14 | 42 |

From above table, it is interesting that in all age groups of migrant, for both genders of migrant and for all age groups of elderly, an elderly tends to live with others more than living with their grandparents. As same as in terms of existential locality, having two houses and over in adjacent area leads an elderly to live with other (42 percent) more than living with their grandchildren (14 percent).

Table 4.29 below shows that a married migrant increases an elderly's log odd of living with grandchildren by 2 times while having been widow, divorced and separated reduces an elderly's log odd of living with others by 68 percent. The more the number of migrants gives positive effect by 0.6 times more on average for the elderly to live with grandchildren and or others than living with their children. The more the number of household member and elderly member conversely reduces by 16 percent an elderly's log odd on living with other but having more children in household increases one time of an elderly's log odd on living with other. Moreover, rich households create negative effect to an elderly's log odd to live with others by 57 percent while poor ones generates positive effect by 1.2 times, compared with the middle economic status household.

**Table 4.29** Multinomial logistic regression result focusing on determinants of elderly living arrangement in plantation stratum

| | **live with spouse vs live with children** | **live with grandchildren vs live with children** | **live with other vs live with children** | **live with grandchild vs live with spouse** | **live with other vs live with spouse** | **live with other vs live with grandchild** |
|---|---|---|---|---|---|---|
| Age of migrant | 0.992 | 1.034 | 0.986 | 0.9922 | 1.0337 | 0.9864 |
| Sex of migrant | 0.895 | 0.938 | 0.946 | 0.8947 | 0.9383 | 0.9461 |
| *Marital status of migrant* | | | | | | |
| - Married | 1.018 | 3.241* | 1.058 | 1.0178 | 3.2420 | 1.0576 |
| - Widow, divorced, separated | 0.684 | 1.014 | 0.320* | 0.6839 | 1.0140 | 0.3201 |
| Number of migrant | 1.943 | 0.841 | 1.113 | 1.345* | 1.675* | 1.870 |
| *Household characteristics* | | | | | | |
| - household member | 1.068 | 0.781 | 0.837* | 1.0676 | 0.7808 | 0.8374 |
| - number of children | 0.965 | 1.117 | 1.186* | 0.9647 | 1.1165 | 1.1868 |
| *Household status* | | | | | | |
| - Poor | 1.588 | 1.801 | 2.279*** | 1.5876 | 1.8013 | 2.2795 |
| - Rich | 0.977 | 0.825 | 0.429** | 0.9768 | 0.8249 | 0.4291 |
| Household debt | 0.601 | 0.540 | 0.583 | 0.6014 | 0.5399 | 0.5828 |
| EL in150m | 1.010 | 1.112 | 1.459 | 0.0000 | 0.0000 | 1.4591 |
| N | | | | 663 | | |
| D.F. | | | | 30 | | |
| model Chi-square | | | | 90.93 | | |
| P value | | | | 0.000 | | |

**** p< .001 *** p< .01 ** p< .05 *p< .10

**Table 4.30** Predicted probability of elderly living arrangement in plantation stratum

| Information | live with children | live with spouse | live with grandchild | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 38 | 28 | 4 | 30 |
| age 30 | 39 | 27 | 7 | 27 |
| age 45 | 39 | 25 | 11 | 25 |
| **Gender of migrant** | | | | |
| Female | 38 | 27 | 7 | 28 |
| Male | 40 | 26 | 7 | 27 |
| **Marital status of migrant** | | | | |
| Single | 39 | 26 | 7 | 28 |
| Married | 38 | 26 | 9 | 27 |
| Widow/separated/divorced | 49 | 24 | 11 | 16 |
| **Age group of children** | | | | |
| Children age 0 | 35 | 29 | 6 | 30 |
| Children age 5 | 44 | 24 | 8 | 24 |
| Children age 10 | 54 | 18 | 9 | 19 |
| **Number of migrant** | | | | |
| have > 1 migrant | 39 | 26 | 6 | 29 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 37 | 0 | 0 | 63 |

From above table, it is interesting that in all age groups of migrant, for both genders of migrant and for all age groups of elderly, an elderly tends to live with others more than living with their grandparents. As same as in terms of existential locality, having two houses and over in adjacent area leads an elderly to live with other more than living with their grandchildren. For this stratum, having EL leads 63 percent of elderly living with other instead of their grandparents (0 percent).

Table 4.31 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to elderly living arrangement in uplands area, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that having more than two houses as EL generates positive effect to an elderly's log odd to live with spouse by about 7.6 times compared with those having only one house and none. Rich households create negative effect to an elderly's log odd to live with spouse by 52 percent, compared with the middle economic status household.

Correspondingly, the older migrant means a greater chance for an elderly to live with grandchildren by about 1 time. More number of migrant means more chance for elderly to live with grandchildren and other by 0.8 and 0.6 times by comparing with living with their children. Both poor and rich households appear to reduce an elderly's log odd on living with grandchildren by 78 and 88 percent respectively.

Also, results for living with other suggest that having more than two houses as EL generates positive effect to an elderly's log odd to live with other by about 13 times compared with those having only one house and none.

**Table 4.31** Multinomial logistic regression result focusing on determinants of elderly living arrangement in uplands stratum

| | **live with spouse vs live with children** | **live with grandchildren vs live with children** | **live with other vs live with children** | **live with grandchild vs live with spouse** | **live with other vs live with spouse** | **live with other vs live with grandchild** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.018 | 1.041** | 1.045*** | 1.0177 | 1.0410 | 1.0455 |
| Sex of migrant | 0.998 | 1.009 | 0.943 | 0.9984 | 1.0089 | 0.9343 |
| *Marital status of migrant* | | | | | | |
| - Married | 1.303 | 1.566 | 0.977 | 1.3032 | 1.5656 | 0.9767 |
| - Widow, divorced, separated | 1.477 | 2.111 | 1.258 | 1.4775 | 2.1106 | 1.2580 |
| Number of migrant | 0.891 | 1.854* | 1.676* | 1.098* | 1.099 | 0.542 |
| *Household characteristics* | | | | | | |
| - household member | 0.901 | 1.036 | 1.016 | 0.9008 | 1.0364 | 1.0164 |
| - number of children | 0.951 | 0963 | 0.887** | 0.9512 | 0.9634 | 0.8870 |
| *Household status* | | | | | | |
| - Poor | 0.792 | 0.224*** | 1.050 | 0.7917 | 0.2245 | 1.0497 |
| - Rich | 0.480* | 0.128*** | 0.325*** | 0.4806 | 0.1289 | 0.3252 |
| Household debt | 0.902 | 0.660 | 0.689 | 0.9016 | 0.6599 | 0.6890 |
| EL in150m | 8.629* | 4.237 | 13.770** | 8.6293 | 4.2370 | 13.7705 |
| N | | | | 946 | | |
| D.F. | | | | 30 | | |
| model x2 | | | | 126.93 | | |
| p value | | | | 0.000 | | |

**** p< .001 *** p< .01 ** p< .05 * p< .10

**Table 4.32** Predicted probability of elderly living arrangement in uplands stratum

| Information | live with children | live with spouse | live with grandchild | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 49 | 20 | 6 | 25 |
| age 30 | 37 | 20 | 8 | 35 |
| age 45 | 26 | 18 | 10 | 46 |
| **Gender of migrant** | | | | |
| Female | 39 | 19 | 8 | 34 |
| Male | 39 | 20 | 8 | 33 |
| **Marital status of migrant** | | | | |
| Single | 39 | 20 | 8 | 33 |
| Married | 38 | 21 | 9 | 32 |
| Widow/separated/divorced | 31 | 24 | 12 | 33 |
| **Age group of children** | | | | |
| Children age 0 | 39 | 20 | 8 | 33 |
| Children age 5 | 40 | 19 | 7 | 34 |
| Children age 10 | 41 | 19 | 6 | 34 |
| **Number of migrant** | | | | |
| have > 1 migrant | 41 | 20 | 8 | 31 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 6 | 25 | 5 | 64 |

From above table, it is interesting that in all age groups of migrant, for both genders of migrant and for all age groups of elderly, an elderly tends to live with others more than living with their grandparents. As same as in terms of existential locality, having two houses and over in adjacent area leads an elderly to live with other more than living with their grandchildren.

Table 4.33 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to elderly living arrangement in mixed economy stratum, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that the older the age of the migrant means a one time greater possibility an elderly living with spouse. Rich household gives negative effect to an elderly's log odd on living with spouse by 55 percent. More number of migrant means more chance for elderly to live with grandchildren and other by one time more by comparing with living with their children.

Similarly, the older of migrant means one time more of possibility an elderly living with grandchildren. Having married migrant increases an elderly's log odd of living with grandchildren by 2 times. The more of household member and elderly member conversely gives effect as having more of household members reduces by 14 percent an elderly's log odd on living with grandchildren but having more of children in household increase one time of an elderly's log odd on living with grandchildren. Moreover, poor and rich households create negative effect to an elderly's log odd to live with grandchildren by 60 and 72 percent, compared with the middle economic status household.

Also, results suggest that the older of migrant means one time more for an elderly to live with other. Having widow, divorced and separated migrant leads the less chance for an elderly to live with other by 67 percent. The more number of children in household means the more chance for an elderly to live with other by one time. Contrarily, poor households create positive effect to an elderly's log odd to live with other by 1 time, while rich households create negative effect by 60 percent, compared with the middle economic status household.

**Table 4.33** Multinomial logistic regression result focusing on determinants of elderly living arrangement in mixed economy stratum

| | **live with spouse vs live with children** | **live with grandchildren vs live with children** | **live with other vs live with children** | **live with grandchild vs live with spouse** | **live with other vs live with spouse** | **live with other vs Live with grandchild** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.012** | 1.042** | 1.022* | 1.0123 | 1.0420 | 1.0222 |
| Sex of migrant | 0.969 | 1.642 | 0.867 | 0.9691 | 1.6416 | 0.8673 |
| *Marital status of migrant* | | | | | | |
| - Married | 0.961 | 2.723** | 0.985 | 0.9611 | 2.7235 | 0.9848 |
| - Widow, divorced, separated | 0.541 | 0.825 | 0.327** | 0.5410 | 0.8246 | 0.3271 |
| Number of migrant | 0.991 | 1.112* | 1.111* | 1.980 | 1.098 | 0.934 |
| *Household characteristics* | | | | | | |
| - household member | 0.938 | 0.860* | 0.816*** | 0.9378 | 0.8600 | 0.8159 |
| - number of children | 1.084 | 1.225*** | 1.246*** | 1.0848 | 1.2555 | 1.2467 |
| *Household status* | | | | | | |
| - Poor | 0.827 | 0.412* | 2.115** | 0.8273 | 0.4116 | 2.1155 |
| - Rich | 0.459*** | 0.286*** | 0.414*** | 0.4593 | 0.2859 | 0.4141 |
| Household debt | 1.381 | 0.768 | 0.632 | 1.3809 | 0.7676 | 0.6322 |
| EL in150m | 0.000 | 0.000 | 0.196 | 0.0000 | 0.0000 | 0.1961 |
| N | | | | 885 | | |
| D.F. | | | | 30 | | |
| model x2 | | | | 173.25 | | |
| p value | | | | 0.000 | | |

**** p< .001 *** p< .01 ** p< .05 * p< .10

**Table 4.34** Predicted probability of elderly living arrangement in mixed economy stratum

| Information | live with children | live with spouse | live with grandchild | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 50 | 20 | 4 | 26 |
| age 30 | 45 | 20 | 6 | 29 |
| age 45 | 39 | 19 | 10 | 32 |
| **Gender of migrant** | | | | |
| Female | 45 | 20 | 5 | 30 |
| Male | 45 | 19 | 8 | 28 |
| **Marital status of migrant** | | | | |
| Single | 45 | 19 | 7 | 29 |
| Married | 43 | 19 | 9 | 29 |
| Widow/separated/divorced | 56 | 15 | 12 | 17 |
| **Age group of children** | | | | |
| Children age 0 | 39 | 22 | 7 | 32 |
| Children age 5 | 49 | 17 | 7 | 27 |
| Children age 10 | 60 | 12 | 6 | 22 |
| **Number of migrant** | | | | |
| have > 1 migrant | 45 | 20 | 6 | 29 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 80 | 0 | 0 | 20 |

From above table, it is interesting that in all age groups of migrant, for both genders of migrant and for all age groups of elderly, an elderly tends to live with others more than living with their grandparents. As same as in terms of existential locality, having two houses and over in adjacent area leads an elderly to live with other (by 20 percent) more than living with their grandchildren (0 percent).

