THE EFFECT OF INITIAL MIGRATION ON SUBSEQUENT MIGRATION: EVIDENCE FROM KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM, THAILAND

KHAING KHAING SOE

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
(DEMOGRAPHY)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2009

Thesis
Entitled

THE EFFECT OF INITIAL MIGRATION ON SUBSEQUENT MIGRATION: EVIDENCE FROM KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM, THAILAND

.....

Ms. Khaing Khaing Soe
Candidate

.....

Assoc. Prof. Sureeporn Punpuing, Ph.D.
Major-Advisor

.....

Prof. Aphichat Chamratrithirong, Ph.D.
Co-Advisor

.....

Assoc. Prof. Philip Guest, Ph.D.
Co-Advisor

.....

Prof. Banchong Mahaisavariya, M.D.
Dean
Faculty of Graduate Studies
Mahidol University

.....

Assoc. Prof. Kusol Soonthorndhada, Ph.D.
Chair
Doctor of Philosophy Programme
in Demography
Institute for Population and Social Research
Mahidol University

Thesis
Entitled

THE EFFECT OF INITIAL MIGRATION ON SUBSEQUENT MIGRATION: EVIDENCE FROM KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM, THAILAND

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Doctor of Philosophy (Demography)
on
May 12, 2009

.....
Ms. Khaing Khaing Soe
Candidate

.....
Assoc. Prof. Bencha Yoddumnern-Attig, Ph.D., Chair

.....
Prof. Aphichat Chamratrithirong, Ph.D.
Member

.....
Assoc. Prof. Sureeporn Punpuing, Ph.D.
Member

.....
Assoc. Prof. Duanpen Theerawanviwat Ph.D.
Member

.....
Assoc. Prof. Philip Guest, Ph.D.
Member

.....
Prof. Banchong Mahaisavariya, M.D.
Dean
Faculty of Graduate Studies
Mahidol University

.....
Assoc. Prof. Sureeporn Punpuing, Ph.D.
Director
Institute for Population and Social Research
Mahidol University

THE EFFECT OF INITIAL MIGRATION ON SUBSEQUENT MIGRATION: EVIDENCE FROM KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM, THAILAND

KHAING KHAING SOE 4938044 PRDE/D

Ph.D (DEMOGRAPHY)

THESIS ADVISORY COMMITTEE: SUREEPORN PUNPUING, Ph.D., APHICHAT CHAMRATRITHIRONG Ph.D., PHILIP GUEST, Ph.D

ABSTRACT

Many of the compelling results from recent migration literature highlight the role of social networks in migration, especially the effect of previous migration on subsequent migration. It is also well-known from previous research that the more accumulated migration experience there is within a family and a community, the more migration is encouraged. Social network theory posits that an initial migration increases the possibility of subsequent migration by other family members. Cumulative causation theory argues that causes of migration are cumulative in that each act of migration alters the social context within which subsequent migration decisions are taken. The objective of this research is to study the effect of initial migration on subsequent migration behaviour. The research is informed by social network and cumulative causation theories and was tested in the context of Kanchanaburi Demographic Surveillance System (KDSS) in Thailand.

In this study, 3,767 persons were identified as initial migrants and 1,206 persons were found to be subsequent migrants. Among the subsequent migrants, 32 percent followed the initial migrants to the same provinces. Of these, less than half of the subsequent migrants made a move less than one year after the initial migration from the family.

Multivariate analysis indicated that the factors most likely to predict a subsequent move through initial migration consisted of the number of male and female initial migrants, duration of initial migration, and relationship to the initial migrant. Results showed that the individual and household characteristics were important as well. The number of migrants in the village was also an important predictor for subsequent migration. It was also found that the initial migration had a significant effect on a subsequent move to the same destination as the initial migrant. As for the duration, no initial migration variables showed a significant association with the time period elapsed between initial and subsequent migration.

Generally, it can be concluded that the effect of an initial migration on a subsequent migration of a family member who is left behind can be viewed as a mutual interplay of individual, household, and community characteristics.

KEY WORDS: INTERNAL MIGRATION/ INITIAL MIGRATION/ SUBSEQUENT MIGRATION/ SOCIAL NETWORK/ KANCHANABURI

96 pages.

CONTENTS

CONTENTS (cont.)

CONTENTS (cont.)

LIST OF TABLES

LIST OF TABLES (cont.)

LIST OF FIGURES

CHAPTER I
INTRODUCTION

1.1 Background

Being one of the components of population change, migration contributes to population growth and redistribution. In and out movement contributes to population growth and redistribution both in the place of origin and destination. It can increase population growth through net-migration gains or can reduce the pressure of population growth by transferring people from one place to another. In general, migration can change population distribution much more than natural increase of population, particularly for populations of small areas. Moreover, migration can generate advantages and disadvantages to the individual, families and societies both from the origin and the destination areas.

In the process of the socioeconomic development, the importance of internal migration and urbanization cannot be separated as both play a significant role in development itself (Bilsborrow, 1998). Migration stimulates movements from places of limited opportunities to the areas where there are higher levels of opportunity (Guest, 1999) and is seen as a force that can contribute to development (UNFPA, 2004). Thus, the importance of internal migration in population redistribution and its relation to national development has been given as the focus of a long standing attention by policy makers, planners and researchers. In Thailand, relative rural poverty, better opportunity in urban areas and the rapid pace of urban modernization and expansion have caused many rural people to migrate to city areas with the hope of getting better paying jobs.

Many of the compelling results from a recent migration literature highlight the role of social networks on migration, especially repeat migration. Another literature

has established the effect of previous migration on subsequent migration. A recent migrant, contemplating another move, generally will be better informed about the moving process than before he moved initially (DaVanzo, 1983). It is also known from previous research that if there were more migration experience among family and community networks it encourages migration. Hence, this research is designed to study the effect of initial migration on subsequent migration behaviour by highlighting the utility of social network analysis. The research is informed by social network and cumulative causation theories.

1.2 Rationale of the Study

Much of the recent migration literature has identified the importance of social networks in the study of migration, particularly in international migration. However, fewer studies have been found on the role of social networks in internal migration. Social networks play a critical role in facilitating migration and are now widely recognized to be very influential in-migration decisions. It lowers risks/costs of newcomers and leads to the expansion of such networks in places of origin and destination and to more potential migration flows. Moreover, it is argued that migration among family and community networks tend to increase the likelihood of migration of other family members.

From a dynamic perspective there are a number of channels through which past migration impacts on current migration incentives. Those studies focus on the type of social network utilized by migrants in the process of migration, their characteristics and family background, how migrants offer support to those who move after them, and who can/will help migrants when financial problems emerge. However, knowledge on the experience of internal migration flows from the perspective of the sending households is relatively limited. In particular, very few studies have addressed the effect of initial migration on subsequent movement of other family members from the same households. If we can identify the impact of initial migration on subsequent move in terms of direction and destination, the volume and the flow, the pattern of movement can be more accurately modelled. In addition,

it would help to predict what migration would follow and from what households and it would be very useful in order to know what we had to plan for in terms of services that we would have to provide for them.

In addition to this, the nature of the Kanchanaburi Demographic Surveillance System (KDSS)[1] and the prevalence of out-migration in that area facilitate the present study. The five rounds of the KDSS data show a large movement of people both within and outside the study area. The in-migration rate has been reduced and the out-migration rate has increased over the study period (Table 1). According to the KDSS census reports, all strata experienced net out-migration, which was 10.2 percent in 2000-2001 and increased gradually up to 14.7 percent in 2003-2004.

Table 1.1 Percent of In and Out-migration in Kanchanaburi DSS (2000-2004)

Migration	**2000-01**	**2001-02**	**2002-03**	**2003-04**
Out-migration to other villages	10.2	11.7	12.6	14.7
In-migration from other villages	8.1	7.3	6.5	9.9
No migration	81.7	81.0	80.8	75.4
Numbers (Population)	**52,248**	**52,705**	**50,236**	**47,352**

Source: Institute of Population and Social Research (IPSR), 2000, 2001, 2002, 2003, 2004

There are many studies carried out on the various aspects of migration based on KDSS data. Any migration is likely to have a profound effect on the place of origin as well as on the place of destination. The factors influencing the decision to migrate are a subject of interest in itself. However, the study of initial migration and subsequent migration has never become the subject of serious study. This does not mean that there was no study carried out in this field, but suffice to say that the literature on the subject is very limited, especially the effect of initial migration on

[1] "*The data upon which this analysis is based was collected by the Institute for Population and Social Research, Mahidol University as part of the Kanchanaburi Demographic Surveillance System, which is funded primarily by the Wellcome Trust, United Kingdom*".

subsequent migration. This study attempts to mitigate this dearth of literature by focusing on the effects of initial migration on the subsequent moves of family members remaining in the origin. While differentials in socio-economic characteristics of the subsequent migrants and the factors associated with initial migrants encouraging the subsequent migration shall be the main focus of the study, other related aspects within the framework of objectives shall also be covered.

1.3 Migration in Thailand

It has long been documented that migration has been associated with industrialization and economic development. However, it was argued in one study that the migration to the cities of Third World countries come from the rapid population growth and economic stagnation in rural areas rather than the economic growth or development (Goldscheider, 1987). In the case of Thailand, the rate of migration started to increase in parallel with the development of the country (Guest, 1999). As there are high levels of internal movement of population in Thailand, knowledge of the extent and selectivity of migration in Thailand has become an important policy concern (Guest et al., 1994).

Thailand has experienced rapid economic growth for a number of decades and it is said to be the best example in the region illustrating the linkages between social and economic development and international migration. Thailand has benefited from the export of agricultural and manufactured products, gems, jewellery and tourism (IOM, 2008).

In Thailand, the level of migration has been rising for at least fifty years. Between 1960 and 1970, the total population increased by 31 percent and the number of recent migrants by 125 percent indicating that overall migration in Thailand was rapidly increasing (Arnold & Piampiti, 1984). After 1990, overall migration level decreased, 8 percent in 1990 to 6.2 percent in 2000 (Suwee, 2002). It might be due to

the financial crisis which erupted in Thailand in 1997 and which still has an impact in 2000.

The first detailed data on migration in Thailand became available from the population census of 1960. Rural-rural migration has been the main migration stream over the last three decades. However, the decrease in rural-rural migration has been compensated by increases in rural-urban and urban-rural migration (NSO, 1993). The 1990 census found that over 18 percent of all recent migrants in 1985-1990 moved from rural to urban areas, while 12.6 percent moved from urban to rural areas (Chamratritirong et al., 1995). The main reason for the decline of rural- rural migration was the lack of sufficient land (Goldstein and Goldstein, 1986). Rural-urban migration has increased from 18.4 percent to 25.7 percent in the period 1990 to 2000. This is due to the changing of the definition of "urban" in Thailand in 1999 when 981 sanitary districts has been classified as "urban" area. The 2000 census operated after the economic crisis year. Therefore, there was more migrant move from rural to urban in the census year (Suwee, 2002).

In line with the findings in many countries, migrants in Thailand are primarily concentrated at the young adult ages. Migration peaks at age 20-24 for both men and women but this peak largely reflects a single move migration pattern. Among the younger age group 15-19, females tend to migrate at a higher rate than males and the authors suggest that this likely reflects higher educational attainment for boys, but may also mean that girls are more likely to migrate for wage labour at these ages while boys remain on the family farm. In terms of marital status, single persons are more likely than married to have migrated. An increase in the level of education increases the likelihood of migration (Chamratritirong et al., 1995).

One of the salient features of internal migration in Thailand is the increasing participation of women in population mobility. Drawn by growing economic opportunities in urban areas, more and more women are participating in-migration streams (Osaki, 1999). According to ‘The Survey of Migration in Bangkok Metropolis’, it was found that the typical migrant was a young, unmarried male or

female from a village in the northeast who moves to Bangkok (Arnold and Piampiti, 1984). This phenomenon is more pronounced for females than for males and is more evident in rural to urban migration streams (Guest, 2003).

Guest (2003) explained that the factor increasing the rural-urban migration in Thailand has been the expansion of educational opportunities in rural areas. Conventional wisdom would construe that these opportunities might decrease the level of migration for education. However, he argued that the increased levels of education of the rural population typically have occurred without expansion of non-agricultural employment opportunities. This has led to an increased movement of the young from rural areas in search of urban employment. On the other hand, the accessibility of informal education in the urban areas encourages the young people to work and then to study part time when and where there is an opportunity.

Another common form of migration is temporary migration. According to the Thailand National Migration Survey (1995), almost one third of all migrants were temporary migrants. In general, men are more likely than women to be involved in temporary forms of movement and to circulate between urban and rural areas. On the other hand, women are more likely than men to take up a relatively permanent employment in urban areas because of the spatial distribution of employment opportunities (Chamratritirong et al., 1995).

According to the Osaki (1999), one of the salient features of internal migration in Thailand is the increasing participation of women in population mobility. More and more women are participating in-migration streams as there are more economic opportunities in urban areas. The author speculated that migration might have functioned as a survival strategy of many Thai households, particularly in the Northeast because the flow of money and goods into migrant-sending households form large and essential supplements for the livelihood of the households (Osaki, 1999). However, this finding may be different in Kanchanaburi context. Thus, it is important to understand the geographic and demographic characteristics of the study area as well as its social, economic and cultural background.

1.4 Migration in Kanchanaburi DSS

The five years longitudinal study of the Kanchanaburi DSS shows large levels of movement of people, both within and outside the province. According to the Kanchanaburi DSS which stratified study area into urban/semi urban, rice field, plantation, mixed economy and upland, the highest levels of net out- migration were recorded for the mixed economy and plantation strata. Both the in-migration and out-migration rates were the highest in the upland stratum. The urban/semi-urban area had the high in-migration rate in all round of censuses and this suggests that the urban/semi-urban stratum remains an attractive place for in-migrants. It was an important destination of those who seek non-agricultural work as well as higher education. The level of male out-migration was higher than that of female out-migration in every stratum. Most young migrants move for employment and/or education reasons. The concentration of migrants at young adult age is more pronounced among out-migrants than in-migrants (IPSR, 2006).

In the study area, both in-migration and out-migration was mainly short distance migration, particularly within Kanchanaburi province, and between Kanchanaburi and other provinces in the Central Region and Bangkok. Migration between Kanchanaburi province and the Northeast, North and South regions seems mainly to be a result of immigration and out-migration (probably return migration) of migrant workers. Hence, it provides suitable data for demographic research and it is expected that the pattern and probability of subsequent migration will be influenced by migration characteristics in Kanchanaburi context.

1.5 Research Question

How is the initial migration in a family related to the subsequent move of other family members from the same household?

1.6 Objectives

1. To study the pattern of initial migration and subsequent migration in KDSS area
2. To examine to what extent initial migration in a family is related to the subsequent move of other family members from the same household
3. To explore the pattern of subsequent migration in terms of destination and duration

In chapter II, relevant literature is reviewed followed by a conceptual framework and hypotheses for the study. The source of data, the research design, study area and population, sample size and method of analysis, operation definitions of variables and limitation of the present study are discussed in the research methodology chapter. Chapter IV illustrates the descriptive analysis of the pattern of initial migration and subsequent migration. In Chapter V, the effect of initial migration on subsequent migration is presented. Finally, all the findings are summarized and discussed in the conclusion and recommendation chapter.

CHAPTER II
LITERATURE REVIEW

In this section, selected literature relevant to the current study is reviewed. The review begins with theoretical frameworks on social networks and migration. Then, a discussion on related empirical evidence as regards social networks and migration decision will be provided. This will be followed by a focus on studies which examine selected factors affecting migration. Finally, a conceptual framework and hypothesis will be drawn based on world literature in general and Thai literature in particular.

2.1 Theoretical Framework Relating Social Networks to Migration

"The Laws of Migration" formulated by Ravenstein in 1885 and revised in 1889 became the first well known theory in the field of migration. Subsequently, there were numerous theories and typologies, explanatory models and conceptual and analytical frameworks which explain particular conditions. However, there is not a single theory or a law that completely generalizes migration.

For the framework of the present study, two major approaches are used as a theoretical structure. The first one is "Social Network Theory" which focuses on the links between migrants and their friends/family that initiate migration movements (Hugo, 1981). Massey defines migrant's social networks as *"sets of interpersonal ties that link migrants, former migrants, and non-migrants in origin and destination areas through the bonds of kinship, friendship and shared community origin"* (Massey et al. 1998:42). This definition is based on international migration; however, it is also applicable to internal migration. This definition is based on international migration; however, it is also applicable to internal migration.

In addition, the link between migration and network was explained as "*Migration may begin for a variety of reasons, but once the number of migrants reaches a certain level, expanding networks cause the costs of movement to fall and the probability of migration to rise; these trends feed off one another, and over time migration spreads outward to encompass all segments of a society. This feedback occurs because the networks are created by the act of migration itself*" (Massey, 1990: p, 8).

Massey (1990) also states that social networks have played a crucial role for the establishment of the migration process. Kinship ties, friendship and shared community origins will increase migration flows. With the use of social capital the costs and risks associated with the act of migrating are reduced, i.e., with access to safe transportation, housing, employment, and social interaction, the probability of migrating is increased. Furthermore, the social network also helps migrants with moral support and valuable suggestions. It means social networks can reduce migrants' expenditures directly. It not only provides access to various kinds of mutual aid and assistance but also support and reliable information.

Elrick's (2005), "Social Network Theory" highlights the importance of networks in international migration. Once established, networks can lead to so-called chain migration and thus stimulate and perpetuate the migration process. The network approach focuses on the rational actor who takes into consideration the existence of networks. It also addresses the cumulative causation of migrants as a result of reduced social, economic, and emotional costs of migration pursuant to the formation of migration (Elrick, 2005).

The network theory also emphasizes that social networks are a form of social capital.[1] When sufficient numbers of migrants with a common social identity arrive in an area they may constitute a network that can then offer aid to new arrivals. Similar

[1] **Social capital** is a concept developed in sociology and also used in business, economics, organizational behaviour, political science, public health and natural resources management that refers to connections within and between social networks as well as connections among individuals.

to some economic models of migration, the social capital theorists assume that individuals will instrumentally use their networks as a means of gaining the highest returns on their investments in human capital. Additionally, social capital theory assumes that access to social connections, in the form of migrant networks, reduces the cost of movement and favors the act of migration to places where there exists a social tie (Massey and Palloni, 1992). Hence, social network not only play an important role in helping migrants with both material and moral support but also helps migrants to adjust themselves to be in line with new conditions or culture and tradition at the place of destination.

A review and appraisal of international migration theories by Massey et al., (1993) is also very useful in understanding the role of social networks in the migration process. Though their review is for international migration, many points in the review are also applicable for internal migration. Once someone has migrated, he or she is very likely to migrate again, and the odds of taking an additional trip rise with the number of trips already taken. Most migrants will choose to migrate to the place where they have had experience. Migration experience is not only important for the migrant himself, but is also important for the whole family and influences the decision making of other family members. Women, who mostly have little education, are faced with more social constraints than men and they have to depend on relatives or friends in getting assistance to find out about the place of destination. This helps lessen the resistance of women in the family against migration from the place of origin (United Nations (UN), 1993).

The second approach reviewed here is the "Cumulative Causation Theory" introduced by Myrdal (1957). Any migration has many different causes. Migration itself enhances more additional movement over time which is called cumulative causation. Migrants make choices based on their personal characteristics, preferences, and the constraints imposed by the immediate socioeconomic environment; but over time these decisions feedback on structures within the environment (i.e., social networks) to change them in ways that encourage further migration, inducing others

to migrate, whose departure, in turn, affects structural conditions further, resulting in a complex process of "circular and cumulative causation" (Myrdal, 1957).