All in all, as far as researcher is concerned on the contextual differences, analysis done for each stratum is mainly aimed to point out clearly the effect of the concerned variables on the four topics of study, migration decision making, migration duration, elderly's living arrangement and children's living arrangement respectively. After context of stratum is controlled, findings for all areas demonstrate output in the same way as the older age of the migrant means one time more of possibility an elderly living with grandchildren. This finding fits with the fact that the migrants who are in the middle age tend to migrate for jobs, not for study. Then, they always leave their own parents in their hometown and migrate for longer. This situation leads to a higher possibility for the elderly to live with their grandchildren.

Moreover, having married migrant increases an elderly's log odd of living with grandchildren and the more number of migrants gives positive effect to elderly on living with other and grandchildren more. Interestingly, poor and rich households create negative effect to an elderly's log odd to live with grandchildren, compared with the middle economic status household. It clearly confirms that the fact that the poor and the rich are not those being migrants. Normally, even the poor needs to migrate, but because of "poor", they can not easily and conveniently afford to move. The same for the rich, because of "rich", they have no need to migrate for any reason. So migrants are normally in the middle class which can afford to migrate to get the better chance for their lives.

In addition, the finding from this part shows that having more than 2 houses as existential locality (EL) generates positive effect for the elderly to live with spouse by comparison with those having less than 2 houses located nearby. It means that having more nearby houses makes migrants feel more freely to migrate. Thus, the role of kin and neighbor in Thai society is very strong as it can sooth some concerns for the migrant on the faith of those left behind. In addition, results demonstrate that having widow, divorced and separated migrant leads to a smaller chance for an elderly to live with other by around 67 percent for all strata. This finding confirms the fact that separated, widow and divorced child is more likely to come back to live with their parents and relatives. Thus, the higher number of broken marriage persons directly relates to a lower chance of the elderly living with others, instead of their children. Furthermore, the more number of elderly in household means the more chance for an elderly to live with other. Also, economic factor is still an influential factor for migration. Finding from this part reflects the real situation as the poor households create positive effect to an elderly's log odd to live with other, while rich households create negative effect, compared with the middle income household.

## 4.4 Influence of existential locality (EL) and labor force age migration on children's living arrangement

This part is aimed to investigate the relationship among EL, labor force age migration and living arrangement of children as one vulnerable group based on the assumption that housing density affects the help that can be given among people and relates to a migrant's decision making on providing living arrangements for their children left behind.

Before going further, descriptive statistics of children are provided on age, sex and persons who child/children live with. Totally, there are 8,549 children in the studied area, is the highest number aged 10-14 years old at 3,303 persons. There are slightly more male children than female at 51.7 per 48.3 percent. Most of the children lives with their parents, following by those living with only their mother or only father while those living with grandparents were third.

**Table 4.35** Descriptive data of migrant in household having children by stratum

| | Strata | | | | | Total |
|---|---|---|---|---|---|---|
| | Urban | Rice field | Plantation | Uplands | Mixed eco | |
| **Age of migrant** | | | | | | |
| - 0-4 years | 51.51%(343) | 9.81%(217) | 11.62%(257) | 46.67%(1,032) | 16.39%(362) | 100.00%(2,211) |
| - 5-9 years | 16.75%(508) | 10.31%(313) | 13.64%(414) | 40.52%(1,230) | 18.78%(570) | 100.00%(3,035) |
| - 10-14 years | 16.50%(545) | 8.87%(293) | 9.90%(327) | 45.84%(1,514) | 18.89%(624) | 100.00%(3,303) |
| Total | 16.32%(1,396) | 9.6%(823) | 11.67%(998) | 11.67%(3,776) | 44.16%(1,556) | 100.00%(8,549) |
| **Sex of migrant** | | | | | | |
| - Male | 15.60%(690) | 9.02%(399) | 11.60%(513) | 46.11%(2,039) | 17.67%(781) | 100.00%(4,422) |
| - Female | 17.10%(706) | 10.27%(424) | 11.75%(485) | 42.10%(1,737) | 18.78%(775) | 100.00%(4,127) |
| Total | 16.32%(1,396) | 9.60%(823) | 11.67%(998) | 44.21%(3,776) | 18.20%(1,556) | 100.00%(8,549) |
| **Children live with** | | | | | | |
| - Parents | 14.96%(763) | 9.60%(492) | 11.25%(574) | 45.48%(2,315) | 18.71%(954) | 100.00%(5,098) |
| - Only mother/father | 18.06%(299) | 9.67%(160) | 10.03%(166) | 44.83%(742) | 17.41%(288) | 100.00%(1,655) |
| - Grandparents | 18.43%(151) | 10.50%(86) | 16.11%(132) | 38.82%(318) | 16.14%(132) | 100.00%(819) |
| - Others | 18.73%(183) | 8.70%(85) | 12.89%(126) | 41.04%(401) | 18.64%(182) | 100.00%(977) |
| Total | 16.32%(1,396) | 9.62%(823) | 11.67%(998) | 44.16%(3,776) | 18.23%(1,556) | 100.00%(8,549) |

**Table 4.36** Frequency in number of all variables for children's living arrangement in urban/semi urban stratum

| Variable | Children Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parents | | Only mother/father | | Grandparents | | Others | | | |
| Age group of migrant | | | | | | | | | | |
| 15-29 years old | 55.2 | 448 | 19.5 | 158 | 10.5 | 85 | 14.8 | 120 | 100.0 | 811 |
| 30-44 years old | 54.1 | 263 | 22.4 | 109 | 11.9 | 58 | 11.5 | 56 | 100.0 | 486 |
| 45-59 years old | 52.5 | 52 | 32.3 | 32 | 8.1 | 8 | 7.1 | 7 | 100.0 | 99 |
| Sex of migrant | | | | | | | | | | |
| Female | 56.4 | 398 | 17.3 | 122 | 11.9 | 84 | 14.4 | 102 | 100.0 | 706 |
| Male | 52.9 | 365 | 25.7 | 177 | 9.7 | 67 | 11.7 | 81 | 100.0 | 690 |
| Marital Status of migrant | | | | | | | | | | |
| Single | 57.1 | 245 | 21.2 | 91 | 4.0 | 17 | 17.7 | 76 | 100.0 | 429 |
| Married | 55.8 | 440 | 19.1 | 151 | 13.3 | 105 | 11.8 | 93 | 100.0 | 789 |
| Widow/Divorced/ Separated | 43.0 | 74 | 32.0 | 55 | 16.9 | 29 | 8.1 | 14 | 100.0 | 172 |
| have less than 2 houses within 150m | 55.0 | 757 | 21.1 | 291 | 10.8 | 148 | 13.1 | 180 | 100.0 | 1376 |
| have at least 2 houses within 150m | 30.0 | 6 | 40.0 | 8 | 15.0 | 3 | 15.0 | 3 | 100.0 | 20 |
| Household economic | | | | | | | | | | |
| Middle | 60.4 | 128 | 24.1 | 51 | 10.4 | 22 | 5.2 | 11 | 100.0 | 212 |
| Poor | 56.8 | 130 | 15.7 | 36 | 15.3 | 35 | 12.2 | 28 | 100.0 | 229 |
| Rich | 52.9 | 505 | 22.2 | 212 | 9.8 | 94 | 15.1 | 144 | 100.0 | 955 |
| Household debt | 52.7 | 564 | 21.8 | 233 | 11.8 | 126 | 13.7 | 147 | 100.0 | 1070 |
| Household member | | | | | | | | | | |
| 1-4 household members | 35.1 | 68 | 42.8 | 83 | 6.7 | 13 | 15.5 | 30 | 100.0 | 194 |
| 5-9 household members | 60.1 | 534 | 17.5 | 155 | 10.4 | 92 | 12.0 | 107 | 100.0 | 888 |
| > 9 household members | 51.3 | 161 | 19.4 | 61 | 14.6 | 46 | 14.6 | 46 | 100.0 | 314 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrant in HH | 56.2 | 685 | 21.1 | 257 | 9.4 | 114 | 13.4 | 163 | 100.0 | 1219 |
| >4 migrant in HH | 44.1 | 78 | 23.7 | 42 | 20.9 | 37 | 11.3 | 20 | 100.0 | 177 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 56.2 | 548 | 22.6 | 220 | 8.3 | 81 | 12.9 | 126 | 100.0 | 975 |
| 5-9 children in HH | 58.8 | 181 | 15.3 | 47 | 12.3 | 38 | 13.6 | 42 | 100.0 | 308 |
| > 9 children in HH | 30.1 | 34 | 28.3 | 32 | 28.3 | 32 | 13.3 | 15 | 100.0 | 113 |
| No. of elderly in HH | | | | | | | | | | |
| No elderly in household | 55.7 | 400 | 23.5 | 169 | 9.1 | 65 | 11.7 | 84 | 100.0 | 718 |
| 1 elderly in household | 51.6 | 247 | 20.7 | 99 | 15.7 | 75 | 12.1 | 58 | 100.0 | 479 |
| > 1 elderly in household | 58.3 | 116 | 15.6 | 31 | 5.5 | 11 | 20.6 | 41 | 100.0 | 199 |

**Table 4.37** Frequency in number of all variables of children's living arrangement in rice field stratum

| Variable | Children Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parents | | Only mother/father | | Grandparents | | Others | | | |
| Age group of migrant | | | | | | | | | | |
| 15-29 years old | 60.9 | 330 | 18.1 | 98 | 9.6 | 52 | 11.4 | 62 | 100.0 | 542 |
| 30-44 years old | 55.8 | 129 | 22.1 | 51 | 13.9 | 32 | 8.2 | 19 | 100.0 | 231 |
| 45-59 years old | 66.0 | 33 | 22.0 | 11 | 4.0 | 2 | 8.0 | 4 | 100.0 | 50 |
| Sex of migrant | | | | | | | | | | |
| Female | 62.7 | 266 | 14.9 | 63 | 12.3 | 52 | 10.1 | 43 | 100.0 | 424 |
| Male | 56.6 | 226 | 24.3 | 97 | 8.5 | 34 | 10.5 | 42 | 100.0 | 399 |
| Marital Status of migrant | | | | | | | | | | |
| Single | 66.5 | 157 | 19.5 | 46 | 4.2 | 10 | 9.7 | 23 | 100.0 | 236 |
| Married | 62.4 | 291 | 16.5 | 77 | 10.7 | 50 | 10.3 | 48 | 100.0 | 466 |
| Widow/Divorced/ Separated | 36.4 | 44 | 30.6 | 37 | 21.5 | 26 | 11.6 | 14 | 100.0 | 121 |
| have less than 2 houses within 150m | 60.0 | 490 | 19.2 | 157 | 10.4 | 85 | 10.4 | 85 | 100.0 | 817 |
| have at least 2 houses within 150m | 33.3 | 2 | 50.0 | 3 | 16.7 | 1 | 0.0 | 0 | 100.0 | 6 |
| Household economic | | | | | | | | | | |
| Middle | 55.6 | 124 | 22.9 | 51 | 9.9 | 22 | 11.7 | 26 | 100.0 | 223 |
| Poor | 54.0 | 129 | 29.7 | 71 | 9.2 | 22 | 7.1 | 17 | 100.0 | 239 |
| Rich | 66.2 | 239 | 10.5 | 38 | 11.6 | 42 | 11.6 | 42 | 100.0 | 361 |
| Household debt | 59.9 | 442 | 18.4 | 136 | 11.4 | 84 | 10.3 | 76 | 100.0 | 738 |
| Household member | | | | | | | | | | |
| 1-4 household members | 49.2 | 64 | 29.2 | 38 | 8.5 | 11 | 13.1 | 17 | 100.0 | 130 |
| 5-9 household members | 60.2 | 356 | 19.5 | 115 | 11.2 | 66 | 9.1 | 54 | 100.0 | 591 |
| > 10 household members | 70.6 | 72 | 6.9 | 7 | 8.8 | 9 | 13.7 | 14 | 100.0 | 102 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 57.1 | 432 | 21.0 | 159 | 11.4 | 86 | 10.4 | 79 | 100.0 | 756 |
| > 4 migrants in HH | 89.6 | 60 | 1.5 | 1 | 0.0 | 0 | 9.0 | 6 | 100.0 | 67 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 55.0 | 318 | 23.7 | 137 | 10.0 | 58 | 11.2 | 65 | 100.0 | 578 |
| 5-9 children in HH | 62.4 | 108 | 13.3 | 23 | 16.2 | 28 | 8.1 | 14 | 100.0 | 173 |
| > 10 children in HH | 88.5 | 46 | 0.0 | 0 | 0.0 | 0 | 11.5 | 6 | 100.0 | 52 |
| No. of elderly in HH | | | | | | | | | | |
| No elderly in household | 60.5 | 247 | 19.1 | 78 | 9.6 | 39 | 10.8 | 44 | 100.0 | 408 |
| 1 elderly in household | 60.4 | 198 | 21.0 | 69 | 10.1 | 33 | 8.5 | 28 | 100.0 | 328 |
| > 1 elderly in household | 54.0 | 47 | 14.9 | 13 | 16.1 | 14 | 14.9 | 13 | 100.0 | 87 |

**Table 4.38** Frequency in number of all variables for children's living arrangement in plantation stratum

| Variable | Children Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parents | | Only mother/father | | Grandparents | | Others | | | |
| Age group of migrant | | | | | | | | | | |
| 15-29 years old | 58.1 | 370 | 13.7 | 87 | 14.6 | 93 | 13.7 | 87 | 100.0 | 637 |
| 30-44 years old | 54.6 | 165 | 23.5 | 71 | 11.6 | 35 | 10.3 | 31 | 100.0 | 302 |
| 45-59 years old | 66.1 | 39 | 13.6 | 8 | 6.8 | 4 | 13.6 | 8 | 100.0 | 59 |
| Sex of migrant | | | | | | | | | | |
| Female | 61.2 | 297 | 10.3 | 50 | 15.1 | 73 | 13.4 | 65 | 100.0 | 485 |
| Male | 54.0 | 277 | 22.6 | 116 | 11.5 | 59 | 11.9 | 61 | 100.0 | 513 |
| Marital status of migrant | | | | | | | | | | |
| Single | 64.0 | 190 | 12.5 | 37 | 8.8 | 26 | 14.8 | 44 | 100.0 | 297 |
| Married | 58.4 | 358 | 17.1 | 105 | 14.0 | 86 | 10.4 | 64 | 100.0 | 613 |
| Widow/Divorced/ Separated | 29.5 | 26 | 27.3 | 24 | 22.7 | 20 | 20.5 | 18 | 100.0 | 88 |
| have less than 2 houses within 150m | 57.8 | 571 | 16.5 | 163 | 13.2 | 130 | 12.6 | 124 | 100.0 | 988 |
| have at least 2 houses within 150m | 30.0 | 3 | 30.0 | 3 | 20.0 | 2 | 20.0 | 2 | 100.0 | 10 |
| Household economic | | | | | | | | | | |
| Middle | 53.2 | 116 | 13.8 | 30 | 17.4 | 38 | 15.6 | 34 | 100.0 | 218 |
| Poor | 57.2 | 174 | 15.1 | 46 | 12.8 | 39 | 14.8 | 45 | 100.0 | 304 |
| Rich | 59.7 | 284 | 18.9 | 90 | 11.6 | 55 | 9.9 | 47 | 100.0 | 476 |
| Household debt | 58.7 | 509 | 15.8 | 137 | 13.6 | 118 | 11.9 | 103 | 100.0 | 867 |
| Household member | | | | | | | | | | |
| 1-4 household members | 43.0 | 64 | 30.9 | 46 | 9.4 | 14 | 16.8 | 25 | 100.0 | 149 |
| 5-9 household members | 57.1 | 421 | 15.1 | 111 | 15.2 | 112 | 12.6 | 93 | 100.0 | 737 |
| > 10 household members | 79.5 | 89 | 8.0 | 9 | 5.4 | 6 | 7.1 | 8 | 100.0 | 112 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 56.4 | 535 | 17.5 | 166 | 12.9 | 122 | 13.3 | 126 | 100.0 | 949 |
| > 4 migrants in HH | 79.6 | 39 | 0.0 | 0 | 20.4 | 10 | 0.0 | 0 | 100.0 | 49 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 55.4 | 360 | 18.9 | 123 | 12.0 | 78 | 13.7 | 89 | 100.0 | 650 |
| 5-9 children in HH | 57.6 | 175 | 14.1 | 43 | 16.1 | 49 | 12.2 | 37 | 100.0 | 304 |
| > 10 children in HH | 88.6 | 39 | 0.0 | 0 | 11.4 | 5 | 0.0 | 0 | 100.0 | 44 |
| No. of elderly in HH | | | | | | | | | | |
| No elderly in household | 58.3 | 368 | 17.9 | 113 | 11.3 | 71 | 12.5 | 79 | 100.0 | 631 |
| 1 elderly in household | 57.9 | 128 | 12.2 | 27 | 17.6 | 39 | 12.2 | 27 | 100.0 | 221 |
| > 1 elderly in household | 53.4 | 78 | 17.8 | 26 | 15.1 | 22 | 13.7 | 20 | 100.0 | 146 |

**Table 4.39** Frequency in number of all variables for children's living arrangement in uplands stratum

| Variable | Children Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parents | | Only mother/father | | Grandparents | | Others | | | |
| Age of migrant | | | | | | | | | | |
| 15-29 years old | 64.4 | 1,703 | 16.1 | 427 | 9.1 | 240 | 10.4 | 274 | 100.0 | 2,644 |
| 30-44 years old | 52.2 | 456 | 28.8 | 251 | 7.7 | 67 | 11.3 | 99 | 100.0 | 873 |
| 45-59 years old | 59.8 | 144 | 24.5 | 59 | 4.6 | 11 | 11.2 | 27 | 100.0 | 241 |
| Sex of migrant | | | | | | | | | | |
| Female | 65.1 | 1,131 | 15.3 | 265 | 9.0 | 157 | 10.6 | 184 | 100.0 | 1,737 |
| Male | 58.1 | 1,184 | 23.4 | 477 | 7.9 | 161 | 10.6 | 217 | 100.0 | 2,039 |
| Marital status of migrant | | | | | | | | | | |
| Single | 68.1 | 934 | 16.5 | 227 | 4.5 | 62 | 10.9 | 149 | 100.0 | 1,372 |
| Married | 58.2 | 1,234 | 21.2 | 450 | 10.2 | 216 | 10.5 | 222 | 100.0 | 2,122 |
| Widow/Divorced/ Separated | 52.1 | 147 | 23.0 | 65 | 14.2 | 40 | 10.6 | 30 | 100.0 | 282 |
| have less than 2 houses within 150m | 62.0 | 2301 | 18.9 | 702 | 8.4 | 313 | 10.7 | 397 | 100.0 | 3713 |
| have at least 2 houses within 150m | 22.2 | 14 | 63.5 | 40 | 7.9 | 5 | 6.3 | 4 | 100.0 | 63 |
| Household economic | | | | | | | | | | |
| Middle | 48.0 | 279 | 19.1 | 111 | 13.9 | 81 | 18.9 | 110 | 100.0 | 581 |
| Poor | 63.8 | 1,573 | 20.6 | 508 | 7.3 | 181 | 8.2 | 203 | 100.0 | 2,465 |
| Rich | 63.3 | 460 | 16.9 | 123 | 7.7 | 56 | 12.1 | 88 | 100.0 | 727 |
| Household debt | 58.7 | 1,623 | 20.2 | 558 | 9.5 | 262 | 11.6 | 320 | 100.0 | 2,763 |
| Household member | | | | | | | | | | |
| 1-4 household members | 45.4 | 204 | 39.2 | 176 | 4.2 | 19 | 11.1 | 50 | 100.0 | 449 |
| 5-9 household members | 62.3 | 1,599 | 18.3 | 470 | 8.7 | 224 | 10.7 | 275 | 100.0 | 2,568 |
| > 10 household members | 67.5 | 512 | 12.6 | 96 | 9.9 | 75 | 10.0 | 76 | 100.0 | 759 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 61.1 | 1,980 | 20.3 | 659 | 7.4 | 241 | 11.1 | 361 | 100.0 | 3,241 |
| > 4 migrants in HH | 62.6 | 335 | 15.5 | 83 | 14.4 | 77 | 7.5 | 40 | 100.0 | 535 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 60.6 | 1,356 | 22.0 | 493 | 5.9 | 131 | 11.6 | 259 | 100.0 | 2,239 |
| 5-9 children in HH | 62.6 | 609 | 16.8 | 163 | 11.4 | 111 | 9.2 | 90 | 100.0 | 973 |
| > 10 children in HH | 62.1 | 350 | 15.2 | 86 | 13.5 | 76 | 9.2 | 52 | 100.0 | 564 |
| No. of elderly in HH | | | | | | | | | | |
| No elderly in household | 63.6 | 1,733 | 21.3 | 581 | 7.2 | 197 | 7.8 | 212 | 100.0 | 2,723 |
| 1 elderly in household | 55.7 | 457 | 16.8 | 138 | 10.7 | 88 | 16.7 | 137 | 100.0 | 820 |
| > 1 elderly in household | 53.6 | 125 | 9.9 | 23 | 14.2 | 33 | 22.3 | 52 | 100.0 | 233 |