Cumulative causation theory holds that, at the individual level, "*Causation is cumulative in the sense that each act of migration alters the social context within which subsequent migration decisions are made, typically in ways that make additional movement more likely*" (Massey et al., 1998, p. 45-46). Through migration, individuals also gather valuable information on how to arrive, get around and find work, thereby reducing the costs and risks of movement (Massey et al., 1993 and 1994). Cumulative causation theory does not solely focus on micro or macro-level variables, but includes both economic variables and the social and cultural context in which a migration decision is made. Moreover, this theory is one of the few which explain the perpetuation of international migration by scrutinizing how the individual migration changes the values, norms and expectations of the sending society (Elrick, 2005).

The core of the "Cumulative Causation Theory" is the influence of culture on migration and vice-versa. *Getting in touch with a different society and a highly diversified labour market leads migrants to migrate again in order to attain and maintain the level of prosperity they have reached. This led not only to repeated migration, but motivates the non-migrants to migrate as well.* Thus, over time migration not only changes the attitudes of the individual, but also influences community values and expectations (Elrick, 2005). Though this theory is generally based on international migration, it is also applicable to internal migration.

The background theories used in this study are similar in both ways by paying attention to the social environment within which a migration decision is made and explaining the difficulties of controlling the migratory flows through policy measures. However, there are also differences: social network theory focuses on the effects of networks and the cumulative causation theory takes this as only one factor in the migration decision-making process. Furthermore, the social network theory could not properly explain the creation of migration, but only its perpetuation. The creation as

well as the vanishing of migration is explained in the framework of "Cumulative Causation" (Elrick, 2005).

There are many hypothesis formulated by different researchers regarding how social networks influence the international migration decision making process. Many of these hypotheses are brought together in Elrick's (2005) work and some of them are relevant to this study:

- The facilitating hypothesis states that social networks can facilitate migration because social contracts based in these networks provide support (Ritchey, 1976)
- The encouraging hypothesis states that family members are encouraged by the family to migrate for a certain period of time, for example as a risk reducing strategy to secure the household income (Hugo, 1981)
- With regards to the value of information within the migration decision process, family relationships have an enduring impact on migration. Policies, rules and even norms may change, but obligations among family members are of an abiding nature (Fawcett, 1989)
- Within households the probability of migration rises if a family member already has migration experience (Massey et al., 1993).
- At the community level, people should be more likely to migrate if they come from a community where many people have migrated or a wide knowledge on migration is available (Massey et al., 1993).

Many of these hypotheses above are based on the review of international migration theories. Previous work (Taylor, 1986) has suggested that cumulative causation will be less meaningful for internal migration processes (cited in Curran et al., 2005). He found that the presence of immediate kin of the household head in another Mexican state was only weakly associated with the odds of internal migration of other households members. Similarly, Curran and Rivero-Fuentes (2003) found that migrant networks are more important for international moves than for internal moves in the Mexico context. This study was thus undertaken to investigate, analyze

and assess whether social network and cumulative causation theory can be applied equally to internal migration in the context of Kanchanaburi DSS, in Thailand

2.2 Measurement of Social Network on Migration

To study the effect of social networks, it is crucial to take the measurement of social network into account. Different definitions will have different aspects and the results diverse based on the definitions. Social networks are measured by the extent of linguistic concentration in the area where the immigrant resides (Chiswick and Miller, 1996 cited in Amuedo-Dorantes and Mundra, 2005). Datcher (1983) captures the existence of social networks with three variables, namely whether the immigrant knew anybody in his/her current workplace before accepting the job, whether he/she heard about the job from this person (or contact) and how much influence this person (or contact) had in the immigrant's decision to accept the job (Datcher, 1983 cited in Amuedo-Dorantes and Mundra, 2005). Amuedo-Dorantes and Mundra (2005) measured strong ties by the number of the immigrant's household members from Mexico residing in the U.S and weak ties are defined as the number of more distant relatives and friends living in the U.S.

One of the most influential definitions of social networks is provided by Granovetter (1995) who distinguishes between strong and weak ties. In particular, he asserts that close friends and family provide strong ties, whereas acquaintances constitute weak ties (cited in Amuedo-Dorantes and Mundra, 2005). Generally, those who have strong ties in the destination area will be more likely to move there compared to those with fewer ties. However, there are also some arguments against that weak ties constituted by acquaintances are more effective than strong ties with close friends in part due to the fact that acquaintances move in social circles distinct from those of their close friends (Amuedo-Dorantes and Mundra, 2005).

For support to the migrants at the place of destination, several researchers confirmed that the migrants get support from various sources e.g. relatives, brothers and sisters, friends and people they know at the place of destination (Soldo et al.,

1986; Wellman and Wortley, 1990). However, the level of support depends on the type of relationship. Soldo and colleagues (1986) found that brothers and sisters from the same parents are the first to help and respond to their need, especially in time of sickness and also act as mental benefactors. Wellman and Wortley (1990) studied types of support by comparing persons with three levels of relationship, that is, brothers and sisters from the same family, relatives and friends. They found that the same family will provide the most support, both in terms of mental and material support, such as protection and financial support. The degree of support reduces when it spreads out to relatives. At the friend level, most of the support goes to finding of jobs and help during the migration. However, Wellman and Wortley (1990) found that a person without family can also develop relationships with his friends until he can get help and their relationship is like the one with family.

2.3 Social Network and Migration Decision

Much of the early research proved that there are many factors influencing the decision to migrate, of which some are non-economic factors and some are economic. For instance, non-economic factors are the social, physical, demographic, cultural and communication factors. There are also some economic factors such as the push factor from stagnating subsistence agriculture and the pull factor of relatively high urban wages, and the potential push-back of high urban unemployment (Curran and Saguy, 2001). The decision of Mexican male household heads to work in the USA is influenced mostly by the impact of previous migration experience, family network and prevalence of migration in the origin community, reflecting the effect of these variables on cost and benefits of US labour market entry (Delechat, 2001).

There is ample literature which shows the effect of social networks on migration and empirical results which strongly support the implications of cumulative causation and social network theories. In a study of Puerto Rican and Dominican migrants, it is found that having access to social networks, along with the size and composition of those networks are key factors influencing the decision to migrate and destination selection. Friends and family who have been to the United States can

provide critical information about how to get there (especially if one lacks proper documentation), a place to stay and information about job opportunities, and can help to ease the newcomer's transition to life in the host society (Rochford , 2006).

The size and composition of one's social network may influence different decisions; those with "strong" ties of close family members may have more information or social capital that is already known to the potential migrant, while those with "weaker" ties may have access to a broader range of opportunities. Espinosa and Massey (1999) also argue that it is not just the number of ties that a migrant has but it is also the closeness of those ties that help to predict migration decisions. One study shows that a husband's migration leads to the subsequent wife's migration. Most of the women felt sad and lonely after their husbands' migration, and that led to their own decisions to migrate (Hondagneu-Sotelo, 1992 cited in Silver, 2006). As a result, social networks effects should hold for connections with both family and friends (Rochford, 2006).

Individual migration decisions mostly depend on the context of social networks, a neoclassical model of cost benefit analyses, wage differentials and the psychological costs of migrating (Todaro, 1980; Massey et al., 1993). However, many critics argue that households or families are the principal agents of decision-making (Massey, 1990). McKenzie and Rapoport (2006) found that household resources and migration networks interact in determining migration propensities. In particular, among households with low networks, a marginal increase in the network size increases the likelihood of migrating more for wealthier households, whereas poorer households benefit more from a marginal increase in network size once network size becomes larger. This finding illustrates the likely effects of increasing number of migrants from same household on the subsequent move of other household members from that household (McKenzie and Rapoport, 2006).

"Cumulative Causation Theory" emphasizes the role of prior movement in additional migration propensity. A study shows that previous migration experience and migration related variables are the strongest predictors of current migration

decision (Delechat, 2001). Curran et al. (2005) also show that a migrant's social capital is still important even after controlling for migrant prevalence rates. For all of their analyses, an individual's prior experience is an important determinant of migration, whether it is times of the experience or number of trips. Furthermore, Reed et al., (2005) found that the average time to a move decreases with each subsequent move and once a person has made an initial inter-regional move, the perceived costs of moving again decrease. In addition, the previous movers were significantly more likely to move and it suggests that previous mobility reduces the perceived cost of moving for a second or higher order move.

Some empirical evidences (Kuhn, 2005; Curran et al., 2005; Fuller et al., 1985; Coniglio and Prota, 2003) show that relationships exist between an individual's prior experience and the pattern of migration. Migrant stock (accumulated migration experience) and social networks are strong predictors of the hazard of migration, particularly of rural-urban migration (Kuhn, 2005). Curran et al. (2005) found that cumulative causation is important for explaining rural-urban migration in the Thai context. However, their study was based on the northeastern region which is the poorest region in Thailand. It may not be the case for Kanchanaburi Province. In the KDSS area, many people may migrate for a better quality of life because the economic status in Kanchanaburi where there is much more natural resources is good. It can be expected that migrants from the KDSS area are better off people compared with migrants from Nang Rong.

Similarly, Fuller et al., (1985) in a study of migration from the northeast confirmed that a villager's previous history of movement is a key factor affecting subsequent movement and the entire decision-making process. The primary effect of having friends and relatives in a particular urban center is to increase the amount of information a villager has about that urban center.

The destination choice provides critical insight about migration patterns and migrant experiences. Past mobility patterns are likely to influence present and future levels and directions of movement (Fuller et al, 1985). Migrants carefully select their

destination choice to ease their transition and to provide them with the best advantages in the host society. The actual destination choice imparts a piece of information, but it is also essential on a macro scale to know how and why migrants make similar (or different) location selections (Rochford, 2006). In the Thai context, migrants in Bangkok often find employment and lodging near or with relatives. By providing channels for information transmission and mechanisms for sponsorship, social contacts at a destination facilitate movement to that place (Rabibhadana (1975), cited in Fuller et al., 1985).

Sawangdee (1995) found that the migrants' social network influences the decision making process and decisions made for the selection of places have been made beforehand because of their family circles or social connections at the target destination. The migrants will consider the place where their relatives are living and where they feel confident that they will certainly get help from the social network if they really want to move there (Sawangdee,1997).

In terms of duration, temporary migration is one of the common forms of migration in Thailand. According to the National Migration Survey (1995), almost one third of all migrants were temporary migrants. In general, men are more likely than women to be involved in temporary forms of movement and to circulate between urban and rural areas. On the other hand, women are more likely than men to take up relatively permanent employment in urban areas because of the spatial distribution of employment opportunities (Chamratritirong et al., 1995).

Regarding the effect of social network on migration duration, Tangchonlatip (2005) found that migrant networks influence the propensity to be long-term migrants. The increase in the number of working age female migrants in a household enhanced the probability of being long-term migrants for both sexes. The possible reason for that finding was that strong ties of female migrants to their origin household could facilitate the migration of both men and women to migrate over a long period of time. Similarly, Curran et al., (2005) shows even as villages approach saturation with regard

to migration, additional trips or months of experience are important determinants of migrant behavior.

The effect of social network on the probability of migration may be different for men and women because the costs, risks and benefits of migration differ by gender (Curran and Rivero-Fuentes, 2003). In the study of women and men's first migration, it is found that family networks matter more for women's first move than for men's (Kanaiaupuni, 2000). Similarly, the extent of impact also depends on whether the network is male based or female based. In the case of Thailand, it is confirmed by Curran et al. (2005) that the longer women spend as migrants the more helpful they can be to future migrants. It may be because female migrants may be more likely to maintain ties to their places of origin (Curran and Saguy 2001). This is not true for the male-based migrant social capital. The longer men are away from natal households the weaker their ties and the lower the quality of migrant social capital transmitted through them (Curran et al., 2005).

According to Massey et al. (1993), the growth of migration within a community changes values and cultural perceptions and can lead to increases in the probability of future migration. Mckenzie and Rapoport (2006) also found that the overall impact of migration is to reduce inequality across communities with relatively high levels of past migration.

Migration networks not only provide security but also opportunity. It is assumed that migrant networks make available information and auspices that enhance the job seeking process. Hence, the role of families and friends in destination communities is very important in obtaining housing and providing economic and psychological support. Many studies show that social networks have a positive effect on employment and in earning wages. Jackson and Calvo-Armengol (2002) show that an improvement in the employment status of either a migrant's direct or indirect contacts and increase in the network contacts leads to an increase in the migrant's employment probability and expected wages. Munshi (2003) also found a higher

likelihood of holding a higher paying non-agriculture job among migrants with larger networks.

Using information on the number of relatives and friends currently living in the U.S. for respondents in the Mexican Migration Project, Mouw (2004) is of the view that migrant workers' "network social capital" is associated with higher wages. In the study of Employment and Earning of Mexican Immigrants, Amuedo-Dorantes and Mundra (2005) found that social networks, particularly strong ties, contribute to the economic assimilation of immigrants by raising their hourly wages. However, authors argued that networks do not enhance immigrants' employability because strong ties (close family members) provide only shelter against temporary unemployment.

From the theoretical and empirical treatises in the field of migration, it is clearly indicated that, in general, the migrants' social network is viewed usefully in terms of helping them to be in line with new conditions. However, it is worthwhile highlighting that sometimes the migrants' social network is quite complicated because of the differences in social structure as well as the migrants' personality. The social network may or may not facilitate migrants to be able to adjust themselves with the new environment satisfactorily. It may depend on the type of network and relationship to the member of network. By contrast, the social network may create problems and take more advantages from the migrants instead. Guzman et al., (2004) suggest that the importance of networks to the migration process may vary over time.

Additionally, the study by Curran et al., (2005) indicates that cumulative causation may not always happen and may depend on the sex composition of prior migrants. The female cumulative migration experience in the household and community significantly affects the propensity to migrate for male migrants more than for female migrants. Besides, cumulative migrant experience of male household members seems to affect only male migration. They suspect that it is because women tend to maintain ties with their origin household and men do not. Then female migrants can enhance the quality of their networks as they develop contacts and

resources in places of destination. In contrast, Khunpukdee (1999) found that when there are females within the household with previous migration experience, the probability of a female migrating increase, but there was no effect on males (Khunpukdee, 1999 cited in Tangchonlatip, 2005).

From the theoretical and empirical findings mentioned above, it can be said that there are many positive effects of social networks on subsequent migration behaviour. However, some negative points are also there. It may all depend on the context of the study population, situation, closeness of ties, migration experience and status of migrants. Apart from social network variables, there are many other important factors which affect migration decision, including selectivity. Some of the selectivity factors which are relevant to the present study will be reviewed in the following section.

2.4 Selectivity factors of Migration

2.4.1 Demographic Characteristics

In the field of migration, demographic characteristics such as age, gender and marital status are important correlates of migration decision making. It is widely accepted that migration is a selective process. According to Ravenstein (1885) and Lee (1966), migration is age and sex selective and 'not a random sample of the population at origin.' Studies have confirmed that age has a clear differentiating effect on the likelihood of moving. Migrants tend to be disproportionately young, better educated, less risk averse, and more achievement oriented and to have better personal contacts in destination areas than the general population in the region of out-migration.

Migration is often seen as an event that is primarily undertaken by males. However, women also migrate in response to opportunities and constraints. According to the IOM (2005), there were 185-192 million migrants worldwide and 49 percent of them are females who migrate for economic reasons. In consonance with the above

report, internal migration in Japan, the Philippines and Thailand are strongly female oriented and so also are the flows in the Republic of Korea and Indonesia. However, internal migration in South Asian countries is still predominantly male, though female participation is increasing (UN, 2003). In the case of Thailand, males had a higher possibility of migrating than female migrants; however females are more likely to migrate than males at earlier ages (Guest, 2003; Ritcher et al., 1997; Chamratritirong et al., 1995). Moreover, women's participation in rural-urban migrant streams is considerable, reaching as high as 60 percent of all migrants and they move primarily for employment (Chamratrithirong et al., 1995).

Marital status is one of the characteristics conventionally accepted as closely associated with the propensity to migrate. Earlier studies of internal migration consistently found that married men (many accompanied by their families) and single women were most prevalent in Latin American migration patterns (Todaro 1976). In contrast, other studies have found that young and unmarried people are more likely to migrate than those who are not. A study among Mexican women who migrate to the United States found that marriage had a negative effect on migration. Migration more often signifies family separation than reunification among married couples and significantly higher migration risks for single and previously married women than currently married women (Kanaiaupuni, 2000). Once people get married, marital responsibilities tie them to a more sedentary life. Hence, it becomes an obstacle to migration prospects.

Educational attainment is among the important factors that affect migration. Education leads to increased mobility and access to opportunities. Migration rates generally increase with levels of education. Schooling increases the propensity to migrate and highly educated workers are much more likely than others to migrate frequently and for longer distances (Waggoner, 2004) since more jobs are open to more highly educated persons. Migrants with increased human capital in the form of education are more likely to have had better opportunities in their home country, are better connected to find a more lucrative and/or prestigious job, and are not as tightly tied to having the ethnic enclave to determine their destination selection (Rochford,

2006). A higher proportion of well educated respondents made moves to urban areas, while primary school graduates are likely to have made rural-rural and urban-rural moves (Lewis, 1982; Waggoner, 2004). But there are also some contradictory evidence that suggest a positive association between high propensity of migration and low education and illiteracy.

As occupation is one of the main economic status indicators which influence migration decision, it is an important criterion to include in a migration study. Unlike other measures of human resources, occupational status presents an unclear picture. Many studies have found that unemployment and poverty are the main reasons for out-migration for seeking employment. Hence, a large proportion of migrants are from the agricultural sector. However in some studies, professionals are highly mobile. For rural-urban migration, skilled workers have a higher probability of migration to the city than farmers because of the predominance of skill oriented jobs. In Thailand, a major reason for seasonal migration is related to agricultural cycles. Often, agricultural production is not sufficient for essential household expenses and hence farmers migrate from rural villages to urban towns to seek better jobs (Chamratrithirong et al., 1995).

2.4.2 Household Characteristics

Most economists agree that the income gap between urban and rural areas is the driving force behind rural to urban migration. Household assets are a proxy indicator of household wealth and the living status of household members. Many studies show a relationship between household assets and migration. Generally, there is a lower tendency for migration if the household has better assets while poor households are more likely to migrate (Karan, 2003; Zohry, 2002).

The size of the family also affects the subsequent moves. Consumption and spending of the household will depend on the size of the household. The larger the family size, the higher the likelihood of migration (Zohry, 2002) especially subsequent migration (Silver, 2006). Large households may need to spend a lot as

well, as they may have more dependent members to look after. Sawangdee (1997) also found that household size is positively related to long term moves. He argued that the number of people in the household seems to have an effect on the availability of migration information. In Thailand, it is said that “persons residing in extended family households have a higher percentage intending to move than those living in a nuclear family” (Richter et al., 1997: p. 79).

Another important factor that correlates with migration is the dependency burden. Households with more children and elderly have more expenses, especially if the elderly have disabilities. Children, as well as non-active elderly people increase the dependency burden and therefore the pressure on the family head to seek other income generation solutions. Migration is one of these solutions (Zohry, 2002). Silver (2006) found that having dependents is a countervailing factor for the subsequent move of household members. In the case of Thailand, Richter et al. (1997) revealed that higher dependency, measured as the number of children under age five and older persons aged 50 years and above, affected migration intentions.

2.4.3 Community Characteristics

Community factors are very important in determining the pressures to migrate and supporting the norms for migration. Many factors facilitating migration are improvements in communication and transport, regional inequality, under-employment in rural areas and the growth of labour intensive industries **(**Deshingkar, 2006). In Lee's theory of migration (1966), poor social services, poor public facilities and infrastructure, and lack of job opportunities are the push factors in the place of origin causing migration. In the case of Thailand, government health and social services facilities such as hospitals, schools and road density are some of the key determinants of migration (Piriyakul, 2006).