**Table 4.40** Frequency in number of all variables for children's living arrangement in mixed economy stratum

| Variable | Children Living Arrangement | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parents | | Only mother/father | | Grandparents | | Others | | | |
| Age group of migrant | | | | | | | | | | |
| 15-29 years old | 65.6 | 606 | 15.3 | 141 | 8.8 | 81 | 10.4 | 96 | 100.0 | 924 |
| 30-44 years old | 57.2 | 282 | 22.1 | 109 | 8.5 | 42 | 12.2 | 60 | 100.0 | 493 |
| 45-59 years old | 46.3 | 62 | 27.6 | 37 | 6.7 | 9 | 19.4 | 26 | 100.0 | 134 |
| Sex of migrant | | | | | | | | | | |
| Female | 66.3 | 514 | 12.9 | 100 | 7.7 | 60 | 13.0 | 101 | 100.0 | 775 |
| Male | 56.3 | 440 | 24.1 | 188 | 9.2 | 72 | 10.4 | 81 | 100.0 | 781 |
| Marital status of migrant | | | | | | | | | | |
| Single | 64.0 | 324 | 17.4 | 88 | 4.0 | 20 | 14.6 | 74 | 100.0 | 506 |
| Married | 61.7 | 583 | 18.0 | 170 | 10.4 | 98 | 9.9 | 94 | 100.0 | 945 |
| Widow/Divorced/ Separated | 44.8 | 47 | 28.6 | 30 | 13.3 | 14 | 13.3 | 14 | 100.0 | 105 |
| have less than 2 houses within 150m | 61.8 | 953 | 18.1 | 279 | 8.6 | 132 | 11.5 | 178 | 100.0 | 1542 |
| have at least 2 houses within 150m | 7.1 | 1 | 64.3 | 9 | - | 0 | 28.6 | 4 | 100.0 | 14 |
| Household economic | | | | | | | | | | |
| Middle | 65.7 | 238 | 18.0 | 65 | 6.6 | 24 | 9.7 | 35 | 100.0 | 362 |
| Poor | 62.5 | 232 | 16.2 | 60 | 11.6 | 43 | 9.7 | 36 | 100.0 | 371 |
| Rich | 58.8 | 484 | 19.8 | 163 | 7.9 | 65 | 13.5 | 111 | 100.0 | 823 |
| Household debt | 61.1 | 806 | 17.9 | 236 | 8.4 | 111 | 12.7 | 167 | 100.0 | 1,320 |
| Household member | | | | | | | | | | |
| 1-4 household members | 43.5 | 90 | 37.7 | 78 | 4.3 | 9 | 14.5 | 30 | 100.0 | 207 |
| 5-9 household members | 63.5 | 662 | 17.5 | 183 | 8.1 | 84 | 10.9 | 114 | 100.0 | 1,043 |
| > 10 household members | 66.0 | 202 | 8.8 | 27 | 12.7 | 39 | 12.4 | 38 | 100.0 | 306 |
| No. of migrant in HH | | | | | | | | | | |
| 1-4 migrants in HH | 60.1 | 778 | 21.1 | 273 | 7.7 | 99 | 11.1 | 144 | 100.0 | 1,294 |
| > 4 migrants in HH | 67.2 | 176 | 5.7 | 15 | 12.6 | 33 | 14.5 | 38 | 100.0 | 262 |
| No. of children in HH | | | | | | | | | | |
| 1-4 children in HH | 59.8 | 575 | 22.3 | 215 | 5.7 | 55 | 12.2 | 117 | 100.0 | 962 |
| 5-9 children in HH | 62.1 | 208 | 14.9 | 50 | 13.1 | 44 | 9.9 | 33 | 100.0 | 335 |
| > 10 children in HH | 66.0 | 171 | 8.9 | 23 | 12.7 | 33 | 12.4 | 32 | 100.0 | 259 |
| No. of elderly in HH | | | | | | | | | | |
| No elderly in household | 60.0 | 566 | 22.4 | 211 | 9.6 | 91 | 8.1 | 76 | 100.0 | 944 |
| 1 elderly in household | 62.2 | 273 | 14.1 | 62 | 6.6 | 29 | 17.1 | 75 | 100.0 | 439 |
| > 1 elderly in household | 66.5 | 115 | 8.7 | 15 | 6.9 | 12 | 17.9 | 31 | 100.0 | 173 |

Table 4.41 below reveals descriptive statistics on number of samples, mean and standard deviation of all variables divided by stratum. The highest number of samples is in uplands area where 3,776 children are included in the model. Mixed economy and urban/semi urban strata follow at 1,556 and 1,396 children.

**Table 4.41** Descriptive data of all variables divided by stratum of children's living arrangement

| | urban/semi-urban | | | rice field | | | Plantation | | | Uplands | | | mixed economy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** |
| Age of migrant | 1,396 | 29.44 | 9.75 | 823 | 28.04 | 9.27 | 998 | 28.15 | 9.68 | 3,776 | 26.92 | 10.10 | 1,556 | 29.23 | 0.41 |
| Sex of migrant | 1,396 | 0.49 | 0.50 | 823 | 0.48 | 0.50 | 998 | 0.51 | 0.50 | 3,,776 | 0.54 | 0.50 | 1,556 | 0.50 | 0.50 |
| *Marital status of migrant* | | | | | | | | | | | | | | | |
| - Single | 1,390 | 0.31 | 0.46 | 823 | 0.29 | 0.45 | 998 | 0.30 | 0.46 | 3,776 | 0.36 | 0.48 | 1,556 | 0.33 | 0.47 |
| - Married | 1,390 | 0.57 | 0.50 | 823 | 0.57 | 0.50 | 998 | 0.61 | 0.49 | 3,776 | 0.56 | 0.50 | 1,556 | 0.61 | 0.49 |
| - Others | 1,390 | 0.12 | 0.33 | 823 | 0.15 | 0.35 | 998 | 0.09 | 0.28 | 3,776 | 0.07 | 0.26 | 1,556 | 0.07 | 0.25 |
| Number of migrant | 1,396 | 2.46 | 1.43 | 823 | 2.38 | 1.36 | 998 | 2.41 | 1.21 | 3,776 | 2.71 | 1.62 | 1,556 | 2.86 | 1.75 |
| Number of elderly in HH | 1,396 | 0.63 | 0.73 | 823 | 0.62 | 0.69 | 998 | 0.52 | 0.75 | 3,776 | 0.34 | 0.59 | 1,556 | 0.50 | 0.69 |
| Number of child in HH | 1,396 | 4.36 | 3.70 | 823 | 4.20 | 3.17 | 998 | 4.22 | 2.68 | 3,776 | 5.47 | 4.29 | 1,556 | 5.10 | 3.94 |
| *Household economic status* | | | | | | | | | | | | | | | |
| - poor | 1,396 | 0.16 | 0.37 | 823 | 0.29 | 0.45 | 998 | 0.30 | 0.46 | 3,776 | 0.65 | 0.48 | 1,556 | 0.24 | 0.43 |
| - middle | 1,396 | 0.15 | 0.36 | 823 | 0.27 | 0.44 | 998 | 0.22 | 0.41 | 3,776 | 0.15 | 0.36 | 1,556 | 0.23 | 0.42 |
| - rich | 1,396 | 0.68 | 0.47 | 823 | 0.44 | 0.50 | 998 | 0.48 | 0.50 | 3,776 | 0.19 | 0.39 | 1,556 | 0.53 | 0.50 |
| Household debt | 1,396 | 0.77 | 0.42 | 823 | 0.90 | 0.30 | 998 | 0.87 | 0.34 | 3,773 | 0.73 | 0.44 | 1,556 | 0.85 | 0.36 |
| EL in 150m. | 1,396 | 0.18 | 2.10 | 823 | 0.03 | 0.48 | 998 | 0.04 | 0.43 | 3,776 | 0.07 | 0.63 | 1,556 | 0.04 | 0.44 |

Based on the assumption that each area has its own characteristics which directly affects the pattern of living arrangement for the children left behind, this study divides the study area into five strata and then investigates each of them separately.

Table 4.42 presents results from multinomial logistic regression which is conducted to investigate characteristics of migrants to children living arrangement. For urban/semi urban stratum, the contrast is designed into 6 groups to show the log odds of living with only with father or mother to living with both father and mother, living with grandparent to living with both father and mother, living with mother to living with both father and mother, living with grandparent to living with mother or father, living with other to live with mother or father, and living with others to living with grandparent. It appears that the older the migrant means that there is a one time greater possibility a child has to live with only one side of mother or father. On the contrary, living with grandparent and with other are less likely by around 5 percent comparing\in comparison with living only with father or mother. Male The migrant being male also has a positive effect of one time more on a child's possibility of living only with mother or father by comparison with female migrants. Migrants who are widowed, divorced and separated generate a one time more effect for a child to live with only mother or father by comparison with single migrants.

In terms of number of migrants, it is clear that the more the number of migrants means the more chance for a child to live with grandparents over only father/mother, grandparents over parents and other over only father and mother by 3, 4 and 1 times respectively. Similarly, having been married and widowed, divorced and separated migrants increase a child's log odd of living with grandparent over living with parents and only father and mother by 2 times. The more number of members in household means the one time more chance for a child to live with grandparent. If household has a debt, the child's possibility to live with grandparent is about 1 time more.

Also, results suggest that the more the number of elderly a household has means a one time more chance of a child's log odd to live with others, by comparison with living with both father and mother. Households being poor and rich are more likely for 2.5 times of child's log odd to live with other by comparing with moderate household. On contrary, there are around three times more of both rich and poor households where children are more likely to live with other by comparing with living with only farther or mother.

**Table 4.42** Multinomial logistic regression result focusing on determinants of children living arrangement in urban/ semi urban stratum

| | **live only with father/mother vs. live with both father and mother** | **live with grandparent vs. live with both father and mother** | **live with other vs. live with both father and mother** | **live with grandparent vs. live with mother/father** | **live with other vs. live with mother/father** | **live with other vs live with grandparent** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.0159* | 0.9887 | 0.9808 | 0.9732* | 0.9654** | 0.9920 |
| Sex of migrant | 1.6084*** | 0.9445 | 0.8839 | 0.5872* | 0.5496** | 0.9359 |
| *Marital status of migrant* | | | | | | |
| - Married | 0.8587 | 3.0950*** | 0.7644 | 3.6039*** | 0.8901 | 0.2469*** |
| - Widow, divorced, separated | 1.7867** | 6.9682*** | 0.7293 | 3.8999** | 0.4081* | 0.1046*** |
| Number of migrant | 0.7849 | 4.0866*** | 1.4194 | 5.2063*** | 1.8082** | 0.3473** |
| *Household characteristics* | | | | | | |
| - household member | 0.9815 | 1.0366 | 0.9364 | 1.0561 | 0.9540 | 0.9033* |
| - number of elderly | 0.8362 | 0.7869 | 1.3915** | 0.9409 | 1.6640*** | 1.7684*** |
| *Household status* | | | | | | |
| - Poor | 0.7789 | 1.5853 | 2.3902* | 2.0352* | 3.0686** | 1.5077 |
| - Rich | 1.1673 | 1.1034 | 3.5964*** | 0.9452 | 3.0808** | 3.2593** |
| Household debt | 1.3448 | 1.9170* | 1.3382 | 1.4254 | 0.9950 | 0.6980 |
| EL in150m | 2.2513 | 2.3344 | 3.8371 | 1.0369 | 1.7043 | 1.6436 |
| N | | | 1390 | | | |
| D.F. | | | 30 | | | |
| Model Chi-square | | | 154.15 | | | |
| p value | | | 0.001 | | | |

**** p< . 001 *** p< .01 ** p< .05 * p< .10

**Table 4.43** Predicted probability of children living arrangement in urban/semi urban stratum

| Information | live with mother & father | live with mother or father | live with Grandparent | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15-29 | 54 | 17 | 13 | 16 |
| age 30-44 | 55 | 21 | 11 | 13 |
| age 45-59 | 55 | 26 | 9 | 10 |
| **Gender of migrant** | | | | |
| Female | 57 | 17 | 11 | 15 |
| Male | 52 | 26 | 10 | 12 |
| **Marital status of migrant** | | | | |
| Single | 55 | 21 | 11 | 13 |
| Married | 53 | 20 | 16 | 11 |
| Widow/separated/divorced | 31 | 20 | 44 | 5 |
| **Age group of elderly** | | | | |
| Elderly age 60 | 58 | 19 | 11 | 12 |
| Elderly age 70 | 55 | 21 | 11 | 13 |
| Elderly age 80 | 52 | 24 | 10 | 14 |
| **Number of migrant** | | | | |
| have > 1 migrant | 54 | 19 | 13 | 14 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 33 | 30 | 15 | 22 |

From above table, finding from probability simulation shows something interesting that in all age groups of migrant, for both genders of migrant and for all age groups of children, a child tends to live with others more than living with their grandparents, only in case of divorced, separated and widow migrants which a child is more likely to live with their grandparents, instead of other. As same as in terms of existential locality, having two houses and over in adjacent area leads a child to live with other more than living as intergeneration with their grandparents.

Table 4.44 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to children living arrangement in rice field stratum, the six contrast groups show the log odds of living with live only with father or mother to live with both father and mother, live with grandparent to live with bother father and mother, live with other to live with both father and mother, live wither grandparent to live with mother or father, live with other to live with mother or father, and live with other to live with grandparent. It appears that the older of migrant means the less possibility a child has to live with

only one side of mother or father by about 1 percent. Widow, divorced and separated migrant has positive effect 2 times more on a child' s possibility of living only with mother or father are living with other by comparing with single migrant. Moreover, when migrants are divorced, widow or separated, children tend to live with grand parents 10 times more in comparison with living with both father and mother.

It is interesting that the more the number of migrants means more chance to live with grandparent and other than living with their parents by 2.4 and 1.5 times respectively. The more of household member reduces a child's log odd on living with only mother or father by 20 percent. Also, the rich household is less likely by 58 percent for a child to live with only mother or father, by comparing with the middle household.

Similarly, having married and widow, divorced and separated migrants increase a child's log odd of living with grandparent and living with other by 2 times and for 11 times respectively. The more number of members in household means the less chance for a child to live with grandparent by 13 percent. If household has a debt, child's possibility to live with grandparent is about 5 times more.

**Table 4.44** Multinomial logistic regression result focusing on determinants of children living arrangement in rice field stratum

| | **live only with father/mother vs live with both father and mother** | **live with grandparent vs live with both father and mother** | **live with other vs live with both father and mother** | **live with grandparent vs live with mother/father** | **live with other vs live with mother/father** | **live with other vs live with grandparent** |
|---|---|---|---|---|---|---|
| Age of migrant | 0.9959 | 0.9880 | 0.9774 | 0.9921 | 0.9814 | 0.9892 |
| Sex of migrant | 1.9302*** | 0.9177 | 1.2542 | 0.4754** | 0.6497 | 1.3666 |
| *Marital status of migrant* | | | | | | |
| - Married | 1.0665 | 3.0113** | 1.4089 | 2.8234* | 1.3210 | 0.4678 |
| - Widow, divorced, separated | 3.0570*** | 11.6814*** | 3.0071** | 3.8212* | 0.9836 | 0.2574* |
| Number of migrant | 0.5621** | 1.9541* | 1.4287 | 3.4760*** | 2.5413* | 0.7311 |
| *Household characteristics* | | | | | | |
| - household member | 0.8412*** | 0.8353** | 0.9142 | 0.9929 | 1.0867 | 1.0944 |
| - number of elderly | 1.2261 | 1.2810 | 1.1799 | 1.0447 | 0.9623 | 0.9210 |
| *Household status* | | | | | | |
| - Poor | 1.4163 | 1.0224 | 0.6101 | 0.7218 | 0.4307* | 0.5967 |
| - Rich | 0.4103*** | 1.2247 | 0.9321 | 2.9845** | 2.2715* | 0.7610 |
| Household debt | 1.1800 | 5.8950* | 0.9542 | 4.9956* | 0.8086 | 0.1618* |
| EL in150m | 3.0466 | 3.1262 | 3.9700 | 1.0261 | 1.3000 | 1.2701 |
| N | | | 823 | | | |
| D.F. | | | 30 | | | |
| Model x2 | | | 142.18 | | | |
| p value | | | 0.001 | | | |

**** p< .001 *** p< .01 ** p< .05 * p< .10

**Table 4.45** Predicted probability of children living arrangement in rice field stratum

| Information | live with mother & father | live with mother or father | live with grandparent | live with other |
|---|---|---|---|---|
| **Age of migrant** | | | | |
| age 15 | 57 | 19 | 11 | 13 |
| age 30 | 60 | 20 | 10 | 10 |
| age 45 | 63 | 20 | 10 | 7 |
| **Gender of migrant** | | | | |
| Female | 64 | 14 | 12 | 10 |
| Male | 56 | 24 | 9 | 11 |
| **Marital status of migrant** | | | | |
| Single | 60 | 19 | 11 | 10 |
| Married | 56 | 18 | 15 | 11 |
| Widow/separated/divorced | 25 | 23 | 38 | 14 |
| **Age group of elderly** | | | | |
| Elderly age 60 | 61 | 18 | 14 | 7 |
| elderly age 70 | 60 | 20 | 10 | 10 |
| Elderly age 80 | 58 | 22 | 7 | 13 |
| **Number of migrant** | | | | |
| have > 1 migrant | 62 | 15 | 12 | 11 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 40 | 39 | 21 | 0 |

From above table, finding from probability simulation shows something interesting but different from other strata that for existential locality, having two houses and over in adjacent area leads a child to live with grandparents more than living with other.

Table 4.46 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to children living arrangement in plantation stratum, the contrast shows the log odds of living with both mother and father to living with only father/mother, grandparent and other. It appears that male migrant generates positive effect for a child to live with only one side of mother or father by about 2 times by compared with female migrant. On contrary, male migrants generate negative effect to children as migration of male generates children to live with grandparent and live with other less than 64 and 61 percent to live with only father or mother respectively, by comparing with migration of female. Similarly, married migrant and widow, divorced and separated migrant have positive effect by 5 times, 10 times and 2 times more on a child' s possibility of living only with mother or father, living with grandparents and living with other by comparing

with single migrant. Interestingly, the more number of migrants means more chance for a child to live with grandparents than parents and only father/ mother by 7 and 15 times respectively.

As number of migrants being influential variables, finding shows that. The more number of migrants means more chance for a child to live with their grandparent than living with both parents and only father and mother by 7 and 15 times respectively. The more of household member reduces by 21, 25 and 16 percent a child's log odd on living with only mother or father, living with grandparents and living with other than living with parents.

For living with grandparent compared with living with both mother and father, the older age of migrant means the less chance by 8 percent of a child to live with grandparent. Having married migrant and widow, divorced and separated migrant increase a child's log odd of living with grandparent by about 1.4 times and for 10 times respectively. The more the number of houses located nearby means the more chance for a child to live with grandparent by 7 times while having a greater number of migrants means more chance for a child to live with their grandparent by 7 times also. In contrast, having a higher number of elderly creates positive effect for a child to live with grandparent by 0.5 times more. Also, in the poor household it is less likely by 51 percent for a child to live with grandparent, in comparison with the middle household.

**Table 4.46** Multinomial logistic regression result focusing on determinants of children living arrangement in plantation stratum

| | **live only with farther/mother vs. live with both father and mother** | **live with grandparent vs. live with both father and mother** | **live with other vs. live with both father and mother** | **live with grandparent vs. live with mother/father** | **live with other vs. live with mother /father** | **live with other vs. live with grandparent** |
|---|---|---|---|---|---|---|
| Age of migrant | 0.9869 | 0.9635** | 0.9822 | 0.9763 | 0.9952 | 1.0194 |
| Sex of migrant | 2.9755*** | 1.0830 | 1.1642 | 0.3639*** | 0.3912*** | 1.0749 |
| *Marital status of migrant* | | | | | | |
| - Married | 2.3676** | 2.3886** | 1.0645 | 1.0088 | 0.4495* | 0.4456* |
| - Widow, divorced, separated | 6.4468*** | 11.0486*** | 3.6268** | 1.7137 | 0.5625 | 0.3282* |
| Number of migrant | 0.4935** | 7.8195*** | 0.7534 | 15.8421*** | 1.5263 | 0.0963*** |
| *Household characteristics* | | | | | | |
| - household member | 0.7960*** | 0.7504*** | 0.8456** | 0.9427 | 1.0623 | 1.1269 |
| - number of elderly | 1.2105 | 1.4561** | 1.2746 | 1.2029 | 1.0529 | 0.8753 |
| *Household status* | | | | | | |
| - Poor | 0.8557 | 0.4991* | 0.8488 | 0.5833 | 0.9920 | 1.7006 |
| - Rich | 1.4261 | 0.5864* | 0.6776 | 0.4112** | 0.4751* | 1.1554 |
| Household debt | 0.6703 | 1.2331 | 0.6348 | 1.8397 | 0.9471 | 0.5148 |
| EL in150m | 1.1998 | 8.1049* | 2.2117 | 6.7550 | 1.8433 | 0.2728 |
| N | | | 998 | | | |
| D.F. | | | 30 | | | |
| model Chi-square | | | 166.84 | | | |
| p value | | | 0.001 | | | |

**** p < .001  *** p < .01  ** p< .05  * p< .10

**Table 4.47** Predicted probability of children living arrangement in plantation stratum

| Information | live with mother & father | live with mother or father | live with grandparent | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 51 | 17 | 18 | 14 |
| age 30 | 58 | 17 | 13 | 12 |
| age 45 | 65 | 16 | 9 | 10 |
| **Gender of migrant** | | | | |
| Female | 63 | 10 | 14 | 13 |
| Male | 53 | 23 | 12 | 12 |
| **Marital status of migrant** | | | | |
| Single | 58 | 17 | 13 | 12 |
| Married | 53 | 20 | 16 | 11 |
| Widow/separated/divorced | 16 | 32 | 39 | 13 |
| **Age group of elderly** | | | | |
| Elderly age 60 | 58 | 18 | 15 | 9 |
| Elderly age 70 | 58 | 17 | 13 | 12 |
| Elderly age 80 | 57 | 16 | 12 | 15 |
| **Number of migrant** | | | | |
| have > 1 migrant | 60 | 12 | 17 | 11 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 27 | 14 | 47 | 12 |

From above table, finding from probability simulation shows something interesting that in all age groups of migrant by average, a child tends to live with others more than living with their grandparents, only in case of divorced, separated and widow migrants which a child is more likely to live with their grandparents, instead of other. Something interesting is shown in terms of existential locality as having two houses and over in adjacent area leads a child to live with grandparents more than living with other.

Table 4.48 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to children living arrangement in uplands stratum, the contrast shows the log odds of living with both mother and father to living with only father/mother, grandparent and other. It appears that the older of migrant means one time more of possibility a child living with only one side of mother or father. Male migrant generate positive effect to a child's log odd by about 0.5 times to live only with mother/father, compared with female migrant. Married migrant has positive effect 3 times more on a child' s possibility of living only with mother or father and living with grandparents by comparing with single

migrant. Interestingly, having more than two houses as EL generates positive effect 5 times more for a child to live only father or mother and living with grandparents.

Number of migrants migrating out is another influential variable as it generates possibility for a child to live with grandparent than living with both parents and only mother or father by 3 and 4 times more respectively. The higher number of household members and elderly members reduces by 13 and 16 percent a child's log odd on living with only mother or father. Especially, the increase in number of elderly in household means one time more on average of children to live with other compared with bother father and mother, live with grandparent compare with live with mother or father and with other compare with live with only father or mother. Also, in the rich household it is less likely by 28 percent for a child to live with only mother or father, by comparing with the middle household. Moreover, the presence of household debt means a 0.4 times greater chance for a child to live with only father or mother.

Similarly, the older age of the migrant means 4 percent less of possibility a child living with grandparent. Having married migrant and widow, divorced and separated migrant increase a child's log odd of living with grandparent by 4 times and for 6 times respectively by comparing with living with only father or mother and living with both parents. The more number of elderly in household means the more chance for a child to live with grandparent by 0.4 times. If household has a debt, child's possibility to live with grandparent is about 0.7 times more. Contrarily, poor and rich households create negative effect to a child's log odd to live with grandparent by 61 and 60 percent respectively, compared with the middle economic status household.

Also, results suggest that the more number of elderly in household means the more chance for a child to live with other by 1 time. Contrarily, poor and rich households create negative effect to a child's log odd to live with other by 65 and 51 percent respectively, compared with the middle economic status household.