Massey et al., (1993) suggest that individual or household migration decisions need to be placed within a local setting. It needs to incorporate multi-level analytic models and indexes of network connections within the community. Moreover

migration decisions made by families and individuals affect the social and economic structure within the community which influences, at a later stage, the decision making of other individuals and households. The changes at the community level increase the odds of subsequent movement, leading to migration's cumulative causation over time (Massey et al., 1993).

Coniglio and Prota (2003) also found a strong evidence for the importance of migrant stock from the origin region and direct knowledge of potential destinations due to previous migration experience in explaining the pattern of subsequent geographical mobility. Past migration reduces the cost of migration for other migrants by facilitating the flow of information on employment opportunities and reducing the cost of adaptation to a new environment by means of direct or indirect supports (Coniglio and Prota, 2003).

There are also some studies which show the importance of household-based migrant social capital and village-based migrant social capital in subsequent migration. Curran et al. (2005) argued that a migrant's social capital, which is measured at a household or village level, have an important influence upon migrant behavior; however household-based migrant social capital appears to have stronger positive effects than village-based migrant social capital for all individuals because stronger ties and greater degrees of trust may characterize household or family-based migrant social capital, significantly decreasing the costs of migration. In general, it can be expected that the level of migration in the community will have a considerable degree of effect on the decision to migrate.

After reviewing theories and related literature, it is feasible to construct a framework for the present study.

2.5 Conceptual Framework

Three conceptual frameworks were constructed for the three objectives of the study, based on a review of literature in general and in the context of Thailand in particular. As the present study is a longitudinal analysis from five rounds of KDSS, all the migration events of each individual within the study period can be obtained. Hence, it is possible to identify the initial migrants and subsequent migrants (subsequent move of other family members).

The first model is intended to estimate the probability of subsequent migration of family members over times by using a social network approach. For the first model, input cases were all the household members from households with at least one migrant within the study period (2000-2004). In this model, the number of male and female initial migrant, duration of initial migrant outside of their home and relationship to initial migrant are used as initial migration variables which may reflect the family network.

To be able to identify the role of social networks in determining subsequent migration behaviours, a range of multilevel variables relating to individual characteristics, household characteristics and community characteristics are also taken into account. Individual variables include age, sex, marital status, level of education and occupation. In addition to individual level variables, household level variables such as household assets, household size and dependency burden are important in migration decision process. They may interact with social network variables and affect the migration decision.

The number of migration in the village and strata is included in the analysis as different geographic and socio-economic backgrounds may have different effect on migration. It is a form of social network which may facilitate the propensity to migrate even if it might be based on weak ties rather than strong ties.

The second and third models are used to determine the migration pattern of subsequent movers which is identified by migration direction (destination) and duration between initial migration and subsequent migration. It is of importance to study the pattern of migration as it has a large effect on population distribution. In the second model, the study population was all subsequent migrants and the migration was first migration in the study period. The independent variables and control variables were the same as the first model. In the third model, the study population was all subsequent migrants and the migration was the first migration in the study period.

Figure 2.1 Model I: Effect of initial migration on the probability of subsequent migration

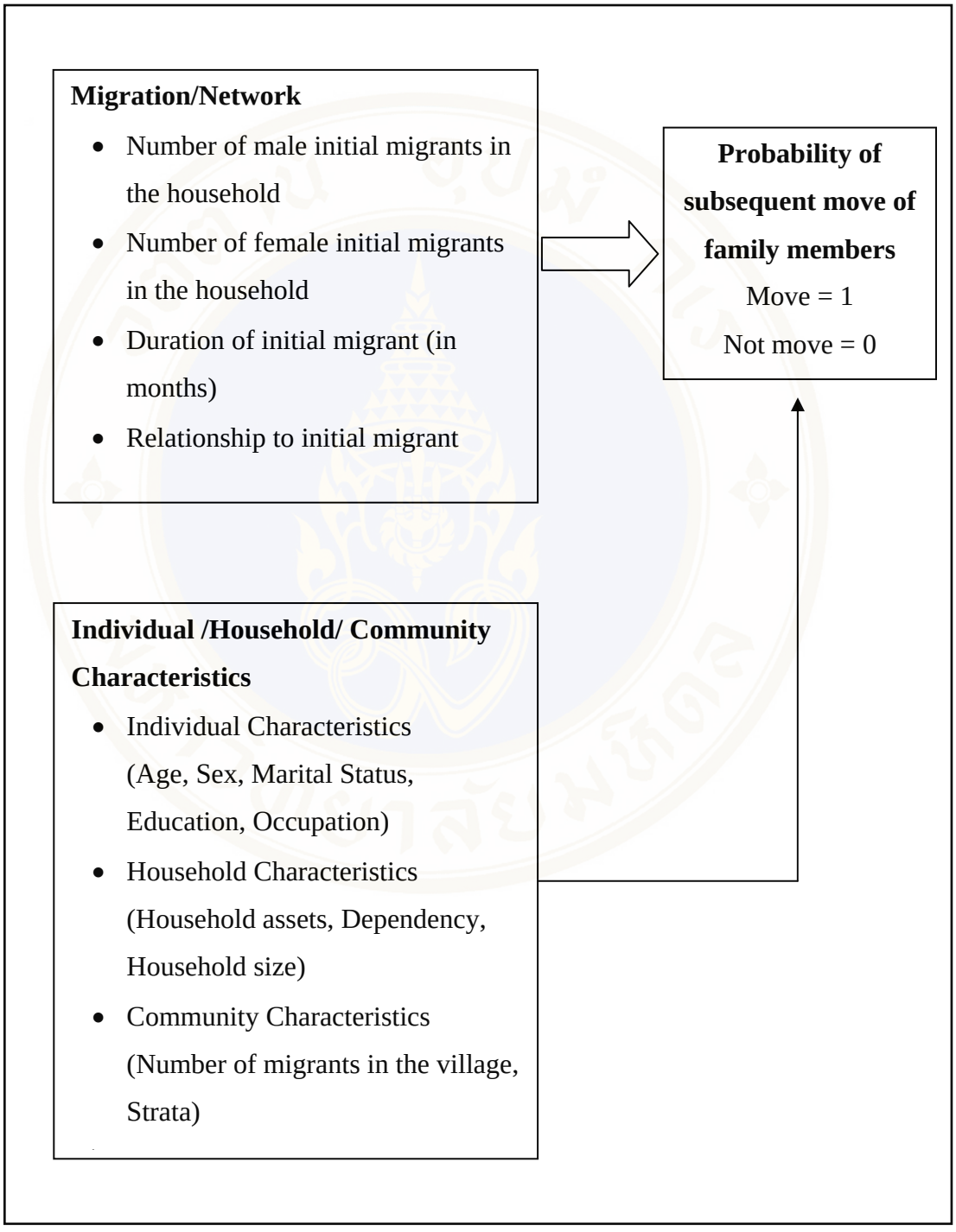


Figure 2.2 Model II: Effect of initial migration on the pattern of subsequent migration (destination)

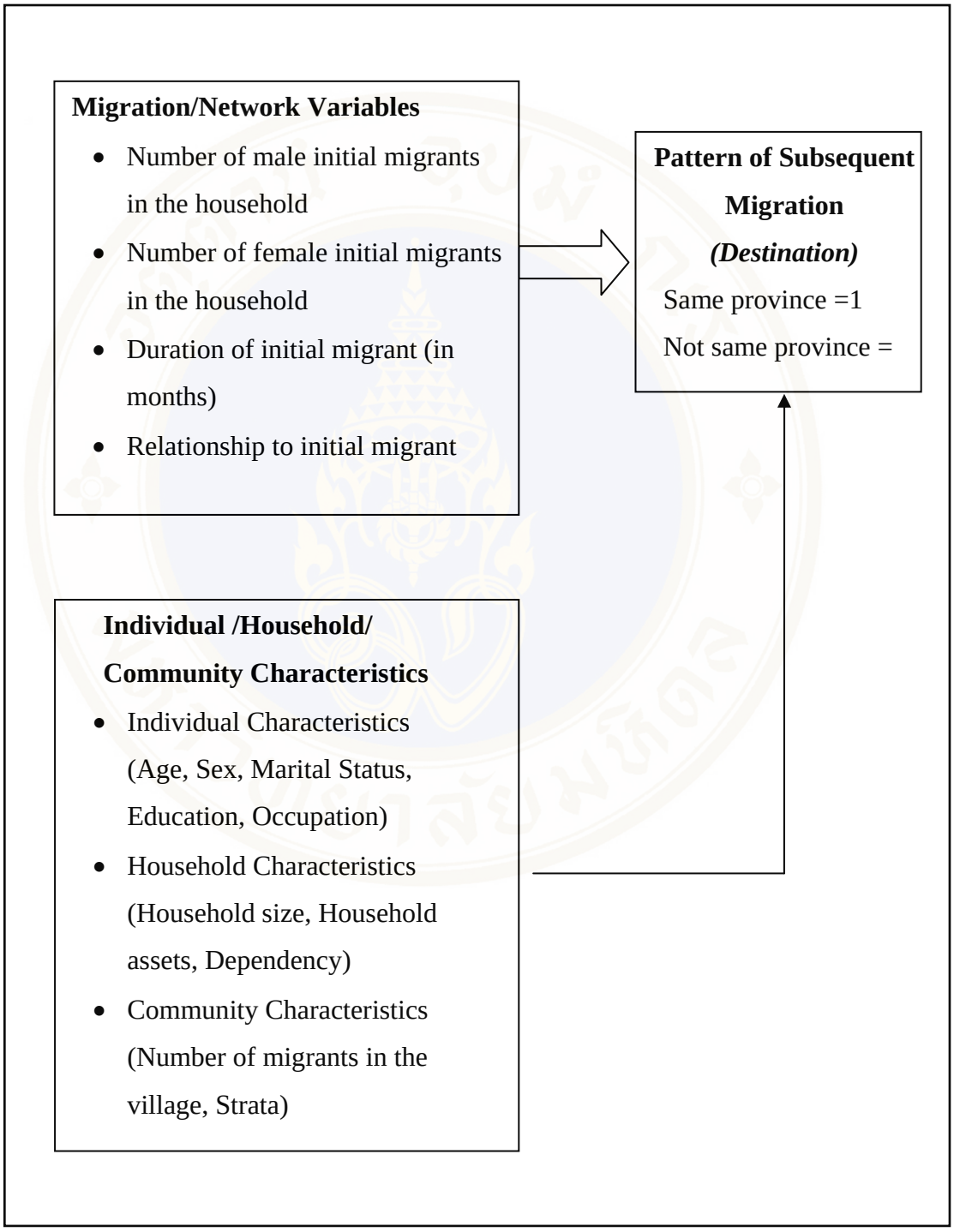
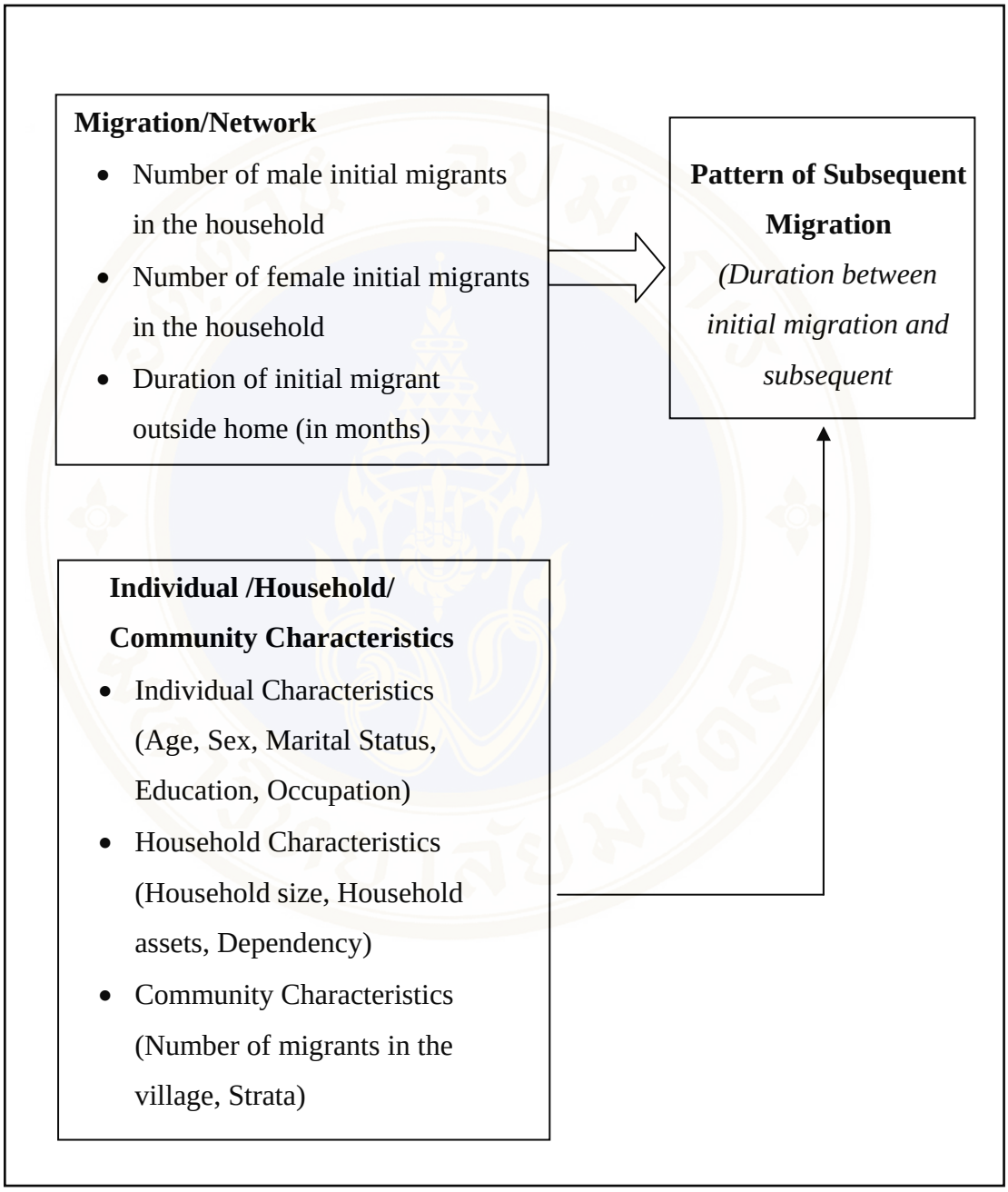


Figure 2.3 Model III: Effect of initial migration on the pattern of subsequent migration (duration)



2.6 Hypothesis

1. The larger the number of initial migrants in the household, the higher the chance of subsequent migration.
    1.1 The more male initial migrants in the household, the higher the chance of subsequent migration.
    1.2 The more female initial migrants in the household, the higher the chance of subsequent migration.
    1.3 Female initial migrants have more positive effect than male initial migrants on the odds of subsequent migration in the household
2. The longer the duration of the initial migrant outside the home, the lower the probability of subsequent migration.
3. The closer the relationship to the initial migrant, the higher the chance of subsequent migration.
4. The more female initial migrants in the household, the more subsequent migrants move to the same destination.
5. The more initial migrants in the household, the longer the duration between initial and subsequent migration.

CHAPTER III
RESEARCH METHODOLOGY

The purpose of this study is to investigate the effect of initial migration on subsequent migration behaviour of family members in the Kanchanaburi DSS area. This chapter covers eight topics; they are (1) Source of data (2) Research design (3) Sample size (4) Method of analysis, (5) Operational definitions and (6) Limitation of study.

3.1 Source of Data

The province of Kanchanaburi shares a long border with the Union of Myanmar and is located in the Western Central region of Thailand. Kanchanburi, the capital of the province, is about 129 kilometers west of Bangkok Metropolis. Kanchanaburi is Thailand's third largest province, covering an area of 19,486 square kilometers.

It is an important industrial and agricultural centre containing both urban and rural locations. Kanchanaburi province is the site of the world-famous bridge over the River Kwae, and is noted for its rugged natural beauty whose mountains and river valleys have inspired the development of hydro-electric power and where labyrinthine reservoirs provide further scenic elements to the province's natural beauty. It is also a major tourist destination, because of the many national parks located in this area.

The data for present analyses were obtained from the five rounds of Demographic Surveillance System (DSS) of the Kanchanaburi Project (2000-2004), conducted by the Institute of Population and Social Research (IPSR). Longitudinal data created from five annual census of Kanchanaburi Demographic Surveillance System (KDSS), which is rich in socio-economic characteristics of individuals and households will be used for this study. The KDSS was designed to study the population dynamics of 100 villages/census blocks distributed throughout the province. A stratified systematic sample design was used for the sampling of villages and quantitative techniques were used for all annual censuses (IPSR, 2002, 2003, 2004, 2005, 2006).

The primary sampling unit for the rural area is a village and for an urban area is a census block. The study area is divided into five strata, categorized according to the main occupation of the population and land use patterns: urban/semi-urban (industrialized), rice producing, plantations, upland areas, mixed economy. Each of those strata has its own unique characteristics, which will affect migration accordingly. For instance, the urban/semi-urban strata is the only strata with urban residents, the other four strata are rural (IPSR, 2006). The KDSS has involved annual data collection since 2000 in the same study area and the same respondents living in those areas, as well as new respondents, were re-interviewed.

The three sets of questionnaires, individual, household and community, were used in all rounds of KDSS. For the purpose of the present study, the household questionnaire was used from all rounds of surveys as the household and individual level data can be obtained from household questionnaire. The household

questionnaire provides basic information on household members, background characteristics, occupation, mobility, mortality, household characteristics, environment, and government policy. Information of household was obtained by interviewing household head.

In the first round of census, each household was listed and assigned a code. In the following rounds, the household list was updated. A household that was newly settled or separated from the old household for any reason was recorded as a "new household". A household that was interviewed in a previous round but had moved outside the village was recorded as "moved out all household". In such cases, the cited household cannot be follow up in subsequent rounds (IPSR, 2006).

3.2 Research Design

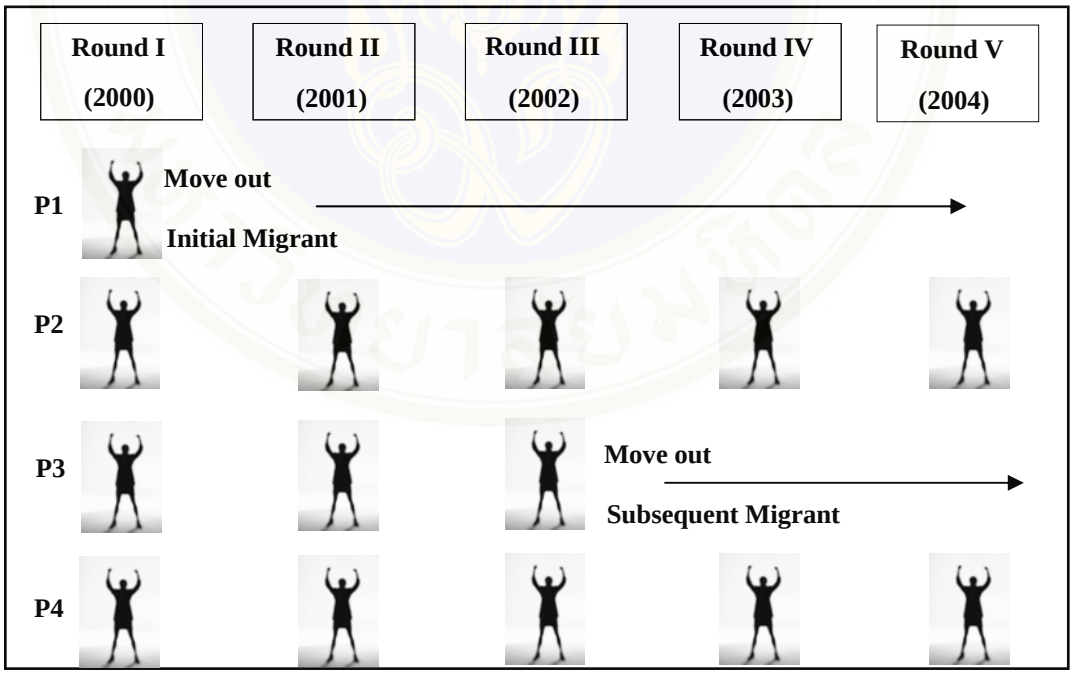
The present study was designed based on the available migration data from five years longitudinal data of KDSS (2000-2004) to estimate the effect of initial migration on the probability of subsequent migration of other family members. The use of migration history data is relatively rare in developing countries. As KDSS have five years of migration history data, it is advantageous to study this kind of research. To achieve the aims of the study, a longitudinal dataset (person oriented dataset-3,595 households with 15,564 cases) was created by merging the data from five cross-sectional years of KDSS household dataset. In fact, more detailed information is available from the migration history of individual questionnaire. However, information from the individual questionnaire is only for those who are return migrants. Hence, it is not possible to use that information.

Using longitudinal data for five consecutive years facilitates identification of initial movement, subsequent movement and duration between initial migration and subsequent migration. Moreover, the number of migrants in the village can be calculated by aggregating the number of migrants in village level. In this design, the observation period commences with the beginning of the study and lasts till the occurrence of an event, such as death or out-migration. If the person drops out of the

study for some other reasons or is lost to follow up or did not experience the event under study (in this case, a subsequent migration) during the observation period, the observation of the event is treated as right-censored. Respondents in the households which have at least one migrant are eligible for inclusion.

Figure 3.1 and 3.2 shows how initial migrant and subsequent migrant has been defined according to the definition. For example, suppose we observe one household which includes four members. In case 1 (see Figure 3.1), the first person (P1) moves out between 2000 and 2001 and the third person (P3) has migrated out between round 3 and round. In this case, P1 is the initial migrant in 2001 and P3 is the subsequent migrant in 2003.

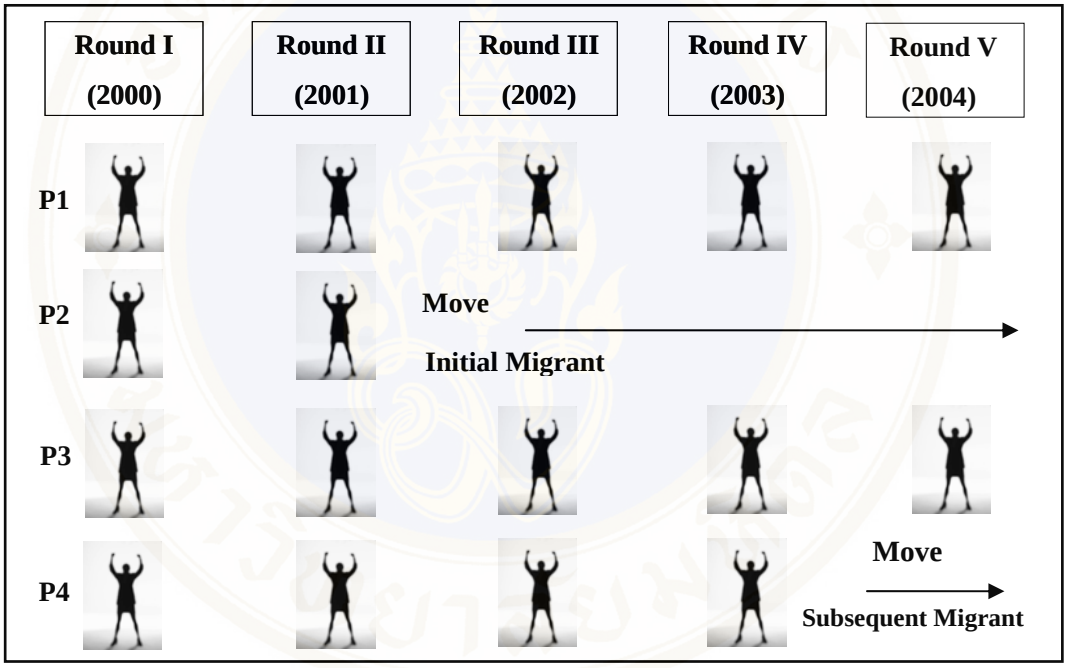
Figure 3. 1. Identification of initial migrant and subsequent migrant in the household 1



In case 2, (see Figure 3.2) there is no migration between round 1 and round 2. The second person (P2) has moved out between round 2 and round 3 and he didn't return until round 5. There are no migration between round 3 and round 4 in this household. Then, another person (P4) migrated out between round 4 and 5. For this

case, P2 is the initial migrant in 2002 and P4 is the subsequent migrant in 2004. If more than one person from the same household moved out at the same time, all of them will be treated as initial migrants. There is a possibility of no initial migrant in the household or more than one initial migrant in the same household. It is also possible that there is no subsequent migrant at all in some households or more than one subsequent migrant in the households.

Figure 3. 2. Identification of initial migrant and subsequent migrant in the household 2



3.3 Sample Size

For the purpose of the present analysis, study household should have at least one migrant. In the dataset, it is found that some households had no migrant at all during the study period. Hence, the households with no migrant were excluded from the present study. After exclusion, it was found that there were 14,444 cases for 3,272 households in the dataset. According to the definition, 3,767 persons were defined as initial migrants and 1,206 persons were found to be subsequent migrant. There are 880 households which have both initial and subsequent migrants. Some of the

households had more than one initial migrant (as more than one person moved out together at the same time). This dataset was used for the descriptive analysis to explore the pattern of initial migration and subsequent migration.

To examine the effect of initial migration on subsequent migration behavior, multivariate analysis was performed. For this purpose, 3,767 initial migrants were excluded from the dataset and 10,677 cases were remaining for analysis. Hence, effect of each initial migration on subsequent migration can be examined.

3.4 Method of Analysis

This analysis examines three dependent variables related to subsequent migration. The first dependent variable measures whether or not a person makes a move after the initial migration has taken in the same household. For this purpose, the dependent variable was treated as 'Subsequent Move' or 'No subsequent move'. Independent variables were taken from the characteristics of the initial migrant and control variables were taken from the characteristics of respondent at a year before the event had occurred. If no subsequent migration took place until round 5, all the background characteristics of subsequent migrant were taken from the round 4.

The second and third models were set up to investigate the pattern of subsequent migration in terms of destination and duration. To test the effect of the social network in terms of initial migration on pattern of subsequent migration, two dependent variables were created. The first one was migration destination which was measured at the provincial level. The second was duration between initial move and subsequent move which was measured in months.

As there were different input cases for different models, a separate dataset was produced according to requirements. For the first model, the dataset consists of 10,677 cases. The second and third models studied the pattern of subsequent migration; the input cases were only those who were subsequent migrants. There were 1,206 records in this dataset. The unit of analysis was individual. Bivariate and

multivariate analyses were undertaken. Descriptive analysis was used to describe the pattern of migration and the percent distribution of type of migrants by selected multilevel background characteristics was undertaken. For the multivariate analysis, the method of Generalized Estimating Equation (GEEs) Population Average Model was used for the binary logistic regression and linear regression according to the type of data.

3.5 Operational Definitions

3.5.1 Migration and family

Migration: In the original study of KDSS, migration is defined as a movement in or out of the village of current residence during the 12 months prior to the census. In the present study, migration is defined as movement out of the district of current residence for at least one month during the last 12 months prior to the census. The main reason for choosing the district as the boundary is to get a clearer picture of the effect of initial migration. Those who crossed the district boundary might need more help in the destination than those who crossed only village boundary. A minimum of one month of residence is required for a person to be defined as a usual resident of the household.

Non-migrant: According to the KDSS annual reports, persons who remained in the households in both census times are considered as non-migrants. In the present study, person who never moves out of the district more than one month in the period of observation (maximum of five years) is defined as non-migrant.

Initial migration: An initial migration is defined as the first move recorded in the year of observation in the household. It is identified from the longitudinal data for five consecutive years. The time of out migration is calculated for all the migrants in the dataset. The earliest time of out migration in the family during the observation period is defined as initial migration.

Initial migrant: The person(s) who made first move in the year of observation of the household (2000-2004) is defined as initial migrant(s). There may be more than one initial migrant in the household.

Subsequent migration: It is defined as the first move of other family members after the initial migrant from the same household during study period.

Subsequent migrant: The person who made a subsequent move after initial migrant from the same household is defined as subsequent migrant. There may be no or more than one subsequent migrant in the same household.

Family: In many culture, the family is the most important social system that people inhabit. Some traditional definitions of family focus either on blood relationship or the idea of a common household. A broad definition of the family offered by Levine (1990) is "*family members are individuals who by birth, adoption, marriage, or declared commitment share deep, personal connections and are mutually entitled to receive and obligated to provide support of various kinds to the extent possible, especially in times of need*." Other definitions emphasize the social network which may come to include any provider of social support. The meaning conveyed by the term *family* probably relates to the setting or culture in which the family is studied (Gibb et al., 1991). Sometimes, it depends on ties of affection and convenience such as accommodation, finances, and personal situation. According to the KDSS reports, household membership refers to anyone who resides in a particular household (sharing food, living arrangements, etc. in the same household) for at least one month continuously. In the present study, idea of a common household will be viewed within the context of family functioning.

3.5.2 Subsequent Moves

In the first model, **A subsequent move of a family member after initial migrant** will be the dependent variable. This variable measures whether the person made a subsequent move after the initial migrant from the same household out of the

district of current residence during the period of observation. Observation will commence from 2000-2001 periods and will continue until 2003-2004, or until they exit from the field site, whichever comes first. It is a dichotomous variable and measured at nominal scale. For this dependent variable, The Generalized Estimating Equations (GEEs) for the binary outcome was used to analyze.

The second is **Destination of subsequent migration**. This dependent variable is to observe whether the destination province of first move of a subsequent migrant is the same as with the destination province of initial migrant from the same household. In some households, there are more than one initial migrant, thus the possibility of different destination is expected. In this case, the destination of subsequent migration was checked with all the initial migrants' destination. If the destination of subsequent migrant was same with one of the initial migrants' destination, it was taken as same destination. This variable is dichotomous variable and measured at nominal scale.

The third is **Duration between initial and subsequent migration**. This variable is to measure the duration between initial migration and subsequent migration of family members. The duration was calculated by differing the time of out migration of initial migrant and subsequent migrant. It is continuous variable and measured in months. For the descriptive analysis, it was classified into four categories: such as 'Less than 6 months', '6-12 months', '13-24 months' and 'more than 24 months'.

3.5.3 Factors related to Subsequent Move

3.5.3.1 Initial Migration

Four tested initial migration variables were used in multivariate analyses to estimate both the odd of subsequent migration and odd of having the same destination of initial migrant. For the 'duration', the same independent variables except 'duration of initial migrant outside the home' are used to analyze.

Number of male and female initial migrants was calculated to see the effect of gender difference on subsequent migration. Both of these variables are continuous variables measured at interval/ratio scale. For the descriptive analysis, it was classified into three groups; 0, 1 and 2 and above. 'Duration of initial migrant outside home' was included as an initial migration variable to see the effect of duration on the odd of subsequent migration and odd of having the same destination. This variable measures the total duration away from home in terms of months. For the subsequent migrants, duration was calculated by differing the time of subsequent migration and initial migration. For the non-migrants, duration was the difference between the time of initial migration and the time of last census date or the last time of their presence in the study area.

The last initial migration variable is 'relationship to initial migrant'. This variable refers to the relationship between initial migrant and each of other left behind family members. Many literatures show the important of ties and closeness in migration process. It is categorical variable which is measured at nominal scale. The categories are spouse, parents, children, sibling and others. It is assumed that spousal relationship is the closeness relationship followed by the parents, sibling and others. If there was more than one initial migrant in the household, two alternative techniques were used to define the relationship. If the subsequent migrant followed the same destination of one of the initial migrants, the relationship was obtained from them. If the subsequent migrant didn't follow the same destination of initial migrant, the relationship was taken the relationship to first initial migrant as about 90 percent of initial migrants were first initial migrant. The same technique was used for the non-migrants.

3.5.3.2 Demographic, Social and Economic Factors

At the individual level, five individual characteristics were included in the analysis as controlled variables. They were age, sex, marital status, level of education and occupation. Age was coded in single years and age square was included in the analysis as the relationship between age and dependent variables were non-linear. Sex

refers to male and female. Marital status was divided into three categories such as single, married, and widowed/divorced/separated.

Level of education was measured at categorical level. It included five categories; no education, less than primary, completed primary, secondary and above and others. The definition of 'completed primary' was different among different ages due to the different education system of Thailand over the period. For those who were older than age 50 and completed grade 4, their level of education was considered as 'completed primary'. However, for those who were less than 50 years old, they were treated as 'completed primary' only when they passed grade 6. In 1960, compulsory education was seven years (4-3-3-2 year structure) and in 1977, the key stages of primary and secondary education were changed to the 6-3-3 year system that is in use today. Non-informal education, vocational training and education related to Buddhism were included in other category.

The occupation was categorized according to the type of occupation. There five categories such as no occupation, student, agricultural worker, professional/administrative/clerical and sale/service/others. Effect of social network may differ to different nature of jobs. Initial migration or social network may not have significant effect on those who were working as professional or in administrative sector. They will have no or little option to choose for the migration or destination. For those who were aged less than four years were treated as missing variables as the number of cases were too little to permit separate analysis.

In addition to individual-level measures, three household level characteristics, household assets score, household size and dependent number were included in the analysis. Household assets score was calculated by using principal component analysis (PCA) from thirteen selected material household assets which included color TV, VDO/VCD/ DVD, satellite disk, mobile phone, home phone, computer, air conditioner, washing machine, microwave, refrigerator, bicycle, motor cycle and car. It was an interval scale variable. For the descriptive analysis, it was classified into five quintiles.

Dependency in household was calculated by summing the total number of children aged less than 15 and elderly people aged 60 and over. For the descriptive analysis, it was classified into four categories; 0, 1, 2, and 3 and above.

Household size was calculated by aggregating the number of household members who resided in a particular household for at least one month continuously. It was measured at interval scale. For the descriptive analysis, it was classified into three categories; low household size (1-4), medium household size (5-6) and big household size (7+).

Finally, number of migrants in the village and strata variable indicating the residence of respondents were used to control at community level. It is calculated by aggregating migrants at village level for every round of census. For the subsequent migrant, number of migrants in the village was taken at the time of subsequent migration. For the non-migrants, it is taken from the last round of census. Number of migrants in the village was grouped into four groups 0-10, 11-20, 21-30 and 31 and above. Strata were categorized according to the main occupation of the population and land use patterns. Five strata were used in the descriptive analysis.

3.6 Limitations of Study

To fully test the theoretical perspectives, the availability of longitudinal data over a long period of time is required. However, the present study is limited to a five year period. Another limitation involves the definition of initial migration and subsequent migration. Both the initial migration and subsequent migration are limited to the study period. Information on what had happened before 2000 and after 2004 is not available. There is a possibility of prior movements in the household. There is also the possibility of subsequent migration after study period. Moreover, migration of the entire family out of the study area could not be included as it was not possible to trace the migrants. Hence, it is possibility of underestimation of both initial and subsequent migrants.

CHAPTER IV
PATTERN OF INITIAL MIGRATION AND SUBSEQUENT MIGATION

The objective of this chapter is to study the pattern of initial migration and subsequent migration in KDSS. This chapter is divided into five sections: (1) Timing of initial migration and subsequent migration; (2) Background characteristics of initial migrants and subsequent migrants (3) Destination and (4) Duration between initial migration and subsequent migration (5) Summary. The results from the research presents in descriptive forms.

4.1 Pattern of initial migration and subsequent migration

To study the pattern of initial migration and subsequent migration, the dataset where individuals are the units of analysis was used. The sample population used for descriptive analysis consists of 14,444 cases. Table 4.1 provides the number of initial migrants and the subsequent migrants from the same households during the observation period.

Table 4.1 Number of initial migrants and their subsequent migrants from the same household by the time of migration

Year	Total Migrants	Initial Migrant	Subsequent Migrants				
			2000-01	2001-02	2002-03	2003-04	Total
2000-01	1646	1497	149	222	215	163	749
2001-02	1261	962		77	122	101	300
2002-03	1134	750			47	92	139
2003-04	932	558				18	18
Total	**4,973**	**3767**	**149**	**299**	**384**	**374**	**1,206**

Within the observation period, 3,767 individual were identified as initial migrants and 1,206 were identified as subsequent migrants according to the definition (table 1). In 2001, 1,497 were out-migrants and 749 people from their households have moved out in the subsequent years. Between 2001 and 2002, 962 initial migrants moved out and another 300 subsequent migrants moved out within 3 years.

Number of initial migrants seems to reduce over the year. It can be partly explained by diminishing effect or limitation of data. Similarly, subsequent decreased between 2003 and 2004. Due to the limitation of study period, there is a chance of initial movement before 2000 which is not possible to trace back in this study. Similarly, subsequent migrants after 2004 cannot be accounted as the observation period end in 2004. Hence, under estimation of initial migrant as well as subsequent migrants can be expected. Nevertheless, the same pattern was found for all study periods. Subsequent migration mostly occurs one year after initial migration.

Table 4.2 Percent distribution of initial migrant and subsequent migrant by sex and time of out migration

Year	Initial Migrant			Subsequent Migrant		
	Male	Female	Number	Male	Female	Number
2000-01	52.5	47.5	1497	60.4	39.6	149
2001-02	55.1	44.9	962	53.5	46.5	299
2002-03	55.9	44.1	750	52.6	47.4	384
2003-04	53.9	46.1	558	50.8	49.2	374
Total	**54.0**	**46.0**	**3767**	**53.2**	**46.8**	**1206**
No: of cases	**2,036**	**1,731**	**3,767**	**642**	**564**	**1,206**

Table 4.2 presents the percent distribution of initial migrant and subsequent migrants by sex and time of out migration. In all the study period, the percent of males is higher than females for both types of migration (54 vs. 46 percent for initial migration and 53 vs. 47 percent for subsequent migration). The percent distribution of initial migrant by sex is very similar throughout the period. Among the subsequent

migrants, although male percentage is higher than the female percentage, the gap between male and female is narrower. The percent of males decreased and percent of female increased during the study period. Findings from tables 4.1 and 4.2 suggest that more males move initially and then female follow. This finding is consistent with the finding from the National Migration Survey which was conducted in 1995 (Chamratrithirong et al., 1995).