**Table 4.48** Multinomial logistic regression result focusing on determinants of children living arrangement in uplands stratum

| | **live only with farther/mother vs. live with both father and mother** | **live with grandparent vs. live with both father and mother** | **live with other vs. live with both father and mother** | **live with grandparent vs. live with mother/father** | **live with other vs. live with mother/father** | **live with other vs live with grandparent** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.0171*** | 0.9619*** | 1.0047 | 0.9457*** | 0.9878 | 1.0444*** |
| Sex of migrant | 1.5255*** | 1.1634 | 1.1260 | 0.7626 | 0.7381* | 0.9678 |
| *Marital status of migrant* | | | | | | |
| - Married | 1.3722** | 3.7666*** | 1.1273 | 2.7447*** | 0.8214 | 0.2992*** |
| - Widow, divorced, separated | 1.4434 | 6.8351*** | 1.1669 | 4.7352*** | 0.8084 | 0.1707*** |
| Number of migrant | 0.8279 | 4.3311*** | 0.9746 | 5.2312*** | 1.1772 | 0.2250*** |
| *Household characteristics* | | | | | | |
| - household member | 0.8914*** | 0.9562 | 0.9609 | 1.0726* | 1.0779** | 1.0049 |
| - number of elderly | 0.8452* | 1.4723*** | 1.9755*** | 1.7419*** | 2.3373*** | 1.3417** |
| *Household status* | | | | | | |
| - Poor | 0.8825 | 0.3610*** | 0.3530*** | 0.4090*** | 0.4000*** | 0.9779 |
| - Rich | 0.7295* | 0.3964*** | 0.4953*** | 0.5433** | 0.6790* | 1.2496 |
| Household debt | 1.3769** | 1.7638*** | 1.2671 | 1.2809 | 0.9202 | 0.7184 |
| EL in150m | 4.7429*** | 4.7731** | 1.5091 | 1.0063 | 0.3181* | 0.3161 |
| N | | | 3773 | | | |
| D.F. | | | 30 | | | |
| model Chi-square | | | 489.17 | | | |
| p value | | | 0.001 | | | |

**** p< .001 *** p< .01 ** p< .05 * p< .10

**Table 4.49** Predicted probability of children living arrangement in uplands stratum

| Information | live with mother & father | live with mother or father | live with grandparent | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 62 | 16 | 12 | 10 |
| age 30 | 61 | 20 | 8 | 11 |
| age 45 | 59 | 24 | 5 | 12 |
| **Gender of migrant** | | | | |
| Female | 65 | 16 | 8 | 11 |
| Male | 58 | 22 | 9 | 11 |
| **Marital status of migrant** | | | | |
| Single | 69 | 17 | 3 | 11 |
| Married | 57 | 21 | 12 | 10 |
| Widow/separated/divorced | 38 | 19 | 35 | 8 |
| **Age group of elderly** | | | | |
| Elderly age 60 | 59 | 19 | 14 | 8 |
| Elderly age 70 | 62 | 20 | 8 | 10 |
| Elderly age 80 | 63 | 20 | 5 | 12 |
| **Number of migrant** | | | | |
| have > 1 migrant | 62 | 17 | 10 | 11 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 31 | 47 | 14 | 8 |

From above table, finding from probability simulation shows that in all age groups of migrant, for both genders of migrant and for all age groups of children by average, a child tends to live with others more than living with their grandparents, only in case of divorced, separated and widow migrants which a child is more likely to live with their grandparents, instead of other. But in terms of existential locality, having two houses and over in adjacent area leads a child to live with their grandparents more than living with other.

Table 4.50 below presents result from multinomial logistic regression which is conducted to investigate characteristics of migrants to children living arrangement in mixed economy stratum, the contrast shows the log odds of living with both mother and father to living with only father/mother, grandparent and other. It appears that the older of migrant means one time more of possibility a child living with only one side of mother or father. Male migrant generates positive effect to a child's log odd by about 1 time to live only with mother/father, compared with female migrant. Interestingly, having more than two houses as EL generates positive effect 11 times and 15 times more for a child to live only father or mother and to live with

other. The more number of migrant means more chance for a child to live with grandparent by average 2 times by comparing with living with father and mother. The more of household member and elderly member reduces by 17 and 32 percent a child's log odd on living with only mother or father.

Similarly, the older of migrant means 3 percent less of possibility a child living with grandparent. Having married migrant and widow, divorced and separated migrant increase a child's log odd of living with grandparent comparing with living with father and mother by 6 times and for 3 times respectively. Contrarily, poor households create positive effect to a child's log odd to live with grandparent by 1 time, compared with the middle economic status household.

Also, results suggest that the older of migrant means one time more for a child to live with other. Having married migrant leads the less chance for a child to live with other by 16 percent by comparing to live with both father and mother. Having more than two houses as EL generates positive effect 15 times more for a child to live with other. The more number of elderly in household means the more chance for a child to live with other by one time. Contrarily, rich households create positive effect to a child's log odd to live with other by 0.6 times, compared with the middle economic status household while having debt of household gives the positive effect to a child to live with other by 0.8 times more.

**Table 4.50** Multinomial logistic regression result focusing on determinants of children living arrangement in mixed economy stratum

| | **live only with farther /mother vs live with both father and mother** | **live with grandparent vs live with both father and mother** | **live with other vs live with both father and mother** | **live with grandparent vs live with mother/father** | **live with other vs live with mother/father** | **live with other vs live with grandparent** |
|---|---|---|---|---|---|---|
| Age of migrant | 1.0265*** | 0.9780* | 1.0386*** | 0.9527*** | 1.0117 | 1.0619*** |
| Sex of migrant | 1.9637*** | 1.6413** | 0.8110 | 0.8358 | 0.4129*** | 0.4940* |
| *Marital status of migrant* | | | | | | |
| - Married | 0.8315 | 3.1688*** | 0.8470*** | 3.8106*** | 0.5856* | 0.1536*** |
| - Widow, divorced, separated | 1.5320 | 7.1856*** | 0.8152 | 4.4690*** | 0.5321 | 0.1134*** |
| Number of migrant | 0.8237 | 2.8515** | 1.0732 | 3.4617*** | 1.3029 | 0.3763** |
| *Household characteristics* | | | | | | |
| - household member | 0.8311*** | 0.9821 | 0.9555 | 1.1816*** | 1.1497*** | 0.9729 |
| - Number of elderly | 0.6829** | 0.7845 | 1.4613*** | 1.1487 | 2.1397*** | 1.8627*** |
| *Household status* | | | | | | |
| -Poor | 0.8559 | 1.7341* | 0.9964 | 2.0259* | 1.1641 | 0.5746 |
| -Rich | 1.3378 | 1.4276 | 1.5766* | 1.0671 | 1.1785 | 1.1043 |
| Household debt | 0.9604* | 1.1890 | 1.8474* | 1.2303 | 1.9116* | 1.5537 |
| EL in150m | 11.9412* | 3.990 | 16.5157* | 3.3400 | 1.3830 | 4.1400 |
| N | | | 1556 | | | |
| D.F. | | | 30 | | | |
| model Chi-square | | | 256.41 | | | |
| p value | | | 0.001 | | | |

**** p < .001 *** p< .01 ** p< .05 * p< .10

**Table 4.51** Predicted probability of children living arrangement in mixed economy stratum

| Information | live with mother & father | live with mother or father | live with grandparent | live with other |
|---|---|---|---|---|
| **Age group of migrant** | | | | |
| age 15 | 66 | 15 | 12 | 7 |
| age 30 | 61 | 18 | 9 | 12 |
| age 45 | 54 | 22 | 6 | 18 |
| **Gender of migrant** | | | | |
| Female | 66 | 13 | 7 | 14 |
| Male | 57 | 23 | 10 | 10 |
| **Marital status of migrant** | | | | |
| Single | 61 | 19 | 9 | 11 |
| Married | 61 | 18 | 12 | 9 |
| Widow/separated/divorced | 35 | 18 | 43 | 4 |
| **Age group of elderly** | | | | |
| Elderly age 60 | 65 | 16 | 12 | 7 |
| elderly age 70 | 62 | 18 | 9 | 11 |
| Elderly age 80 | 58 | 20 | 7 | 15 |
| **Number of migrant** | | | | |
| have > 1 migrant | 62 | 16 | 10 | 12 |
| **Existential locality** | | | | |
| have at least 2 houses in 150m | 13 | 50 | 0 | 37 |

From above table, finding from probability simulation shows something interesting that in all age groups of migrant, for both genders of migrant and for all age groups of children by average, a child tends to live with others more than living with their grandparents, only in case of divorced, separated and widow migrants which a child is more likely to live with their grandparents, instead of other. As same as in terms of existential locality, having two houses and over in adjacent area leads a child to live with other (37 percent) more than living as intergeneration with their grandparents (0 percent).

In conclusion, after analysis is done for each stratum, findings for all have appeared in the same direction as the older age of migrants means a greater possibility of a child having to live with only one of either the mother or father. This is because old age migrants are mainly married, have children and are migrating for work, so they have to leave their children with their spouse who still lives in the hometown. The migrant being male also has a greater positive effect on the possibility of a child

living only with mother or father by comparison with the migrant being a female. This finding demonstrates vividly the role of the female as caretaker in Thai society. Normally when a household needs one of its members to migrate for higher earnings, the male is assigned for this purpose while the female is kept for taking care of others who are vulnerable groups. Furthermore, the findings also confirm the real situation in which migrants who are widowed, divorced and separated generate a greater possibility for a child to live with only the mother or father in comparison with a single migrant.

In terms of number of migrants, it is clear that the more the number of migrants means the more chance for a child to live with grandparents over only father/mother. It confirms the fact that migration still generates a negative effect for children in rural area as migration for them does not mean “household migration”, but “parents’ migration”. Thus, children and the elderly are always left in their hometown until their parents have achieved success in the job and would like to settle down in place of destination. This phenomenon tends to be more serious due to the number of migrants in Kanchanaburi having gradually increased over time. An intelligent approach to the problem of those who are left behind requires the action of people in community.

Interestingly, the more number of members in household mean the more chance for a child to live with grandparent. If household has a debt, child’s possibility to live with grandparent is about 1 time more. This finding reflects that fact that migration has still been the way out for any poor family. Migration is the “safety valve” for the family to reduce the consumption burden by let some who are proper to be migrants for getting the more earning, saving all left. Finding also shows one thing interesting that households of being poor and rich are more likely for a child to live with other by comparing with middle household. One more point interesting is that having more than two houses as existential locality (EL) generates positive effect for a child to live only father or mother and living with grandparents. It means that higher number of nearby house generates warm effect for migrants as they feel comfortable

for migrating out and left their children there. Thus, EL is one influential factor for letting migrants migrating out with a little feeling of concern for the felt behind.

# CHAPTER V
# DISCUSSION

Findings from this research are grouped and discussed into four parts according to the four parts of the results as 1) the relationship of existential locality and labor force migration to migration decision making 2) the relationship of existential locality and labor force migration to migration duration 3) the relationship of existential locality and labor force migration to children's living arrangement and 4) the relationship of existential locality and labor force migration to elderly living arrangement.

## 5.1 Existential locality and labor force migration to migration decision making

This study is intended to ascertain whether existential locality and migration of labor force affects migration decision to move or not, The findings of interest are as follows.

Demographers always mentions that age is one influential variable for any demographic circumstance. A finding from this part shows that the higher the age of the potential migrant, the less the probability of migration in every stratum. This finding shows the fact that older people tend to settle down normally because of getting married and having permanent jobs in comparison with those who are younger. Moreover, males tends to migrate around 0.02- 0.43 times more than females in every stratum due to females in Thai or other Asian societies having to take care of other family households as well as household chores. A study done in China and India in 1984 of Mosley and Chen confirmed this finding as it stated that when the mother migrated to another place or even worked outside, the absence of mother at home became one of the underlying causes of child malnutrition (Mosley and Chen, 1984).