Table 4.3 Percent distribution of initial migrant and subsequent migrant by relationship to head of household

Year	Head of household	Spouse	Parents	Son/ daughter/ in law	Grand children	Others	Total	No. of cases
				Initial Migrant				
2000-01	7.1	3.4	1.3	61.1	11.7	15.4	100.0	1497
2001-02	12.1	5.9	1.2	61.9	11.2	7.7	100.0	962
2002-03	14.4	6.5	1.5	58.5	11.7	7.3	100.0	750
2003-04	16.3	9.1	0.4	57.9	10.8	5.6	100.0	558
Total	**11.2**	**5.5**	**1.2**	**60.3**	**11.4**	**10.4**	**100.0**	**3,767**
				Subsequent Migrant				
2000-01	9.4	4.0	2.0	55.0	16.1	13.4	100.0	149
2001-02	12.4	8.7	1.0	52.5	10.0	15.4	100.0	299
2002-03	10.9	6.5	1.3	62.2	12.0	7.0	100.0	384
2003-04	14.2	8.3	0.3	58.3	11.8	7.2	100.0	374
Total	**12.1**	**7.3**	**1.0**	**57.7**	**11.9**	**10.0**	**100.0**	**1,206**

The pattern of initial migration and subsequent migration by relationship to head of household is presented in table 4.3. The relationship to head of household status is taken from the first round (2000). Thus it is possible to see the pattern of movement within the family during study period. The finding shows that the most dominant group for both initial migrant and subsequent migrant are the second

generation in the household (son/ daughter/ son in law/ daughter in law). More than 60 percent of initial migrants and almost 60 percent of subsequent migrants belong to that group. This is consistent with previous studies which show that young people are more likely to move than older people. The second most likely group is grand children followed by head of household and others among initial migrants.

Among the subsequent migrants, head of households stood second and followed by grand children and others. The difference is very small. As most the migrants are concentrated in younger age groups, they must be moving to continue their study or to find out job after completion of study. The percent of spouse is higher among subsequent migrants compared with initial migrants (7.3 vs. 5.5 percent).

Table 4.4 Percent distribution of initial migrant and subsequent migrant by marital status

Year	Single	Married	Widowed	Divorced/ separated	Total	Number of cases
			Initial Migrants			
2000-01	68.2	26.4	2.2	3.2	100.0	1495
2001-02	65.6	28.8	2.7	2.9	100.0	962
2002-03	67.4	28.2	2.9	1.5	100.0	730
2003-04	64.4	32.4	1.3	2.0	100.0	547
Total	**66.8**	**28.2**	**2.3**	**2.6**	**100.0**	**3734***
			Subsequent Migrants			
2000-01	65.1	29.5	2.7	2.7	100.0	149
2001-02	61.5	33.1	2.3	3.0	100.0	299
2002-03	69.5	26.3	2.1	2.1	100.0	384
2003-04	66.6	28.5	1.4	3.6	100.0	362
Total	**66.1**	**29.1**	**2.0**	**2.8**	**100.0**	**1194***

*33 cases for initial migrant and 12 cases for subsequent migrants responded 'don't know/no answer'.

Table 4.4 presents the percent distribution of initial migrant and subsequent migrant by marital status. It is clearly seen that the never-married are the main group for both type of migration throughout the study period: two thirds of initial migrants and two thirds of subsequent migrants are never-married. As mentioned above, most of the singles are in the younger age group (15-29). It is also possible that they have entered into a life cycle stage (marriage or labour force participation) where migration is more likely to occur. Married people including widowed and divorced/separated are less likely to move compared with single people.

4.2 The initial and subsequent migrants by background characteristics

Table 4.5 shows the percent distribution of initial and subsequent migrants compared with the percent distribution of non migrants by individual background characteristics. The pattern was totally different among migrants and non-migrants. For both initial migrant and subsequent migrant, more than half of the population are concentrated in 15-29 age group. The proportion of 0-14 age group and 30-34 age groups are almost identical among initial migrants. Among the subsequent migrants, 0-14 age group stood in second position followed by 30-34 age groups. Among the non-migrant population, the highest proportion was found among 45-59 group (24.6 percent), followed by 0-14 age group (23.3 percent) and 30-34 age group (21.9 percent). The proportion of non migrant 60 and above population is more than triple that of the initial and subsequent migrants. Generally it can be said that migration occurs among younger people and older people are more likely to stay at home. Gender differential exist particularly among initial migrants.

Regarding the marital status, two- third of the migrants are single and another one third consists of married, widowed, divorced and separated. Among the non-migrant population, more than half (52.8 percent) are married followed by single (37.5 percent). Gender differentials do not exist among marital status of migrants except widowed/divorced/ separated group.

Table 4.5 Percent distribution of initial migrants, subsequent migrants and non-migrants by individual background characteristics

Individual characteristics	Initial Migrant			Subsequent Migrant			Non Migrant		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age group									
0-14	15.1	18.0	16.4	16.6	17.9	17.2	26.0	21.1	23.3
15-29	57.2	59.3	58.2	54.2	54.5	54.4	16.9	15.1	15.9
30-44	19.3	14.1	16.9	15.6	13.9	14.8	17.9	25.2	21.9
45-59	6.1	4.4	5.3	8.9	9.6	9.2	24.7	24.5	24.6
60+	2.3	4.3	3.2	4.7	4.1	4.4	14.5	14.1	14.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2025**	**1716**	**3741**	**640**	**563**	**1203**	**4308**	**5163**	**9471**
Marital Status									
Single	67.4	66.1	66.8	67.1	64.9	66.1	42.4	33.4	37.5
Married	29.7	26.6	28.3	29.2	28.9	29.1	52.4	53.1	52.8
Widowed/divorced/ separated	2.9	7.3	5.0	3.6	6.3	4.9	5.2	13.5	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2018**	**1718**	**3736**	**636**	**558**	**1194**	**4164**	**5053**	**9217**
Level of education									
No education	5.1	6.5	5.7	3.3	8.2	5.6	7.7	15.1	11.8
Incomplete primary	21.2	19.3	20.3	22.0	20.6	21.3	30.7	34.0	32.5
Completed Primary	23.9	18.9	21.6	25.9	17.4	21.9	24.8	22.4	23.5
Secondary	34.1	35.6	34.8	32.7	34.3	33.5	17.7	13.4	15.3
University	7.2	9.7	8.4	5.0	8.4	6.6	4.9	5.0	4.9
Others	8.4	9.9	9.1	11.0	11.1	11.0	14.3	10.1	12.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2015**	**1714**	**3729**	**636**	**559**	**1195**	**4112**	**5002**	**9114**
Occupation*									
No occupation	7.2	16.7	11.6	10.1	16.3	13.0	8.6	20.7	15.2
Students	34.1	41.2	37.4	34.5	44.1	39.0	30.0	24.4	26.9
Agriculture	34.3	22.1	28.7	38.4	20.0	29.7	36.2	32.7	34.3
Prof/admin/ clerical	2.9	3.7	3.3	3.2	2.9	3.1	3.8	4.1	4.0
Sale/services and others	21.5	16.3	19.1	13.8	16.7	15.2	21.4	18.0	19.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**1981**	**1678**	**3659**	**623**	**551**	**1174**	**4185**	**5069**	**9254**

Note: *108 initial migrants and 32 subsequent migrants are age less than 4 years.

A significant proportion of migrants are found in the secondary and university level education group compared with non migrants. In the study area, most of the villages have no secondary school. So students who complete their primary or lower secondary education have to move to the places where they can continue for their further study. It should also be noted that the female percentage is higher than male percentage in higher education level among migrants. Among the non migrants, the highest proportion was found incomplete primary education.

Students are dominant among migrants followed by agriculture workers. In contrast, agriculture workers are the main group among non-migrants followed by students. The proportion of female students is higher than the proportion of male students among both initial and subsequent migrants. In addition, a noticeable amount of female, both in initial and subsequent migration, are either working or studying. They may be accompanied with their parents or husbands. As with previous findings, it can be speculated that the majority of the initial migrants and subsequent migrants are students and they moved for further study.

The percent distribution of migrants and non migrants by household and community characteristics are presented in Table 4.6. As household income is not available from the data, the score of household assets are used as a proxy for household wealth. The household assets score was calculated by using Principal Component Analysis (PCA). It is found the different patterns among different groups and different genders. Though non-migrants were almost equally distributed among five quintiles[1], initial migrants and subsequent migrants rather concentrate in first two groups (45 percent). Similarly, more male belong to this two groups compared with female for both initial and subsequent migrants. The opposite pattern was found among non-migrants.

[1] Quintile is one fifth or 20 percent of a given amount. The term is used when describing the statistical distribution of a population.

Table 4.6 Percent distribution of initial migrants and subsequent migrants by household and community characteristics

Household Characteristics	Initial Migrant			Subsequent Migrant			Non Migrant		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Household assets									
Lowest	22.9	18.7	21.0	23.4	20.9	22.2	20.0	18.7	19.3
Second lowest	23.9	23.4	23.7	23.8	22.0	23.0	19.8	19.8	19.8
Middle	18.2	18.9	18.6	19.2	23.0	21.0	20.2	21.0	20.6
Fourth	18.6	19.4	19.0	18.4	20.0	19.2	19.4	19.0	19.2
Highest	16.5	19.5	17.9	15.3	14.0	14.7	20.7	21.5	21.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2036**	**1731**	**3767**	**642**	**564**	**1206**	**4307**	**5160**	**9467**
Dependency number									
0	22.3	20.9	21.7	18.8	21.1	19.9	23.4	22.2	22.7
1	30.6	28.2	29.5	26.6	24.6	25.7	28.1	29.9	29.1
2	25.7	24.8	25.3	26.0	24.3	25.2	25.5	26.1	25.8
3+	21.4	26.1	23.5	28.5	30.0	29.2	23.0	21.8	22.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2036**	**1731**	**3767**	**642**	**564**	**1206**	**4308**	**5163**	**9471**
Household size									
1-3	29.0	26.7	27.9	10.4	11.3	10.8	14.4	18.5	16.6
4-5	48.4	48.0	48.2	47.3	47.2	47.3	50.9	49.2	50.0
6+	22.6	25.3	23.8	42.3	41.5	41.9	34.7	32.3	33.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2018**	**1718**	**3736**	**636**	**559**	**1195**	**4289**	**5148**	**9437**
Number of migrants in the village									
0-10	19.3	21.3	20.2	23.8	20.4	22.2	37.4	37.4	37.4
11-20	36.7	39.2	37.8	34.7	40.4	37.4	36.7	36.9	36.8
21-30	22.4	19.9	21.3	20.6	22.5	21.5	17.7	17.4	17.5
31 and above	21.6	19.6	20.7	20.9	16.7	18.9	8.2	8.2	8.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2036**	**1731**	**3767**	**642**	**564**	**1206**	**4308**	**5163**	**9471**
Strata*									
Urban/semi urban	14.9	19.3	16.9	13.1	15.8	14.3	18.4	18.6	18.5
Rice field	19.2	18.7	19.0	20.7	19.1	20.0	19.1	19.4	19.3
Plantation	17.2	15.9	16.6	16.5	15.8	16.2	15.4	15.3	15.4
Uplands	26.9	23.7	25.4	26.9	27.5	27.2	25.7	24.3	24.9
Mix economy	21.8	22.4	22.1	22.7	21.8	22.3	21.4	22.3	21.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	**2024**	**1723**	**3747**	**642**	**564**	**1206**	**4308**	**5163**	**9471**

Note: There are 20 villages/census blocks in each stratum.

Most of the initial migrants were from household with lower number of dependent member; however, many subsequent migrants were from household with more dependent numbers. Similarly, more females were from household with more dependent members compared with male among migrants.

Half of initial migrants were from the household with 4-5 household members. However, another one fourth was from small family (1-3 members) and others were from the large family with 6 persons and above. For the subsequent migrants, more than 80 percent were from medium (4-5 members) or large families (6 members and above). Only 17 percents were from small families. It can be expected that more than one people move from the big households compared with small households. The larger the household size, the higher the chance of having initial migrants resulting the more subsequent migrants from those households.

For the community level analysis, the pattern of migrants and non migrants in Kanchanaburi DSS can be seen by number of migrants in the village and strata. Regarding the number of migrants in the village, very different pattern was found between migrants and non-migrants. Slightly more than 8 percent of non-migrants were living in the villages which have of more than 30 migrants. However, about 20 percent of both initial migrants and subsequent migrants belong to that group.

Findings from the KDSS reports, both in-migration and out migration rates were the highest in the upland stratum. It is also true for both initial migrants and subsequent migrants. The highest proportions were found in the upland area regardless of gender. As the present study taking into account only out-migration, urban/semi-urban area was found to have the lowest proportion of subsequent out-migration. In fact, this area had the high in-migration rate in all round of censuses suggesting that it was an attractive place for in-migrants particularly for those who seek non-agricultural work as well as students. There is a university, colleges and high schools in urban/semi-urban area.

4.3 Destination of initial migrants and subsequent migrants

To study the effect of social networks, particularly family networks, in terms of initial and subsequent migration, it is important to know their destinations. In the present study, migration is defined as a movement that crosses the district boundary. However, there are altogether 76 provinces including Bangkok which include 795 districts in Thailand, it is not feasible to perform district level analysis. Hence, for the destination, the analysis was undertaken at the provincial level.

Table 4.7 shows the destination of initial migrants and subsequent migrants by sex and selected provinces. For the observation period (2000-2004), one third of the initial migrants moved within Kanchanaburi province. Another one fourth of migrants moved to Bangkok. The third destination of initial migrants is Nakhon Pathom (8.7 percent) followed by Ratchaburi (6.8 percent) which are nearby provinces of Kanchanaburi. It is same for all the observation years regardless of sex. Similarly, the same pattern was found for subsequent migrants, 31 percent moved within Kanchanaburi followed by 24 percent moved to Bangkok, 8.5 percent to Nakhon Pathom and 6 percent to Ratchaburi. Generally, most of the migrants moved within Kanchanaburi, nearby provinces and Bangkok.

It is also noted that female percentage is higher than male percentage among the initial migrants who moved to Bangkok indicating that it was an attractive place for female in-migrants particularly for those who works in service sector. Unlike female initial migrants, female subsequent migrants preferred to move within Kanchanaburi Province. It can be presumed that female subsequent migrants followed their male household members who moved out within Kanchanaburi before them.

Table 4.7 Destination of initial migrants and subsequent migrants by sex and selected provinces

Province	2001			2002			2003			2004			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Initial Migrants															
Bangkok	23.3	30.1	26.5	23.0	22.0	22.6	22.2	26.9	24.3	17.3	26.5	21.5	22.1	26.9	24.3
Ratchaburi	6.1	8.0	7.0	8.1	5.8	7.1	7.4	4.5	6.1	7.3	5.8	6.6	7.1	6.5	6.8
Kanchanaburi	29.9	25.5	27.8	29.2	32.9	30.9	31.3	31.7	31.5	31.9	31.9	31.9	30.3	29.5	29.9
Supanburi	3.6	4.1	3.8	3.0	2.8	2.9	4.3	3.3	3.9	4.7	2.7	3.8	3.7	3.4	3.6
Nakhon pathom	7.8	8.3	8.0	10.0	10.9	10.4	7.9	6.9	7.5	10.0	8.6	9.3	8.7	8.7	8.7
Samut sakhon	2.7	2.3	2.5	3.8	6.0	4.8	2.9	2.1	2.5	3.3	3.5	3.4	3.1	3.4	3.2
Others	26.7	21.8	24.4	22.8	19.7	21.4	24.1	24.5	24.3	25.6	21.0	23.5	25.0	21.7	23.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No: of cases	**786**	**711**	**1497**	**530**	**432**	**962**	**419**	**331**	**750**	**301**	**257**	**558**	**2036**	**1731**	**3,767**
Subsequent Migrants															
Bangkok	23.3	27.1	24.8	24.4	26.6	25.4	26.7	21.4	24.2	22.6	21.7	22.2	24.5	23.4	24.0
Ratchaburi	12.2	8.5	10.7	4.4	6.5	5.4	3.0	7.7	5.2	5.3	5.4	5.3	5.3	6.7	6.0
Kanchanaburi	25.6	27.1	26.2	32.5	30.2	31.4	29.7	33.5	31.5	28.9	38.0	33.4	29.6	33.5	31.4
Supanburi	5.6	3.4	4.7	3.8	2.9	3.3	5.0	4.4	4.7	3.7	4.3	4.0	4.4	3.9	4.1
Nakhon pathom	4.4	6.8	5.4	6.3	5.8	6.0	8.9	12.1	10.4	11.1	8.7	9.9	8.3	8.9	8.5
Samut sakhon	1.1	5.1	2.7	1.9	5.8	3.7	2.0	2.2	2.1	3.7	2.7	3.2	2.3	3.5	2.9
Others	27.8	22.0	25.5	26.9	22.3	24.7	24.8	18.7	21.9	24.7	19.0	21.9	25.7	20.0	23.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No: of cases	**90**	**59**	**149**	**160**	**139**	**299**	**202**	**182**	**384**	**190**	**184**	**374**	**642**	**564**	**1,206**

From the previous table (table 4.7), it is found that majority of migrants moved within the Kanchanaburi province. As mentioned above, there are many tourist attraction areas in Kanchanaburi province; it is interesting to examine the flow and magnitude of migrants within the province. Table 4.8 shows the destination of initial and subsequent migrant by district within Kanchanaburi province. The results showed that out of 13 districts in the province, Muang district which is the capital of the province is the most attractive district for both initial migrants and subsequent migrants. Education may be one of the reasons for migrating to Maung district. There are also many internationally famous places in this district such as Bridge on the River Khwae, Death Railway, War Museum, Ban_Kao National Museum etc. Hence, there are many businesses related to tourism in that area and different types of jobs are available.

Table 4.8 Destination of initial and subsequent migrant by district within Kanchanaburi province

District	Initial Migrants					Subsequent Migrants				
	2001	**2002**	**2003**	**2004**	**2000-04**	**2001**	**2002**	**2003**	**2004**	**2000-04**
Muang	42.9	48.6	46.7	47.1	**45.8**	23.1	53.2	40.7	40.5	**41.9**
Ta Muang	13.6	8.2	8.3	11.2	**10.7**	12.8	7.4	6.8	3.3	**6.5**
Ta Ma Ka	7.5	9.9	7.4	8.8	**8.3**	15.4	16.0	13.6	14.0	**14.5**
Pa Nom Tuan	6.1	6.8	13.1	7.6	**8.0**	7.7	6.4	6.8	1.7	**5.1**
Sai Yok	4.4	7.9	8.3	7.6	**6.6**	0.0	3.2	5.9	11.6	**6.5**
Tong Pha Phum	5.3	4.1	4.4	2.4	**4.3**	17.9	2.1	5.1	1.7	**4.6**
Bor Ploy	4.1	2.4	3.9	4.7	**3.7**	10.3	5.3	5.9	7.4	**6.7**
Sang Kra Buri	2.7	3.8	1.7	4.7	**3.1**	2.6	0.0	6.8	5.8	**4.3**
Nong Prue	4.8	2.1	2.2	1.2	**3.0**	2.6	2.1	3.4	2.5	**2.7**
Dan Makham Tia	3.4	2.4	1.7	2.4	**2.6**	2.6	2.1	3.4	0.8	**2.2**
Sri Sa Wad	2.4	2.4	0.4	0.0	**1.6**	5.1	1.1	1.7	10.7	**4.8**
Huai Kra Chao	1.9	1.0	0.9	0.6	**1.3**	0.0	1.1	0.0	0.0	**0.3**
Lao Kwan	1.0	0.3	0.9	1.8	**0.9**	0.0	0.0	0.0	0.0	**0.0**
Total	100.0	100.0	100.0	100.0	**100.0**	100.0	100.0	100.0	100.0	**100.0**
No: of cases	**413**	**292**	**229**	**170**	**1104**	**39**	**94**	**118**	**121**	**372**

The second most attractive place among initial migrants is Ta Muang and the third one is Ta Ma Ka district. However, it is interesting to note that there are less proportion of subsequent migrants migrated to Ta Muang compared with initial migrants. Almost double of subsequent migrants migrated to Ta Ma Ka compared with initial migrants (14.5 percent vs. 8.3 percent). Ta Ma Ka is the second most attractive place and Ta Muang is the third attractive place among subsequent migrants. Generally, these areas are the industry areas and varieties of jobs are attracting the migrants from nearby districts. Similarly, Bor Ploy, Sang Kra Buri and Sri Sa Wad districts are popular among subsequent migrants. Huai Kra Chao and Lao Kwan are the least attractive places among the districts.

In table 4.9, the destination of initial migrants and subsequent migrants are disaggregated by background characteristics. It is found that slightly less than one third of subsequent migrants moved to the province where the initial migrant moved. Another two third of subsequent migrants moved to different provinces that initial migrants have moved. It is also possible that initial migrants may not be living in the same province at the time that the subsequent migrants moved. However, since information on current residence of initial migrants at the time of subsequent migration is not available, it is assumed that they were in the same province.

Almost half of children (0-14) and elderly people (60+) followed the same destination with initial migrant from their family. Females are slightly more likely to move to the same province with initial migrants compared with male indicating that family network is more important for female than male. No variation is found among different marital status.

The higher the level of education of subsequent migrants the lower the tendency of following the same destination. For instance, about 36 percent of subsequent migrants with no education or less than primary education moved to the same destination with initial migrant, however, only 25 percent of subsequent migrants with university level education followed the same province. On the other

hand, the former groups may be comprised of children who followed their parents or those who followed their sibling for further study.

Table 4.9 Destination of initial migrant and subsequent migrants by background characteristics

Background characteristics	Destination of initial and subsequent migrant			
	Not same	Same	Total	No. of cases
Age group				
0-14	57.5	42.5	100.0	**207**
15-29	70.8	29.2	100.0	**654**
30-44	73.6	26.4	100.0	**178**
45-59	70.3	29.7	100.0	**111**
60+	56.6	43.4	100.0	**53**
Sex				
Male	69.8	30.2	100.0	**642**
Female	66.5	33.5	100.0	**564**
Marital Status				
Single	67.8	32.2	100.0	**789**
Married	69.2	30.8	100.0	**347**
Widowed/divorced/separated	69.0	31.0	100.0	**58**
Others	66.7	33.3	100.0	**12**
Level of education				
No education	64.2	35.8	100.0	**67**
Less than primary	63.5	36.5	100.0	**255**
Primary	72.1	27.9	100.0	**262**
Secondary	68.3	31.8	100.0	**400**
University	74.7	25.3	100.0	**79**
Others	68.2	31.8	100.0	**132**
Occupation*				
No occupation	72.5	27.5	100.0	**153**
Students	64.8	35.2	100.0	**458**
Agriculture workers	70.5	29.5	100.0	**349**
Professional/admin/clerical	80.6	19.4	100.0	**36**
Sale/services and others	66.9	33.1	100.0	**178**
Total	**68.2**	**31.8**	**100.0**	**1,206**

*32 cases are less than 4 years of age.

According to the education system in Thailand, students do not necessarily follow senior members from their household, particularly for those who were at university level. Selection of different institutions will lead to different destination selection. In addition, the destination selection may not be their own; rather it may depend on the level of their academic skill and performance in their studies. In general, it can be speculated that the effect of social network is reduced with increasing level of education.

Different types of occupation may have different effect in selecting a destination. For instance, professional and administrative workers may not have their own choice of migration destination, thus, more than 80 percent of them did not follow to the same province. They may have different types of jobs than initial migrants. On the other hand, 33 percent of sales and services workers moved to the same province indicating the role of social network in this kind of job. More than one third of students migrated to the same province with their former migrants from their households. There is a higher chance of younger siblings following the elder siblings to attend the same school or to study in the same place.

4.4 Duration between initial migration and subsequent migration

In the scope of social network and subsequent migration, duration is one of the important dimensions to measure the effect of social network. Shorter duration can be expected if the network effect is strong. Table 4.10 presents the duration between initial migrants and subsequent migrants by background characteristics. Generally, less than half of the subsequent migrants moved within a year after initial migration had taken place. Thirty percent of subsequent migrants migrated after one year and another 25 percent moved after 2 years. The mean duration between initial and subsequent migration is 16.6 months.

Table 4.10 Duration between initial migrant and subsequent migrant by background characteristics

	1-6 months	7-12 months	13-24 months	25 months and above	Total	Mean (in months)	Number of cases
Age group							
0-14	24.6	22.7	31.9	20.8	100.0	15.7	**207**
15-29	23.9	19.7	31.0	25.4	100.0	16.6	**654**
30-44	25.3	23.0	27.5	24.2	100.0	15.7	**178**
45-59	14.4	23.4	27.0	35.1	100.0	19.8	**111**
60+	24.5	18.9	24.5	32.1	100.0	17.1	**53**
Sex							
Male	26.2	19.8	29.1	24.9	100.0	16.1	**642**
Female	20.4	22.5	30.9	26.2	100.0	17.1	**564**
Marital Status							
Single	23.6	20.5	31.2	24.7	100.0	16.6	**789**
Married	23.9	21.3	28.0	26.8	100.0	16.3	**347**
Widowed/divorced/ separated	24.1	24.1	29.3	22.4	100.0	15.8	**58**
Level of education							
No education	14.9	22.4	26.9	35.8	100.0	19.9	**67**
Less than primary	23.5	24.3	29.0	23.1	100.0	15.7	**255**
Primary	27.5	18.3	29.0	25.2	100.0	16.0	**262**
Secondary	22.5	19.5	33.0	25.0	100.0	16.9	**400**
University	20.3	21.5	35.4	22.8	100.0	16.9	**79**
Others	26.5	22.7	24.2	26.5	100.0	16.2	**132**
Occupation*							
No occupation	24.2	20.3	30.7	24.8	100.0	16.4	**153**
Students	23.6	21.9	23.6	30.9	100.0	17.3	**178**
Agriculture workers	19.2	21.0	34.9	24.9	100.0	17.3	**458**
Professional/admin/ clerical	24.6	22.6	27.2	25.5	100.0	16.2	**349**
Sales/services and others	25.0	13.9	36.1	25.0	100.0	16.4	**36**
Total	**23.5**	**21.1**	**29.9**	**25.5**	**100.0**	**16.6**	**1,206**

*32 cases are less than 4 years of age.

The duration is relatively shorter among children compared with older people (15.7 months for 0-14 age group, 19.8 months for 45-59 age group). More than one fourth of male subsequent migrants migrated within 6 months after initial migrant while it was only 20 percent for female. The mean duration between initial and subsequent migration for men is 16.1 months and for women is 17.1 months. The difference is only one month. There is not much difference among different marital status. Among the education groups, average duration is longest among migrants with no education (19.9 months) and shortest among those with incomplete primary education.

More than 65 percent moved within 6 months after initial migrant. Students and agriculture workers moved later than other occupation groups. In general, the pattern of duration between initial and subsequent migration is not very different by individual characteristics.

4.5 Summary

The total study population is 14,444, and among them 3,767 is identified as initial migrants and 1,206 are subsequent migrants. A total of 9,471 persons were found to be non-migrants who made no move at all in observation period.

Regarding the destination, one third of the initial migrants moved within Kanchanaburi province. Another one fourth moved to Bangkok. Similarly, the same pattern was found for subsequent migrants; one third of subsequent migrants moved within Kanchanaburi and remaining one fourth moved to Bangkok. Moreover, female percentage is higher than male percentage among the initial migrants who moved to Bangkok, however, female subsequent migrants preferred to move within Kanchanaburi Province. It is also found that slightly less than one third of subsequent migrants moved to the same province where the initial migrant moved. Another two third of subsequent migrants moved to different provinces.

In terms of duration, less than half of the subsequent migrants moved within a year after initial migration had taken place. Thirty percent of subsequent migrants migrated after one year and another 25 percent moved after 2 years. The mean duration between initial and subsequent migration is 16.6 months.

CHAPTER V
THE EFFECT OF INITIAL MIGRATION ON SUBSEQUENT MIGRATION

The objectives of this chapter are to examine to what extent initial migration in a family is related to the subsequent move of other family members from the same household and to explore the pattern of subsequent migration in terms of destination and duration. This chapter is divided into three sections: (1) Bivariate analysis of subsequent migration (2) Multivariate analysis of subsequent migration by selected background characteristics and (3) Summary.

5.1 Bivariate analysis of subsequent migration

Table 5.1, 5.2 and 5.3 present summary measures of initial migration variables and dependent variables related to subsequent migration characteristics. From the table 5.1, it is found that the proportion of male subsequent migrant is higher than female subsequent migrants. It is also found that more subsequent migration occurs in the household with more than two male initial migrant. A similar phenomenon was observed for number of female initial migrant. It seems that subsequent migration is more likely to occur when there are more male initial migrants in the household. One of the reasons could be the nature of migration itself in the Kanchanaburi DSS. The level of male out migration was higher than that of female out migration in every stratum (IPSR, 2006).

Generally, subsequent migration occurs more frequently if the initial migrant is their sibling or children. The least proportion of subsequent migration occurred if the initial migrants are parents. It may look strange that subsequent migration is less likely to occur when the initial migrant is spouse. One possible explanation may be that the left behind spouse may have to take responsibilities for the family and

children while the spouse is away from home and cannot follow. The highest proportion of subsequent migration takes place after 7-12 month of initial migration. It is followed by "less than 6 months" and "13- 24 months". Among the subsequent migrants who moved within 6 months, the male proportion is significantly higher than the female.

Table 5.1 Bivariate analysis of relationship of initial migration (IM) on subsequent migration

Initial Migration	Subsequent Migration						Total	Number of cases
	Yes			No				
	Male	Female	Total	Male	Female	Total		
No: of male IM* **								
0	6.3	5.1	**11.4**	42.8	45.8	**88.6**	100.0	**4496**
1	5.7	5.3	**10.9**	38.5	50.6	**89.1**	100.0	**5856**
2 +	9.2	7.7	**16.9**	39.4	43.7	**83.1**	100.0	**325**
No: of female IM								
0	5.6	5.3	**10.9**	37.9	51.2	**89.1**	100.0	**5435**
1	6.3	5.2	**11.5**	43.1	45.4	**88.5**	100.0	**4872**
2 +	7.8	6.8	**14.6**	40.0	45.4	**85.4**	100.0	**370**
Relationship to IM* **								
Spouse	5.7	4.2	**9.9**	33.1	57.0	**90.1**	100.0	**593**
Parents	2.4	1.7	**4.1**	42.3	53.7	**95.9**	100.0	**3567**
Children	7.3	6.7	**14.0**	44.2	41.8	**86.0**	100.0	**1351**
Sibling	10.7	9.3	**20.0**	39.8	40.2	**80.0**	100.0	**2496**
Others	5.8	5.9	**11.8**	38.0	50.3	**88.2**	100.0	**2670**
Duration of IM outside home* **								
< 6 months	11.0	7.5	**18.5**	37.2	44.2	**81.5**	100.0	**1526**
7-12 months	24.8	24.8	**49.6**	21.7	28.7	**50.4**	100.0	**512**
13-24 months	8.2	7.6	**15.8**	38.1	46.2	**84.2**	100.0	**2288**
25 + months	2.5	2.3	**4.8**	43.4	51.7	**95.2**	100.0	**6351**
Total	**6.0**	**5.3**	**11.3**	**40.3**	**48.4**	**88.7**	**100.0**	**10677**

Note: Level of significant: *= p<0.05, **= p<0.01, ***= p<0.001

Table 5.2 shows the relationship between initial migration and destination choice. Overall, the chance of subsequent migrant to follow to the same destination of the initial migrant was higher among the males compared with the females (16.1 vs. 15.7 percent). As expected, the likelihood of having the same destination with initial migrant is higher when there were more initial migrants in the same household. Subsequent migrants had more option to choose the destination. When there were no male initial migrant in the household, the chance of having the same destination of initial migrant was 34 percent. It has increased to 47 percent when the number of male initial migrant increased to more than one. Similarly, the same pattern was found for the number of female initial migrants. When there were no female initial migrant in the household, the chance of having the same destination of initial migrant was only 29 percent. It has increased to 33 percent when the number of female initial migrant was one in the household and it has increased to 52 percent when the number of female initial migrant were more than one.

There was not much variation in the destination among different relationships to the initial migrants except when the initial migrant is a parent. About 26 percent of subsequent migrants followed their parents' destination. Thirty-six percent of subsequent migrants followed the same direction if the initial migrant was spouse. Among the subsequent migrants, more women than men followed their spouses' destination.

If the subsequent migration occurred for a period of short duration (less than one year), the chance of moving to the same destination as the initial migrant was higher than those who moved after one year. Men were more likely to move to the same destination within a shorter period (less than 6 months), however more women followed to the same destination after 6 months. The chance of following to the same destination seems reduce increasing duration.

Table 5.2 Bivariate analysis of relationship of initial migration (IM) on destination of subsequent migration

Initial Migration	Not Same			Same				Number
	Male	Female	Total	Male	Female	Total	Total	of cases
No: of male IM*								
0	37.0	29.4	**66.3**	18.0	15.7	**33.7**	100.0	**511**
1	38.3	32.8	**71.1**	13.4	15.5	**28.9**	100.0	**640**
2 +	25.5	27.3	**52.7**	29.1	18.2	**47.3**	100.0	**55**
No: of female IM***								
0	38.1	32.9	**71.0**	13.3	15.7	**29.0**	100.0	**593**
1	37.0	30.2	**67.3**	18.1	14.7	**32.7**	100.0	**559**
2 +	27.8	20.4	**48.1**	25.9	25.9	**51.9**	100.0	**54**
Relationship to IM								
Spouse	40.7	23.7	**64.4**	16.9	18.6	**35.6**	100.0	**59**
Parents	45.5	29.0	**74.5**	13.8	11.7	**25.5**	100.0	**145**
Children	36.0	31.2	**67.2**	16.4	16.4	**32.8**	100.0	**189**
Sibling	35.5	31.7	**67.1**	18.0	14.8	**32.9**	100.0	**499**
Others	36.0	32.5	**68.5**	13.7	17.8	**31.5**	100.0	**314**
Duration of IM								
<6 months	39.6	25.8	**65.4**	19.8	14.8	**34.6**	100.0	**283**
7-12 months	33.1	32.7	**65.7**	16.9	17.3	**34.3**	100.0	**254**
13-24 months	38.0	31.9	**69.8**	13.9	16.3	**30.2**	100.0	**361**
25 + months	37.3	33.8	**71.1**	14.6	14.3	**28.9**	100.0	**308**
Total	**37.1**	**31.1**	**68.2**	**16.1**	**15.7**	**31.8**	**100.0**	**1206**

Note: Level of significant: *=p<0.05, ** =p<0.01, ***= p<0.001

In table 5.3, the duration between initial migrants and subsequent migrants were analyzed by initial migration variables. Overall, almost forty-five percent of the subsequent migration took place less than one year after the initial migrant moved out from the household. Another 30 percent of subsequent migration took place within 1 and 2 years. The mean duration between initial and subsequent migration is 16.6 months.

The findings suggested that if there were more initial migrants in the household, the duration was longer compared to less initial migrants. More than 26 percent of subsequent migration occurred within 6 months when there was no male

initial migrant in the household while it was only 13 percent for those with more than one male initial migrant in the household. Conversely, 27 percent of subsequent migration occurred after 2 years of initial migration when there were no male initial migrant in the household. It was more than 36 percent for the households with more than one male initial migrant. Very similar trend was found for female initial migrants. The decision to move may have taken longer for the families because there is already more than one migrant in the household. In addition, labour requirement in the place of origin may have been more important.

Regarding the relationship to initial migrants, if the initial migrants were a sibling or spouse, the duration was shorter for the subsequent migrants. But the difference was not great.

Table 5.3 Bivariate analysis of effect of initial migration on duration between initial migration and subsequent migration

Initial Migration (IM)	Duration (in months)				Mean	Number of cases
	1-6	7-12	13-24	25 +		
No. of male IM* **						
0	26.4	20.7	26.0	26.8	16.5	**511**
1	22.0	21.1	33.3	23.6	16.4	**640**
2 +	12.7	23.6	27.3	36.4	19.5	**55**
No. of female IM **						
0	23.1	20.6	32.5	23.8	16.4	**593**
1	24.9	20.8	27.4	27.0	16.8	**559**
2 +	13.0	29.6	27.8	29.6	17.1	**54**
Relationship to IM						
Spouse	23.7	20.3	37.3	18.6	15.1	**59**
Parents	20.7	21.4	25.5	32.4	17.9	**145**
Children	22.2	18.0	32.3	27.5	17.6	**189**
Sibling	23.2	20.2	32.1	24.4	16.9	**499**
Others	25.8	24.2	25.8	24.2	15.3	**314**
Total	**23.5**	**21.1**	**29.9**	**25.5**	**16.6**	**1206**

Note: Level of significant: *= p<0.05, **= p<0.01, ***= p<0.001

5.2 Multivariate analysis of subsequent migration

5.2.1 Effect of initial migration on subsequent migration

In the bivariate analysis (tables 5.1, 5.2 and 5.3), a general view of the relationship between initial migration variables and subsequent migration behavior variables is presented. These results also provide an actual description of the existing situation based on the sample. From the results, it is found that most of the initial migration variables have significant correlation with dependent variables. Thus, it can be predicted that initial migration variables together with multilevel background characteristics variables may explain the variance of subsequent migration.

The observed association of initial migration and subsequent migration seen in the bivariate analysis was examined by using binary logistic regression in Generalized Estimating Equation (GEE) population-averaged model in Stata to encounter the repeated measure in the same household (Table 5.4). There were 10,677 cases for analysis and the unit of analysis was the individual. The dependent variable was whether or not a subsequent migration took place in the year of observation among the left behind family members. Four models were estimated to observe the influence of initial migration on the odds of subsequent migration after controlling for multilevel background characteristics.

The first model contained community level characteristic which was then number of migrants in the village. In the second model, household characteristics such as household assets score and household size were added and the effect of household characteristics on subsequent migration was observed. In the third model, individual characteristics such as age, sex, marital status, education, and occupation were added. Age square was modelled as age had a non-linear relationship with the dependent variable. In the fourth model, migration variables such as number of male and female initial migrants, duration of initial migration and relationship to initial migrant were added.

In the first model, a statistically significant association was found between number of migrants in the village and odds of subsequent migration from the same households ($p < 0.001$). For instance, each unit increase in number of migrant in the village, the odds of subsequent migration increased by 4 percent. The level of significance remained even after controlling for household characteristics, individual characteristics and initial migration variables in the later models. Thus, level of migration in the community had a strong influence on the odds of subsequent migration.

Turning to the household variables, household assets score and household size were added in the second model. The Second model explained more about odds of subsequent migration (The wald chi-square[1] increased from 232 to 246) and the whole model had a significant association with the dependent variable ($p < 0.001$). In this model, both household assets score and household size had significant association with odds of subsequent migration. Household asset had negative relationship with odds of subsequent migration. An increase of one unit of household assets score decreased by 8 percent of the likelihood of subsequent migrant. After inclusion of the individual characteristics in model 3 and initial migration variables in model 4, the odds of subsequent migration has reduced by 14 percent in model 3 and 17 percent in model 4. It indicated that the link between household assets and subsequent migration had mediated by individual and initial migration variables. As a household asset was the proxy value of the economic situation of this household, it is possible that the odds of subsequent migration depend on the economic situation of the household.

As shown in Table 5.4, a positive relation was found between household size and subsequent migration. Each unit increase in household membership size increased the odd of subsequent migration 1.2 times. Generally, those who lived in large families will have to struggle more compared to those from the small family and this encourages them to move to find better income or job opportunities. Also, big

[1] The Wald Chi-square is essentially a squared *t*, where *t* = the value of the slope in the logistic regression divided by its standard error. It is used to test the hypothesis that at least one of the predictors' regression coefficients is not equal to zero.

household size has sufficient labour to supply the need of labour in the place of origin. The level of significance or household size did not change even after inclusion of the individual and initial migration characteristics in later model.