In terms of marital status, also counted as one important variable, this study found that married people are 15, 33 and 14 percent less likely to migrate than

single persons in urban, uplands and mixed economy strata respectively. Persons who are separated/widow and divorced tend to migrate 2 times more than single persons in all strata. It means that married people tend to not move but love to live together with other family members in place. In case of having the necessity to migrate, migrants who can afford accommodation and the cost of living in the place of destination normally bring all other family members to live with them in the place of destination. But in case of having no ability to do that, the living arrangement of those who are left behind, especially those who are in vulnerable group such as children and elderly, is designed carefully. A study of Ritcher el al. in 1997 mentioned that decision making of migrants is not the result of individual opinion but it is a household opinion as to which is the best way to respond to all family member's needs (Ritcher, et al, 1997).

One interesting thing that was found from this study is that persons who have formal and informal kinship or having more than two houses located with a radius of 150 meters are around 52 percent less likely to migrate than those who have no nearby houses within 150 radius for almost all strata. This finding shows something quite interesting – that the social ties in Thai society are very strong. People do not want to move out. The social ties means the way people support and encourage each other on doing any thing in their daily life. In a society where the social ties are strong, people can live with happiness within the arms of their kin and their neighborhood. Even though the economic pull factor from urban area is quite attractive persuading many people to migrate to get better jobs and quality of life, not all migrate. A study of Uhlenberg in 1973 pointed out that push and pull economic factors are not strong enough in some societies to make people migrate out; he mentioned that "sometimes the basic problem is not why people migrate but rather why they do not" (Uhlenberg, 1973). He raised case studies of Negro people in U.S.A in 1920, Japanese-American migration from internment camps during World War II and the exodus from Southern Applalachia between 1930 and 1960 to show that push and pull economic factors may not be the only strongly influential factors for migration. He explained that the social attachment to the area, in terms of association with churches and clubs, the strong family ties, as well as the difficulty of adjustment to a metropolitan environment can keep people living in their hometown.

When household economic factors such as debt and household economic status were included into the model, the study found that the poor household is 0.2-0.4 times more likely to migrate than moderate income households on average in all strata. In contrast, a rich household is 21- 36 percent less likely to migrate than the moderate one among all strata. In terms of debt, a household having debt is around 0.5 times more likely to migrate than those having no debt for all strata. This finding is in accordance with many studies pointing out that poverty is a main cause of migration in countries throughout the world. Households having debt have more certainty to migrate if they have a chance to migrate to the more developed place where it is possible to do better.

## 5.2 The relationship of existential locality and labor force migration to migration duration

The duration of migration is one measurable factor employed to check whether having houses located nearby, so-called existential locality (EL), has positive and negative effects on migration. This part is based on the assumption that if having houses nearby directly positively affects the free feeling of migrants, their duration migration must be longer than those having no houses located nearby. The finding from this study shows that migrants having at least two houses and more located within 150 meter diameter appear likely to migrate for shorter periods, that less than one year at 66, 61, 57 and 47 percent in urban, mixed economy, rice field and uplands respectively while there only 8 percent of migrants migrate for shorter periods in plantation areas. It means that having houses located nearby gives an adverse effect differing from the study assumption or it means that having house of EL leads to stronger social ties. As far as we are all concerned, agricultural society and social ties have direct relation as the agricultural sector needs a huge number of laborers helping each other in farming work. Strong social ties in an area help work in the farm to be more convenient. This is a reason why the strong social ties measured through density of houses located near each other can keep people from migrating out.

## 5.3 The relationship of existential locality and labor force migration to elderly's living arrangement

The findings from this part are quite similar to those situations happening on the children's living arrangement. Again, the discussion divides the study area into 5 strata. For urban/semi urban area, older age of migrants means less chance for an elderly person to live with others. It means that the older migrants have normally already settled down, so they tend to live with their family including their old parent. The higher number of household members leads to more chance for an elderly person to live with others, not with his/her child. This finding can be explained by the fact that where there are a lot of members in a household, the number of migrants might be higher accordingly. Thus, it leads systematically to the elderly person living with others due to his/her children having already migrated out. One more interesting thing found is that the higher number of children in a household leads to more chance for the elderly to live with their children. This might be explained through the fact that children need the care from their parents due to the fact that they are too young to take care of themselves. When parents of the children have not migrated, the elderly person also has more chance to live with their children who are the children's father and mother simultaneously.

In the rice fields, the findings from this stratum are quite different from the others as it was found that the higher number of houses as EL means more chance for the elderly to live with their children. A reasonable explanation for this finding might be that because labor is needed in rice farming, so housing location of people in rice society is always clustered in order that they can help each other in terms of labor for rice farm. Thus, houses located as EL might mainly be relatives so they have to live close to help each other due to the needs of their occupation as farmer a in the rice fields. As same as in plantation and uplands, the findings are quite similar to those for the rice field as the higher density of houses means more chance for the elderly to live with their children due to plantation society needing a lot of labor for the farm. Married migrants leads to more chance for the elderly to live with their children than single migrant. The married might migrate at a lower rate than those who are single.

Moreover, the poorer migrants are, the more chance there is for the elderly to live with their children due to the fact that the poor can not handle the cost of migration. This supposition fits with Lee's theory of migration selectivity (Lee, 1966).

As similar as one concerns, in the mixed economy stratum, some findings are quite similar to others while there are some that are different. Of the similar ones, it was found that getting older migrants means less chance for an elderly person to live with others. It means that older migrants are more likely to stay in their hometown so they have more chance to live with their old parents at the same time. In addition, a greater number of children in a household leads to a greater chance for the elderly to live with their children due to the elderly's children choosing to live with their kids in their hometown. For different points, a higher number of household members generate less chance for the elderly to live with their children. It might be because in an area of mixed economy, labor is not needed much by comparison with rice and plantation or even uplands farm, thus, those of labor force age choose to migrate for the significantly better income in urban areas.

### 5.4 The relationship of existential locality and labor force migration to children's living arrangement

Migration theory states that migration decision is not an individual idea but it is a household census to allow one to migrate and keep one to take care of household chores and those left behind. Thus, this part is intended to find whether the density of living locality or kinship system can do anything for taking care of the children left behind. The study investigated each stratum to find results that accounted for stratum difference.

In the urban/semi-urban stratum, there were three main things found. Firstly, the migrant being widowed, divorced or separated has a 2 times more positive effect on a child's possibility of living only with mother or father in comparison with a single migrant. It is clear that when labor force persons get divorced, separated or even widowed, their kids can not live with both their father and mother. Thus, marital

status is an influential factor for children's living arrangement in rice society. Also, the finding shows that having more than two houses is one cause leading a child to be 1.3, 1.2 and 3 times more likely to live with only father/mother, with grandparent and living with other respectively in comparison with living with both father and mother. This finding is in accordance with a study of Sawangdee (1997) which revealed that a child whose household did not have a household member migrating earlier seemed to have a higher possibility of staying with both parents in comparison with those whose household had a household member migrating to a new destination. In addition, household economic factors can affect children's living arrangement as in the rich household it is 58 percent less likely for a child to live with only mother or father, by comparing with the middle household. It might be because there is less need for the rich to migrate by comparing with the poor (Guest P, et. al, 1994). Thus, rich children can have more chance to live with their parents than children of a poor family. Moreover, the finding shows that in a household with debt the child's likelihood of living with grandparents is about one time more than that of living with its parents.

In terms of the rice stratum, as in the urban/semi-urban stratum, widowed, separated and divorced migrants increase a child's log odd of living with a grandparent and living with others by 2 times and 11 times respectively. The higher number of members in household means there is a 13 percent lower chance for a child to live with a grandparent. If a household has a debt, the child is about 6 times more likely to live with a grandparent than with its parents. On the question of existential locality, the findings show that having more than two houses as EL leads a child to be 1-8 times more likely to live with only father/mother, grandparent and other more than living with both parents. For the plantation stratum, there are some points that were similar to the two previously discussed strata as the older age of migrants leads to a lower likelihood of the child living with others. It means that the older migrants are less likely to migrate, thus a child has more chance to live with both parents. Similarly, where there is a separated or divorced spouse, there is more chance for a child to live with other more than living with both parents while having more than two houses of EL leads to a child living with other more than both father and mother. This finding confirms the strong role of the social ties in caring for vulnerable group

such as children. The child of a broken family still has his/her relatives or even other people to take care of him or her.

One interesting finding is that more household members means more chance for a child to live with others, instead of his/her parent. When the household has a lot of members a mother or father can migrate without any unnecessary concern for his/her kid. Thus, migration is the best way out for the family having many members for taking care of those who are vulnerable persons. For uplands, it is clear that when labor force people get divorced, separated or even widowed, their kids can not live with both their father and mother, so more divorced, separated and widowed migrants means more chance for a child to live with others instead of his/her father or mother. Thus, marital status is an influential factor in children's living arrangement in uplands area. Similar to other earlier strata, having more than two houses of EL leads to a child living with others more than with both father and mother. In addition in a household with debt, a child has to live with others instead of his/her father and mother due to the fact that persons who migrate might be the child's parents. Findings from the uplands are quite similar to those from the mixed-economy as having more than two houses of EL leads to a child living with others more than both father and mother. In addition, in rich households, a child has more chance to live with both father and mother, in comparison with middle economic households.

# CHAPTER VI
# CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Conclusion

This research investigated the influence of labor force age out migration and existential locality on migration of people of labor force age, duration of migration and elderly and children's living arrangement. The findings are shown separately in four parts.

First of all parts is intended to explore the role of kin and non-kin measured through having houses or not within a radius of150 meters on migrants' decision making. The number of houses, with a dummy scale of 0 is equal to having less than two houses and 1 is equal to having at least two houses, was employed for the independent variable while decision making of migrants was divided in to "migrate" and "not migrate". Other influential variables personnel characteristics of migrant including age, gender and marital status, economic variables of household economic status and debt, and household size measured through number of people in each age group and total members in household are employed as controlled variables. This step of study is based on the assumption that having of surrounding houses leads to the higher probability the migrants moving out.

Finding shows that the higher in age appears the less probability of migrants to migrate in every stratum, except in uplands where the higher age means the higher probability to move out. Male tends to migrate around 0.02- 0.43 times more than female in every stratum. Married people are less likely to migrate by 15, 33 and 14 percent than single person in urban, uplands and mixed economy strata respectively. Persons who are separated/widow and divorced tend to migrate more 2 times than single persons in all strata. In addition, persons who have formal and informal kinship in 150 meter of radius are less likely to migrate than those who have

no nearby houses within 150 radius by 46, 60, 37 and 43 percent in urban, plantation, uplands and mixed economy strata respectively.

When household economic status was put into the model, finding shows that poor household is more likely to migrate than moderate one as 0.2-0.4 times by average in all strata. On contrary, rich household is less likely to migrate than the moderate one by 21- 36 percent among strata. In terms of debt, household of having debt is more likely to migrate than those of having no debt by around 0.5 times for all strata. In terms of household size, finding from this study shows that the higher of household members means the higher chance for migrants to migrate out for all types of strata. At the same time, having higher number of migrants and children in household means a chance to migrate among migrants having to increase simultaneously.

The second part is intended to explore the role of kin and non-kin measured through having houses within 150 meters (EL) on migration duration among labor force age. Other influential variables such as economic variables of household economic status and debt, and household size measured through number of people in each age group and total members in household are employed as some influential variables. This step of study is based on the assumption that the higher density of surrounding houses leads to the higher probability the migrants moving out longer. Finding from the study shows the main thing that migrants having at least two houses and more locating within 150 meter diameter appear to migrate shorter or less than one year by 66, 61, 57 and 47 percent in urban, mixed economy, rice field and uplands respectively while there is only 8 percent migrants migrating shorter in plantation area.

Analysis on adjusted probability appears that in every stratum, by average 70% of migrants migrated less than one year when there are at least two houses located nearby. For urban/semi urban, 67 percent of migrants migrating less than one year while there are 69 percent in rice field and mixed economy and 70 percent in plantation and uplands respectively. But, the number of migrants migrating more than

one year is lower as around 20 percent in all strata by average. It means that the higher density of houses located nearby leads to less number of migrants migrating long.

The third part is aimed to investigate on migration of labor force age and influence of having at least two houses located nearby to living arrangement for the elderly who are left behind. For urban/semi urban stratum, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that the older of migrant means one time more of possibility an elderly living with spouse. The more of household member and elderly member conversely gives effect as having more of household members reduces by 7 percent an elderly's log odd on living with spouse and by 14 percent an elderly's log odd on living with grandchildren but having more of children in household increase one time of an elderly's log odd on living with spouse.

Similarly, the older of migrant means one time more of possibility an elderly living with grandchildren. Having married migrant increases an elderly's log odd of living with grandchildren by 2 times. The more number of migrants gives positive effect to elderly on living with other and grandchildren by around 0.6 to 1 times more. The more of household member and elderly member conversely gives effect as having more of household members reduces by 14 percent an elderly's log odd on living with grandchildren but having more of children in household increase one time of an elderly's log odd on living with grandchildren.

In rice field, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that both poor and rich households create positive effect to an elderly's log odd to live with spouse by 1.2 and 0.8 times, compared with the middle economic status household. Moreover, having debt of household gives the positive effect to an elderly to live with spouse by 3.8 times more. The more number of migrants means more chance for elderly to live with grandchildren by 0.5 times. Correspondingly, having married migrant increases an elderly's log odd of living with grandchildren by about 2 times. The more of

household member gives positive effect to an elderly's log odd on living with grandchildren by 0.3 times. Also, results suggest that having widow, divorced and separated migrant leads the less chance for an elderly to live with other by 57 percent. Poor households create positive effect to an elderly's log odd to live with other by 2 times, compared with the middle economic status household.

Finding from plantation study shows that having married migrant increases an elderly's log odd of living with grandchildren by 2 times while having widow, divorced and separated reduces an elderly's log odd of living with other by 68 percent. The more of migrants gives positive effect by 0.6 times more by average for the elderly to live with grandchildren and or other than live with their children. The more of household member and elderly member conversely gives effect as having more of household members reduces by 16 percent an elderly's log odd on living with other but having more of children in household increase one time of an elderly's log odd on living with other. Moreover, rich households create negative effect to an elderly's log odd to live with other by 57 percent while poor one generates positive effect by 1.2 times, compared with the middle economic status household. In uplands area, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that having more than two houses as EL generates positive effect to an elderly's log odd to live with spouse by about 8.6 times compared with those having only one house and none. Rich households create negative effect to an elderly's log odd to live with spouse by 52 percent, compared with the middle economic status household.

Correspondingly, the older migrant means the more chance for an elderly to live with grandchildren by about 1 time. More number of migrant means more chance for elderly to live with grandchildren and other by 0.8 and 0.6 times by comparing with living with their children. Both poor and rich households appear to reduce an elderly's log odd on living with grandchildren by 78 and 88 percent respectively. For mixed economy stratum, the contrast shows the log odds of living with children to living with spouse, grandchildren and other. It appears that the older of migrant means one time more of possibility an elderly living with spouse. Rich

household gives negative effect to an elderly's log odd on living with spouse by 55 percent. More number of migrant means more chance for elderly to live with grandchildren and other by one time more by comparing with living with their children.

Similarly, the older of migrant means one time more of possibility an elderly living with grandchildren. Having married migrant increases an elderly's log odd of living with grandchildren by 2 times. The more of household member and elderly member conversely gives effect as having more of household members reduces by 14 percent an elderly's log odd on living with grandchildren but having more of children in household increase one time of an elderly's log odd on living with grandchildren. Moreover, poor and rich households create negative effect to an elderly's log odd to live with grandchildren by 60 and 72 percent, compared with the middle economic status household.

The last part is aimed to investigate the relationship among EL, labor force age migration and living arrangement of children as one vulnerable groups based on assumption that having at least two houses located nearby affects to help each others among people and relates to migrant's decision making on providing living arrangement for their children left behind.

For urban/semi urban stratum, the contrast is designed into 6 groups to show the log odds of living with live only with father or mother to live with both father and mother, live with grandparent to live with bother father and mother, live with other to live with both father and mother, live wither grandparent to live with mother or father, live with other to live with mother or father, and live with other to live with grandparent. It appears that the older of migrant means the more one time of possibility a child has to live with only one side of mother or father. On contrary, living with grandparent and with other are less likely by around 5 percent by comparing with living only with father or mother. Male migrant also has positive effect one time more on a child's possibility of living only with mother or father by comparing with female migrant. Migrants who are widow, divorced and separated

generate one time more of effect for a child to live with only mother or father by comparing with single migrant.

In terms of number of migrants, it is clear that the more number of migrants means the more chance for a child to live with grandparents over only father/mother, grandparents over parents and other over only father and mother by 3, 4 and 1 times respectively. The reasonable explanation for this point might be shown simultaneously with the age of migrants as the older age of migrants are those who migrate for job, not for studying. These migrants are married and already having children so they normally seek for the better chance for their family and migration is one smart way for them. In rice field stratum, it appears that the older of migrant means the less possibility a child has to live with only one side of mother or father by about 1 percent. Widow, divorced and separated migrant has positive effect 2 times more on a child' s possibility of living only with mother or father are living with other by comparing with single migrant. Moreover, when migrants are divorced, widow or separated, children tend to live with grand parent by 10 times by comparing with living with both father and mother. In plantation stratum, finding shows that male migrant generates positive effect for a child to live with only one side of mother or father by about 2 times by compared with female migrant. On contrary, male migrants generate negative effect to children as migration of male generates children to live with grandparent and live with other less than 64 and 61 percent to live with only father or mother respectively, by comparing with migration of female. Similarly, married migrant and widow, divorced and separated migrant have positive effect by 5 times, 10 times and 2 times more on a child' s possibility of living only with mother or father, living with grandparents and living with other by comparing with single migrant. Interestingly, the more number of migrants means more chance for a child to live with grandparents than parents and only father/mother by 7 and 15 times respectively.

As number of migrants being influential variables, finding shows that The more number of migrants means more chance for a child to live with their grandparent than living with both parents and only father and mother by 7 and 15 times

respectively. The more of household member reduces by 21, 25 and 16 percent a child's log odd on living with only mother or father, living with grandparents and living with other than living with parents. In uplands area, it appears that the older of migrant means one time more of possibility a child living with only one side of mother or father. Male migrant generate positive effect to a child's log odd by about 0.5 times to live only with mother/father, compared with female migrant. Married migrant has positive effect one time and 3 times more on a child' s possibility of living only with mother or father and living with grandparents by comparing with single migrant. Interestingly, having more than two houses as EL generates positive effect 4 times more for a child to live only father or mother and living with grandparents.

Interestingly, the increase in number of elderly in household means two times more by average of children to live with other compared with bother father and mother, live with grandparent compare with live with mother or father and with other compare with live with only father or mother. Also, the rich household is less likely by 28 percent for a child to live with only mother or father, by comparing with the middle household. Moreover, the more household debt means more chance by 0.4 times for a child to live with only father or mother. For mixed economy area, It appears that the older of migrant means one time more of possibility a child living with only one side of mother or father. Male migrant generates positive effect to a child's log odd by about 1 time to live only with mother/father, compared with female migrant. Interestingly, having more than two houses as EL generates positive effect 11 times and 15 times more for a child to live only father or mother and to live with other. The more number of migrant means more chance for a child to live with grandparent by average 2 times by comparing with living with father and mother. The more of household member and elderly member reduces by 17 and 32 percent a child's log odd on living with only mother or father.

Similarly, the older of migrant means 3 percent less of possibility a child living with grandparent. Having married migrant and widow, divorced and separated migrant increase a child's log odd of living with grandparent comparing with living

with father and mother by 6 times and for 3 times respectively. Contrarily, poor households create positive effect to a child's log odd to live with grandparent by 1 time, compared with the middle economic status household.

All in all, the theory of Kingsley Davis has still been a classic theory, providing high ability to explain the phenomenon of migration in Thailand and Kanchanaburi. The explanation of this theory is based on the changing behavior of the individual members of the society when they encountered resource pressure due to population growth. However, the theory was established when the world situation was in agricultural society in which fertility rate had been high in its level. But nowadays, the fertility rate of many societies throughout the world has gradually declined to very low rate. But migration phenomenon has still revealed while a finding from this research shows clearly that household size is a powerful factor for migration. When other variables are controlled, person living in a big household is more likely to make decision to migrate. It means that the theory of Davis on household size and migration is still a classic one when other socioeconomic factors are controlled.

## 6.2 Recommendations for policy implication

6.2.1. The findings on migration decision making clearly show that persons who have two houses or more of formal and informal kinship within a 150 meter of radius are less likely to migrate than those who have less than two nearby houses within 150 radius by around 45 percent for all strata. This finding reveals vividly the social ties in Thai community. Having houses nearby reflects not only the warmth people get from living together among kin and non-kin, but also leads us to assume that land utilized for agricultural factor is fertile enough for people so that they do not want to migrate out. Then, policy implementation might pay significant attention to the role of the community as people in community tend to be the caregivers for those who are left behind when one migrates out. The proper performance of the people in community will ease the problem for both migrants and the left behind.

6.2.2 Findings on the aspect of migration duration determine that the main thing was that migrants having at least two houses located within 150 meter diameter appear to migrate for shorter periods or less than one year on average for nearly all strata. With analysis on adjusted probability it appears that in every stratum, on average 70% of migrants migrated for less than one year when there were at least two houses located nearby. It means that the higher density of houses leads migrants migrating for shorter periods. This finding confirms the main role of social ties again as it can be a smart way to keep people in the hometown. It means that the social ties are one influential factor which can lead to migration reduction if applied properly with other influential policies for decentralization.

6.2.3 The findings on elderly's living arrangement shows one interesting point - that the higher number of migrants in households directly affects the elderly's likelihood of living with other and grandchildren making it around 0.6 to 1 times more likely. At the same time, the findings on children's living arrangement shows the same thing as a higher number of migrants means there is around 1-3 times more chance for a child to live with grandparents over only father/mother depending on the stratum. The reasonable explanation for this point might be in accordance with the age of migrants as the older age migrants are those who migrate for jobs, not for study. These migrants are married and already have children so they normally seek better chances for their family and migration is one smart way for them. Thus, it means that higher numbers of migrants create more problems for those who are left behind and intergenerational living between the elderly and the child who are dependent persons. As found from the migration trend in KDSS which points out that the number of migrants has gradually increased, it can be imagined that in the near future, intergenerational living between the old and the young will rise. Thus, policy makers should pay more serious attention to this type of living arrangement while the role of community should be promoted more in order to ease the burden for those who are vulnerable and left behind.

## 6.3 Recommendations for further study

6.3.1 Finding on relationship between EL and elderly's living arrangement is very clear in all strata that having two houses and more in 150 meters of radius leads more chance for an elderly to live with others than living with their grandchildren. On contrary, for a case of children's living arrangement, only in urban and mixed economy strata in which children tend to live with others when there are two houses and more located adjacent. While for other strata, living with grandparents is coming first. Even though these patterns happening in Kanchanaburi area show the strong influence of community on taking care those who are left behind, especially the elderly, but they are quite different from the context happening in northeast and north region where intergeneration living is normally found. Thus, reinvestigation is strongly needed in other provinces in central area in order to find the real context already happening to reflect the labor force age migration situation in Thailand.

6.3.2 Due to the GIS device limitation, some houses can not be counted since they are located very close to each other and then the device can count them to be "one" spot or one house. Overcoming for this limitation is needed in further study in order to generate the more valid research on the existential locality.

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