Individual characteristics were included in model 3 and it showed a very significant association with dependent variable. The Wald chi-square value had increased almost three times in model 3. All the individual characteristics included in model 3 had a strong association with subsequent migration. Age had positive association with subsequent migration. The odds of subsequent migration increased 7 percent with each year of age increased. Sex also played significant role in decision of subsequent migration. Male were 1.3 times more likely to make subsequent migration compared with female. Furthermore, married and widowed/ divorced/ separated were 55 percent and 34 percent respectively less likely to be subsequent migrant compared with single people. All the association were statistically significant at 0.001 levels.

Education had a positive effect on subsequent migration. For those respondents who had completed primary and secondary level and above the odd of being a subsequent migrant were 1.6 and 2.4 times respectively higher than those who had no schooling. Compared to those who worked in any sector or who were students, "no occupation" was associated with much higher odds of a subsequent migration. In contrast, being a student was 38 percent less likely to make subsequent migration compared to the reference group. Similarly, the persons who worked in the formal sector were about 57 percent less likely to be a subsequent migrant.

All the individual characteristics variables age, sex, marital status, education and occupation retained their significance level until the last model. In model 4, when initial migration characteristics were controlled, the odds ratios of education decreased to 1.6 and 2.4 for ‘completed primary’ and ‘secondary and above’ categories respectively. However, the odds ratio for occupation had increased. Controlling other factors result in increasing or decreasing the effect of education and occupation on subsequent migration indicating that they were correlated with initial migrant’s characteristics and that controlling for them took away some of their

effects. In the last model, four initial migration variables were included and the wald chi-square value had increased from 707 to 1028, $p < 0.001$. Both the number of male initial migrants and female initial migrants were associated with odds of subsequent migration. Duration of initial migrant outside the home had a negative impact on subsequent migration.

Odd of subsequent migration increased 1.3 times with each increase in male initial migrants. Similarly, each increase in female initial migrants increased the odds of subsequent migration 1.4 times.

For the duration of initial migration outside of the home, the duration was calculated as the difference in months between subsequent migration and initial migration. For those who did not make any move until the last census, the duration of initial migrant outside of the home was calculated by subtracting the time of survey at 2004 and time of initial migration. It was found that for every one month increase in duration of initial migration outside of the home, the odds of subsequent migration decreased by 8 percent, keeping other migration variables constant in the model.

Regarding the relationship to the initial migrant, the odds of reporting subsequent migration decreased by 33 percent for those whose parents had migrated compared with the reference group which was those whose spouse had migrated. On the other hand, those respondents whose sibling and others had migrated, the odd of subsequent migration increased more than 1.5 times each compared to those whose relationship to initial migrant was spouse.

Table 5.4 Odds of subsequent migration by initial migration and background characteristics variables

Background characteristics	Model 1	Model 2	Model 3	Model 4
Community characteristics				
No. of migrants in the village	1.046 ***	1.043 ***	1.044 ***	1.042 ***
Household characteristics				
Household assets		0.918 *	0.856 ***	0.831 ***
Household size		1.118 ***	1.073 ***	1.198 ***
Individual characteristics				
Age			1.069 ***	1.073 ***
Age square			0.999 ***	0.999 ***
Sex (ref: female)			1.266 ***	1.228 ***
Marital Status (ref: single)				
Married			0.354 ***	0.450 ***
Widowed/divorced/ separated			0.549 ***	0.655 ***
Education (ref: no schooling)				
Incomplete primary			1.029	0.987
Completed primary			1.819 ***	1.610 ***
Secondary and above			2.766 ***	2.372 ***
Occupation (ref: no occupation)				
Students			0.492 ***	0.615 ***
Agriculture workers			0.736 **	0.816
Professional/admin/clerical			0.357 ***	0.433 ***
Sale/services and others			0.453 ***	0.549 ***
Initial Migration (IM)				
No. of male IM in HH				1.271 *
No. of female IM in HH				1.360 **
Duration outside home				0.923 ***
Relationship to IM (ref: spouse)				
Parents				0.666 *
Children				1.305
Sibling				1.457 *
Others				1.454 *
Wald Chi-square (df)[2]	232(1) ***	246(3) ***	707(15) ***	1028(22) ***
Chi-square change (df)		14(2)	461(12)	321(7)
Number of cases	10677	10674	10629	10629

Note: Level of significant: *= p<0.05, **= p<0.01, ***= p<0.001

[2] The number in the parentheses indicates the degrees of freedom of the Chi-Square distribution used to test the Wald Chi-Square statistic and is defined by the number of predictors in the model.

5.2.2 Effect of initial migration on destination of subsequent migrant

In this section, I examined the association between initial migration and the destination of the subsequent migration. The Dependent variable was a dichotomous variable (whether or not having same destination as the initial migration in terms of province). Binary logistic regression model was performed in Generalized Estimation Equation Population-average model in Stata to encounter the repeated measure in the same household. The input variables were all subsequent migrants and the unit of analysis was individual. Four models were estimated to observe the influence of initial migration variables on the odds of having same destination province as initial migrant after controlling multilevel background characteristics of subsequent migrants. The odds ratios are presented in Table 5.5.

In the first model, the number of migrants in the village was included. There was no effect of level of migration stocks in the community on odds of having the same destination as the initial migrant. In the second model, household assets score and household size were included; however, no household characteristic had a significant effect on having the same destination.

In the model 3, individual characteristics were added. The wald chi-square value was increased however; the whole model did not show any significant association with destination. Among the individual characteristics, only age, age square and education variables had a statistically significant effect on moving to the same destination. Every increase of one year of age reduced by 5 percent the odds of moving to the same destination.

Another variable which showed a significant association with the dependent variable in the model 3 was education. Migrants who were ‘incomplete primary’ education category were 1.6 times more likely to follow the destination of initial migrant. However, the association was no longer significant after controlling for the initial migration variables in model 4. It is possible that the effect of education was mediated through tested initial migration variables.

The last model was estimated in order to observe if the odds of having the same destination varied by initial migration variables while other variables were held constant. Four initial migration variables were included in model 4 and it showed a significant association with the dependent variable. The results indicated that number of female initial migrants and duration of initial migration had a significant association with having same destination. Having more migrants in the household may have increased the probability of moving to same destination. Subsequent migrant may have more options to choose destination. Every increase of one female initial migrant in the household increased the probability of moving to the same destination by 1.6 times. It can be expected to observe the effects of number of female initial migrants on probability of moving the same destination even all of them have same individual, household and community characteristics.

For the duration, every increase of one month for duration of initial migration, the odds of having same destination of initial migrant reduced one percent. There were no relation between relationship to initial migrant and having same destination as initial migrants in the Kanchanaburi context.

Table 5.5 Odd of moving to the same destination by initial migrants and subsequent migrants

Background characteristics	Model 1	Model 2	Model 3	Model 4
Community characteristics				
No. of migrants in the village	1.0003	0.9999	1.0002	0.9982
Household characteristics				
Household assets		0.9112	0.9276	0.9303
Household size		0.9987	1.0008	0.9729
Individual characteristics				
Age			0.9426 **	0.9494 *
Age square			1.0008 **	1.0008 **
Sex (ref: female)			0.8872	0.8748
Marital Status (ref: single)				
Married			1.0704	1.209
Widowed/divorced/ separated			0.8898	0.806
Education (ref: no schooling)				
Incomplete primary			1.6365 *	1.515
Completed primary			1.1628	1.020
Secondary and above			1.3186	1.140
Occupation (ref: no occupation)				
Students			1.2310	1.322
Agriculture workers			1.2493	1.275
Professional/admin/clerical			0.7037	0.736
Sale/services and others			1.4652	1.455
Initial Migration (IM)				
No. of male IM in HH				1.352
No. of female IM in HH				1.633 **
Duration outside home				0.986 *
Relationship to IM (ref: spouse)				
Parents				0.611
Children				1.118
Sibling				1.320
Others				0.986
Wald Chi-square (df)	0.0 (1)	1.96 (3)	23.1(15)	46 (22) ***
Chi-square change (df)		1.96 (2)	21 (12)	23 (7)
Number of cases	1206	1195	1192	1192

Note: Level of significant: *= p<0.05, **= p<0.01, ***= p<0.001

5.2.3 Effect of initial migration on duration between initial and subsequent migration

To determine the relative importance of factors that are related to duration between initial and subsequent migration from the same household, as well as to establish which of the variables have independent effects, four linear regression models were estimated (Table 5.6). The dependent variable is duration between initial migration and subsequent migration which is measured in months. Linear regression analysis in GEE Population-average model in Stata is used, as the dependent variable is an interval level.

In the first model, the number of migrants in the village was negatively associated with duration between initial and subsequent migration. With the every increase of one migrant in a village there was a decrease in duration of 0.2 months ($p<0.001$).

Household assets and household size were added in the second model. As a whole model, Wald chi-square value showed little increase after inclusion of them, however, it indicated the statistically significant association between model and dependent variable at $p<0.001$. In this model, household assets score had no significant association with duration between initial and subsequent migration. For the household size, it had significant positive association with duration between initial and subsequent migration. With the every increase of one person of household member associated with an increase in duration of 0.5 months.

In the third model, individual characteristics of subsequent migrants such as age, age square, sex, marital status, education and occupation were included. The wald chi-square value increased significantly in the third model. All the individual characteristics except marital status had significant effect on duration. Every increase of 1 year of age increased 0.3 months duration. When other variables were added in later model, the same situation was observed. Hence, age had independent effect on the duration. Sex did not show any relationship with duration in model 3. However,

after inclusion of initial migration variables in model 4, it became significant. It was observed that male moved after initial migrant 1.2 months earlier than female.

In terms of education, subsequent migrants who had incomplete primary education moved 3 months earlier than those migrants with no schooling. Another variable added in model 3 was occupation of subsequent migrants. Type of occupation had some relation with duration between initial and subsequent migration. Students made subsequent migration 3 months later than their reference group, those who had no education. For those variables, education and occupation, the significance level remained even after including initial migration characteristics in model 4. Hence, education and occupation had an effect on the duration even all of subsequent migrants had the same individual, household and community characteristics.

In the fourth model, initial migration variables were included as independent variables. The whole model was significantly associated with duration between initial and subsequent migrations. It was found that almost all the initial migration variables had a positive relationship with duration between initial and subsequent migration. All the results were consistent with findings from the descriptive analysis. However, no statistically significant association was found between initial migration variables and duration between initial and subsequent migration.

Table 5.6. Regression coefficients of variables effecting duration between initial migration and subsequent migration

Background characteristics	Model 1	Model 2	Model 3	Model 4
Community characteristics				
No. of migrants in the village	-0.2042 ***	-0.1992 ***	-0.1933 ***	-0.1891 ***
Household characteristics				
Household assets		-0.3428	-0.6186	-0.5492
Household size		0.4310 *	0.4846 *	0.5365 **
Individual characteristics				
Age			0.2559 *	0.2916 **
Age square			-0.0021	-0.0027 *
Sex (ref: female)			-1.0957	-1.2068 *
Marital Status (ref: single)				
Married			-1.9787	-2.2631
Widowed/divorced/ separated			-1.7888	-1.6252
Education (ref: no schooling)				
Incomplete primary			-3.3156 ***	-3.0858 **
Completed primary			-1.7877	-1.3767
Secondary and above			-1.7848	-1.4508
Occupation (ref: no occupation)				
Students			3.3554 **	3.1548 **
Agriculture workers			0.5615	0.4807
Professional/admin/clerical			0.2386	0.1038
Sale/services and others			0.4188	0.5870
Initial Migration (IM)				
No. of male IM in HH				0.1520
No. of female IM in HH				0.4359
Relationship to IM (ref: spouse)				
Parents				2.4963
Children				2.2627
Sibling				0.5270
Others				-0.2853
Constant	20.41 ***	17.95 ***	14.38 ***	12.4286 ***
Wald Chi-square (df)	38.5(1) ***	39(3) ***	82(15) ***	92 (21) ***
Chi-square change (df)		0.5(2)	43 (12)	10 (6)
Number of cases	1206	1195	1192	1192

Note: Level of significant: *= p<0.05, **= p<0.01, ***= p<0.001

5.3 Summary

The binary logistic regression analysis for the odds of subsequent migration indicates that the number of initial migrants in the household, duration of initial migration and relationship to initial migrants have a statistically significant effect on subsequent migration even after controlling for individual, household and community characteristics. Number of initial migrants in the household was associated with increased odds of subsequent migration, regardless of sex. Duration of initial migration was negatively associated with odds of subsequent migration. Relationship to initial migrant also had significant effect on odds of subsequent migration.

At the individual level, subsequent migration is more likely to occur with increasing age. Males, the single, those who had better education, and those who were not engaged in any occupation were more likely to make subsequent move. At the household level, migrants from families with less household assets and with large families tend to make more subsequent migrations. At the community level, number of migrants in the village was positively associated with odd of subsequent migration.

In the binary logistic regression analysis for moving to the same destination, 'number of female initial migrant in the household' and 'duration of initial migration' had statistically significant effect on moving to the same destination of initial migrant. However, no other variable in the individual, household and community level except age had significant effect on moving to the same destination.

In the linear regression analysis for duration between initial migration and subsequent migration, none of the initial migration variables had significant effect on duration. Among the tested individual characteristics, all variables except marital status had significant effect on duration. Among two household variables, only household size had a significant positive effect on duration between initial migration and subsequent migration. For community factor, number of migrants in the village had negatively associated with duration between initial and subsequent migration.

Generally, it could be concluded that number of initial migrants in the family, duration of initial migration and relationship to initial migrant were associated with subsequent migration after controlling for multilevel background characteristics of subsequent migrants.

CHAPTER VI
DISCUSSION AND CONCLUSION

The concluding chapter consists of two sections. The first section provides a discussion of the results and the final section presents conclusion and recommendations based on the findings.

6.1 Discussion

The aim of this study is to examine the effect of initial migration on subsequent migration. The results of the research suggest that the effect of initial migration on subsequent migration of left behind family members can be viewed as a mutual interplay of individual, household, and community characteristics. In this study, ‘non-migrants’ refer to those who did not migrate in the period of observation (maximum of five years) and ‘initial migrants’ are those who made the first move in the year of observation of the household. Subsequent migrants are persons who make subsequent moves after the initial migration from the same household.

In this study, five hypotheses were tested. The results from both bivariate and multivariate analyses confirmed the first hypothesis that 'the larger the number of initial migrants in the household, the higher the chance of subsequent migration'. In addition, the results also confirmed the first two sub-hypotheses, 'The more male initial migrants in the household, the higher the chance of subsequent migration and 'the more female initial migrants in the household, the higher the chance of subsequent migration'. Odds of subsequent migration increased 1.3 times with every additional male initial migrant. Similarly, an increase of one female initial migrant increased the odds of a subsequent move 1.4 times even after controlling other background characteristics.

These finding are consistent with the theories as well as the literature which has mentioned in the previous chapter. According to Massey (1990), social networks, particularly the family network have played a crucial role for the establishment of the migration process. With the use of social capital (kinship ties), the costs and risks associated with the act of migrating are reduced and consequently the probability of subsequent migration increased. It is also mentioned in Cumulative Causation Theory that previous migration experienced led not only to repeated migration, but motivates the non-migrants to migrate as well (Elrick, 2005).

Similarly, Massey et al. (1993) argued that the probability of migration within a household increases if a family member already has migration experience. Curran et al. (2005) also argued that household-based migrant social capital appears to have stronger positive effects than village-based migrant social capital for all individuals because stronger ties and greater degrees of trust may characterize household or family-based migrant social capital, significantly decreasing the costs of migration. Hence, findings from the present study support the literature.

The results from this study also suggested that female initial migrants have a more positive effect than male initial migrants on the odds of subsequent migration in the household. This is consistent with the findings of Tangchonlatip (2005) who found that the increase in the number of working age female migrants in a household enhanced the probability of being long-term migrants for both sexes. The possible reason for the finding was that the strong ties of female migrants to their origin household could facilitate the migration of both men and women over a long period of time. Hence, the third sub-hypothesis is also accepted.

Similarly, findings from the analysis support the second hypothesis, ‘the longer the duration of initial migration outside the home, the lower the probability of subsequent migration’. The results show that for every one month increase in duration of the initial migrant, the odds of subsequent migration decreases by 8 percent when keeping the effects of other migration variables constant in the model. This is consistent with the finding from the bivariate analysis. In the bivariate analysis, the

longer the duration of initial migration outside the home, the lower the chance of subsequent moves.

Though there are few studies undertaken on the present topic, many studies on migration duration and remittances have found that remittances will decline over time due to various factors such as less social ties and distant perceptions. Successful migrants may be followed by others from the same family; initial targets (where they existed) will have been met (Connell and Richard, 2005). This concept may apply to the present study. It is assumed that once migrants are settled in the destination, he or she can help to bring other family members from the same household and once their aim have been met, migration may no longer occur.

Another possible reason may be gender based. In Kanchanaburi, the proportion of male initial migrant is higher than the female (54 percent vs. 46 percent). Curran et al. (2005) found that the longer women spend as migrants the more helpful they can be to future migrants. She argued that this is not true for the male-based migrant social capital. The longer men are away from natal households the weaker their ties and the lower the quality of migrant social capital transmitted through them. Hence, duration of male initial migration may not enhance the probability of subsequent migration of other family members.

The third hypothesis is, "the closer the relationship to the initial migrant, the higher the chance of subsequent migration". This hypothesis was developed based on extensive literature (Hugo, 1981; Fawcett, 1989; Massey et al., 1993). Hugo (1981) stated that family members are encouraged by the family to migrate for a certain period of time. According to Fawcett (1989), family relationships have an enduring impact on migration. Authors argued that policies, rules and even norms may change, but obligations among family members are of an abiding nature. In this study, it is assumed that the spousal relationship is the closest relationship followed by parent-children relationship, siblings and others.

From the results, it is found that the odds of subsequent migration decreases by 44 percent for those whose parents have migrated compared with those whose spouse have migrated. Conversely, 'siblings' and 'others' have a positive relationship with the odds of subsequent migration. The odds of both of them are 1.5 times each more likely to make a subsequent migration compared with 'spouse'. Thus the third hypothesis is rejected.

As mentioned earlier, more than one third of both initial and subsequent migrants were students and they have to migrate for further studies outside the district. It may not be the effect of social networks and relationship to initial migrants that explain the odds of subsequent migration of students. To confirm this, regression analysis was tested again after excluding students from the dataset (data not shown). It was found that there was no significant association between 'siblings' category and the odds of subsequent migration. Similarly, no association was found for 'other relationships' category and the odds of subsequent migration. This finding confirms that students may have to migrate regardless of their relationship to initial migrants for further and/or better education. Thus, the third hypothesis may work when we focus only on labour migration.

On the other hand, it can be seen as household a strategy which is explained by the new household economics theory of migration. In this theory, it is mentioned that rural households adopt strategies to maximize income and minimize risk by diversifying the allocation of household resources such as family labour to ensure their incomes. While some family members can be assigned economic activities in the origin, others may be sent to work outside the districts. In the Kanchanaburi context, a husband or wife may migrate to work outside the district while their spouse is left behind to take the responsibility for the running of household activities, or work on the local farm, or take care of dependent family members. The network theory may not be applicable in this instance, particularly in the Kanchanaburi context.

The fourth hypothesis is 'the more female initial migrants in the household, the more subsequent migrants move to the same destination'. The findings support this

hypothesis. Every increase of one female initial migrant in the household increased the odds of moving to the same destination with initial migrant 1.6 times. No significant association was found for the number of male initial migrants in the family. This finding is consistent with the findings from other studies (Curran et al., 2005; Curran and Saguy, 2001; Tangchonlatip, 2005).

As mentioned earlier, the study by Curran et al. (2005) indicates that cumulative migrant experience of male household members seems to affect only male migration. This may be because women tend to maintain ties with their origin household and men do not. Female migrants can enhance the quality of their networks as they develop contacts and resources in places of destination. A similar result was found in the study undertaken by Curran and Saguy (2001). Thus, the odds of following to the same destination increased with the increasing number of female initial migrants in the household. Hence, the fourth hypothesis is accepted.

The last hypothesis is 'the more initial migrants in the household, the longer the duration between initial and subsequent migration'. Though no direct literature was found for this hypothesis, generally it is assumed that once the household has more than one migrant, the left behind household members may become reluctant or unable to move within a short period because they may have to take care of their own land, household, dependent family members etc. The household economic theory may be applicable in this instance. Under the new economic regime, decision-making is not only the individual’s but also that of family who decide for possible diversification of family labor. The theory assumes that “wage differentials are not necessary conditions for migration to occur” because household may have incentives to diversify risks through migration even in the absence of wage differential (Massey et al., 1993: 439).

This hypothesis is supported by the descriptive analysis. More than 26 percent of subsequent migration occurred within 6 months when there is no initial male migrant in the household while it was only 13 percent for those with more than one male initial migrant in the household. Conversely, 27 percent of subsequent migration occurred after two years of initial migration when there is no male initial migrant in

the household. It was more than 36 percent for households with more than one initial migrant. However, no significant relationship was found in the multivariate analysis. Thus, the findings fail to support the fifth hypothesis fully.

Apart from the initial migration variables, the importance of individual, household and village level variables in explaining the probability of subsequent migration as well as duration between initial migration and subsequent migration was also apparent. The results from the multivariate analysis confirm the selectivity of migration. Both the initial and subsequent migrants were age selective and not a random sample of the population at origin (Lee, 1966). Certain individuals are more likely to migrate based on their personal characteristics. In line with the literature, present findings also show the selectivity of sex and marital status; male and singles are more likely to make subsequent move.

Education and occupation are also important predictors for subsequent migration. Schooling increases the propensity to migrate, and highly educated workers are much more likely than others to migrate (Waggoner, 2004). In terms of occupation, those who have no occupation are more likely to make subsequent migration. They might move for seeking job as unemployment and poverty are the main reasons for out-migration in many literatures.

In the household level, both household assets and household size are found to be important predictors of subsequent migration. The findings are in line with the literatures. The lower tendency for subsequent migration was found in the household with better assets highlighting the implication of Household strategy again. Subsequent migrant may want to follow the first one to improve rural or home properties. Regarding the household size, the finding is consistent with the literature. The larger the family size, the higher the likelihood of migration (Zohry, 2002) especially subsequent migration (Silver, 2006). Availability of information may depend on the number of household members. Many studies in Thailand proved that persons residing in extended family households have a higher chance of move than those living in a nuclear family (Sawangdee, 1997; Richter et al., 1997).

Magnitude of migration in the community can be seen as a supporting factor for the norm of migration. "The Cumulative Causation Theory" pointed out the influence of culture on migration and vice-versa. Migration experience in the community may lead to repeat migration as well as motivation to non-migrants. Thus, over time migration not only changes the attitudes of the individual, but also influences community values and expectations (Elrick, 2005). Accordance with the literature, number of migrants in the village variable was tested in the models and it showed the significant association with odds of subsequent migration and duration between initial and subsequent migration.

Overall, the results indicate strong support for most of the hypotheses about subsequent migration. In addition, findings are in line with literatures. From the logistic regression models, a statistically significant effect of initial migration was present in all models. It can also be observed that the variables which are significant in the first model continue to be significant in succeeding models. Thus, it can be concluded that the initial migration in a family is related to the subsequent move of other family members from the same household, especially when individual, household and community characteristics are taken into account.

6.2 Conclusion and Recommendations

Migration and development has reciprocal effects on each other. There is a strong body of evidence which shows that migration contributes to the development of the society and that development affects the trend and patterns of migration. In this respect, migration plays an important part in the socio-economic development of any country. This study provides substantial evidence on the pattern of initial and subsequent migration as well as the effect of initial migration on subsequent migration. From knowing the migration patterns, it is feasible to facilitate formulation of appropriate policies. No one factor can be looked at individually because all the factors mutually interact at different levels; however, the overall situation needs policy initiatives for improvement.

For specific recommendations based on the findings from the present study, a means to monitor the migration to predict what migration would follow and from which households is suggested. This would be useful in terms of making plans for services needed to provide for the migrants. For instance, female initial migrants are related to an increase in subsequent migration as well as move to the same destination. If we know that more female migrants are in the same place, then we could expect to have some more subsequent migrants and thereby make plans to provide services that they would require. Similarly, if a particular area is established with long term migrants, it can be expected that the chance of having more migrants is not as much as that of an area that has many short term or temporary migrants.

For general recommendations based on the pattern of initial and subsequent migration, it is found that most of the initial and subsequent migrants are young (more than 50 percent are in 15-29 age group), students (one third of study population), and come from rural areas (more than 80 percent). Most of them have a low educational level and come from poor families with many dependent members. Many of them are working in the informal sector. Hence, it can be assumed that these factors are pushing some of the young family members to leave for further studies or to look for additional income outside the current place of residence. Thus migration in Kanchanaburi can be seen as a flight from poverty or an attempt to find better opportunities elsewhere.

This is supported by the findings about the destination of migrants. Many of the migrants who moved within Kanchanaburi headed to places where better opportunities are available. To mitigate this issue, rural poverty alleviation schemes should be initiated by improving the informal sector. In addition, it is found that significant proportions of both initial and subsequent migrants are women. Thus it needs to develop measures to protect the rights and improve the working conditions of female migrants.

The present study focuses on the effect of initial migration on subsequent migration from a social network approach. The findings show the importance of initial migration on subsequent migration behaviour of left behind family members.

However, apart from the initial migration, most of the individual and household characteristics have a very strong effect on subsequent migration. Hence, it can be speculated that social networks is not the only important factor to predict subsequent migration. Household strategies may apply to the migration decision rather than the social network; namely, who will move, where to move and when to move. Subsequent migration can be influenced by social, economic and community factors and accordingly further analysis is suggested which could examine the alternative theory "the new household economic theories of migration" which is based on household decision making.

In addition, remittances may have some effect on subsequent migration. In fact, the inclusion of remittance would be beneficial in understanding the role of household economic theory on subsequent migration. Moreover, it is also found that social networks are not the only reason for migration but that people move for different reasons, which is an extensive subject matter in itself and cannot be addressed in the present study. Thus, it would be beneficial should studies that examine additional varied and numerous reasons for migration be undertaken.

Lastly, it would be worthwhile to put one more question in the household questionnaire of KDSS on 'Age at first migration' to overcome the limitation of this study. If this information is available, effect of initial migration on subsequent migration can be analysed by using household as a unit of analysis. Then, it will be more meaningful to see the difference between households with initial migrants and without them.

BIBLIOGRAPHY

Amuedo-Dorantes, C. and Mundra, K. (2005). Social Networks and their Impact on the Employment and Earnings of Mexican Immigrants. In: Economic Working Paper Archive at WUSTL/ Labor and Demography.

Arnold, F. and Piampiti, S. (1984). Female Migration in Thailand; In: *Women in the Cities of Asia: Migration and Urban Adaptation*, edited by James T. Fawcett, Siew-Ean Khoo and Peter C. Smith. Coulder, Colorado, Westview, 1984. pp.143-64.

Bilsborrow, R. E., (1998). *Migration, Urbanization, and Development: New Directions and Issues*. UNFPA, United Nations Population Fund and Kluwer Academic Publishers.

Chamratrithirong, A., Archavanitkul, K., Ritcher, K., Guest, P., Thongtai, V., Boonchalaksi, W., Piriyathamwong, N., Vong-Ek, P., (1995). *National Migration Survey of Thailand*. Institute for Population and Social Research publication, No.188, Mahidol University, Bangkok.

Coniglio, N. D. and Prota, F. (2003). Human Capital Accumulation and Migration in a Peripheral EU Region: The Case of Basilicata. Centre for International Economics and Shipping (SIOS) Working Paper 43/03, Bergen.

Connell, J and Richard P.C. B. (2005). *Remittances in the Pacific: An Overview*. Asian Development Bank Pacific Studies Series, Asian Development Bank: Manila.

Curran, S. R. and Garip, F. and Chung, C. and Tangchonlatip, K. (2005). Gendered Migrant Social Capital: Evidence from Thailand. *Social Forces, Vol. 84, No.1.*, pp. 225-253.

Curran, S. R. and Rivero-Fuentes, E. (2003). Engendering Migrant Networks: The Case of Mexican Migration. *Demography, Vol. 40, No. 2. (May, 2003),* pp. 289-307.

Curran, S.R. and Saguy, A.C. (2001). Migration and Cultural Change: A Role for Gender and Social Network?. *Journal for International Women's Studies. Vol. 2, No.3,* pp.54-77.

DaVanzo, J. (1983). Repeat Migration in the United States: Who Moves Back and Who Moves On?. *Review of Economics and Statistics, November 1983.*

Delechat, C. (2001). International Migration Dynamics: The Role of Experience and Social Networks. *Labour Vol. 15, No. 3,* pp. 457-486

Deshingkar, P. (2006). Internal migration, poverty and development in Asia: Including the excluded. *IDS Bulletin, Vol. 37, No. 3,* pp.88-100, Institute of Development Studies

Elrick, T. (2005). Migration Decision Making and Social Networks. EU Marie Curie Excellence Project, KnowMig Working Paper

Espinosa, K. and Massey, D. (1999). Undocumented Migration and the Quantity and Quality of Social Capital. *Migration and Transnational Social Spaces,* Ed. Ludger Pries. Singapore: Ashgate. pp. 106-37.

Fawcett, JT. (1989). Networks, Linkages, and Migration Systems. *International Migration Review Vol. 23,* pp.671-80

Fuller, T., Paul, L., Peerasit, K. (1985). Towards migration management: a field experiment in Thailand. *Economic Development and Cultural Change, Vol. 33, No. 3,* pp. 601-621.

Goldscheider, C. (1987). Migration and social structure: analytic issues and comparative perspectives in developing nations. *Sociological Forum, Vol. 2, No. 4, Fall 1987*. pp. 674-96. Ithaca, New York. In Eng.

Goldstein, S., Goldstein, A., (1986). Migration in Thailand: A twenty-five-year review. *Papers of the East-West Population Institute, Number 100.* Honolulu: East-West Center.

Guest, P. (2003). Bridging the Gap: Internal Migration in Asia. Paper prepared for Conference on African Migration in Comparative Perspective, Johannesburg, South Africa, 4-7, June.

Guest, P. (1999). Mobility Transitions within a Global System: Migration in the ESCAP Region. *Asia-Pacific Population Journal, Vol. 14, No. 4,* pp. 57-72.

Guest, P. (1994). The impact of population change on the growth of mega-cities. *Asia-Pacific Population Journal, Vol. 9, No. 1:* pp.37-56.

Guest, P., Chamratrithirong, A., Archavanitkul, K., Piriyathamwong, N., Richter, K., (1994). Internal Migration in Thailand. *Asia and Pacific Migration Journal, Vol.3, No.4,* pp. 531-545.

Guzman, M. G., Haslag, J. H., Orrenius, P. M (2004). Accounting for Fluctuations in Social Network Usage and Migration Dynamics. Working Paper 0402, Federal Reserve Bank of Dallas

Hugo, G. (1981). Village-Community Ties, Village Norms, and Ethnic and Social Networks: A Review of Evidence from the Third World. In: De Jong, Gordon F. and Robert W. Gardner (eds): *Migration Decision Making. Multidisciplinary approaches to Micro level Studies in Development and Developing Countries*. Pergamon Press: New York: pp.186-224

International Organization for Migration (IOM), (2008). Regional Thematic Working Group on International Migration including Human Trafficking, Situation Report on International Migration in East and South-East Asia. Regional Office for Southeast Asia, Bangkok, Thailand.

International Organization for Migration (IOM), (2005). International Migration Trends: Facts and Figures. WORLD MIGRATION REPORT 2005.

IPSR(2006). *Report of Round 5 Census (2004).* Institute of Population and social Research, University of Mahidol, Salaya, Nakhonpathorm 73170

IPSR(2005). *Report of Round 4 Census (2003).* Institute of Population and social Research, University of Mahidol, Salaya, Nakhonpathorm 73170

IPSR (2004). *Report of Round 3 Census (2002).* Institute of Population and social Research, University of Mahidol, Salaya, Nakhonpathorm 73170

IPSR (2003). *Report of Round 2 Census (2001).* Institute of Population and social Research, University of Mahidol, Salaya, Nakhonpathorm 73170

IPSR (20062). *Report of Round 1 Census (2000).* Institute of Population and social Research, University of Mahidol, Salaya, Nakhonpathorm 73170

Jackson, M. O. and Calvo-Armengol, A. (2002). Social Networks and Resulting Patterns and Dynamics of Employment and Wages. Working Papers 1149, California Institute of Technology, Division of the Humanities and Social Sciences.

Kanaiaupuni, Shawn M., (2000). Reframing the Migration Question: An Analysis of Men, Women, and Gender in Mexico. *Social Forces Vol. 78, No. 4,* pp.1311-48.

Karan, A. K (2003). Changing Pattern of Migration from Rural Bihar. *Migrant Labour and Human Rights in India*. Kanishka Publishers, New Delhi.

Kuhn, R.S. (2005). Community or Connections? A Social Networks Approach to Chain Migration. Population Association of America 2006 Annual Meeting Program

Lee, E. S., (1966). A Theory of Migration. University of Pennsylvania, *Demography Vol. 3, No.11,* pp. 47-57.

Levine, C. (1990). AIDS and Changing Concepts of Family. *The Milbank Quarterly 68* , Suppl. 1, 33-57.

Lewis, G. J. (1982). Human migration: a geographical perspective. London: Croom Helm

Massey, D. S., Arango, J., Hugo, G., Koucouci, A., Pelligrino, A.,Taylor, JE. (1998). *Worlds in Motion. Understanding International Migration at the End of the Millennium (International Studies in Demography*. Oxford: Clarendon Press.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, Taylor, J. E., (1994). An Evaluation of International Migration Theory: The North American Case. *Population and Development Review, Vol. 20, No. 4,* pp.699-752.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., Taylor, J. E.,(1993). Theories of International Migration: A Review and Appraisal. *Population and Development Review, Vol. 19, No. 3,* pp. 431-466.

Massey, D. S. (1990). Social Structure, Household Strategies, and the Cumulative Causation of Migration. *Population Index, Vol. 56, No. 1,* pp. 3-26.

Massey, D. S. (1988). Economic Development and International Migration in Comparative Perspective. *Population and Development Review, Vol. 14,* No. 3, pp. 383-413.

Massey, D. S. and Palloni, A. (1992). Studying Network Migration with Multistate Hazards Models. Working Paper.

Mckenzie, D. and Rapoport, H. (2006). Network effects and the Dynamic of Migration and Inequality: Theory and Evidence from Mexico. *Journal of Development Economics, Vol. 84 (2007)*, pp. 1-24.

Mouw, T. (2004). The Use of Social Networks among Hispanic Workers: An Indirect Test of the Effect of Social Capital. Paper presented at the Population Studies Center Colloquium Series at University of Pennsylvania. November 1st, 2004

Munshi, K. (2003). Networks in the Modern Economy: Mexican Migrants in the US Labor Market. *Quarterly Journal of Economics.118, No.2,* pp. 549-599.

Myrdal, G. (1957). *Rich Lands and Poor*. New York, N.Y. Harper and Row.

National Statistical Office (NSO), (1993). Migration, 1990 Population and Housing Census. Subject Report No.1, Bangkok: NSO. Retrieved from http://web.nso.go.th/eng/stat/report/abpopn1.htm

Osaki, K., (1999). Economic interactions of migrants and their households of origin: Are women more reli-able supporters?. *Asian and Pacific Migration Journal, 1999, Vol. 8, No. 4*: pp. 447-471.

Piriyakul, M. (2006). Determinants of Internal Migration Flows in Thailand. Department of Statistics, Ramkhamheang University, Bangkok, Thailand. Retrieved from www.**ru.ac.th**/news/mov1.doc

Ravenstein, E. G., (1885). The Laws of Migration. *Journal of the Royal Statistical Society of London, Vol. 48, No.2,* pp. 167-235.

Ravenstein, E. G., (1889). The Laws of Migration. *Journal of the Royal Statistical Society, Vol. 52. No.2,* pp. 241-301.

Reed, H. E., Andrzejewski, C. S. and White, M. J. (2005). An Event History Analysis of Internal Migration in Ghana: Determinants of interregional Mobility Among Residents of Coastal Central Region. Paper presented at the XXV International Population Conference of the International Union for the Scientific Study of Population (IUSSP), July 18-23, Tours, France.

Ritchey, P. (1976). Explanations of migration. In Annual review of sociology. Ed.J. C. Alex Inkeles, and Neil Smelser, Palo Alto.2.

Richter, K., Guest, P., Boonchalaksi, W., Piriyathamwong, N., Ogena, N. B., (1997). *Report of the Northeastern Follow-Up to the National Migration Survey, Migration and the Rural Family: Sources of Support and Strain in a Mobile Society*. Institute for Population and Social Research publication, No.190, Mahidol University, Bangkok.

Rochford, J. (2006). The Impact of Social Networks and Human Capital on Puerto Rican and Dominican Migrants' United States Destination Selections. Paper Presented at the Population Association of America 2006 Annual Meeting, March 30-April 1, 2006.

Sawangdee, Y., (1995). *Multi-level Analysis of Single Adult Temporary Migrant's Destination: A Case Study from Nang Rong Thailand*. Unpublished M.A. Dissertation, The University of North Carolina at Chapel Hill.

Sawangdee, Y., (1997). *Migration Chains and Path: Consequences for Migration and Children's Living Arrangements*. Unpublished Ph.D. Dissertation, The University of North Carolina at Chapel Hill.

Silver, A. (2006). Families Across Borders: The Effects of Migration on Family Members Remaining at Home. University of North Carolina at Chapel Hill, January 18, 2006.
Retrieved from http://paa2006.princeton.edu/download.aspx?submissionId

Soldo, B ., Wolf, D. and Agree, E. (1986). Family, household and care arrangement of Disable older women. Paper presented at the annual meeting of Gerontological Society of America, Chicago.

Suwee, W. (2002). Utilization of the 2000 Population and Housing Census of Thailand. Paper presented in The 20th Population Census Conference, Ulaanbaatar, Mongolia, 19 -21 June 2002.

Tangchonlatip, K. (2005). Gender Differentials in Migration To Bangkok. Ph.D (Demography) Dissertation, Institute of Population and Social Research, Mahidol University, Nakhon Pathom, Thailand.

Taylor, J. E.(1986). Differential Migration, Networks, Information, and Risk. Research in Human Capital and Development. *Migration, Human Capital and Development 4:*.147–171.

Todaro, M. P., (1976). Internal Migration in Developing Countries. Geneva, International Labour Organization.

Todaro, M. P., (1980). Internal Migration in Developing Countries: A Survey. In *Population and Economic Change in Developing Countries*. ed. Richard A. Easterlin, University of Chicago Press, London and Chicago, pp**.** 361 - 402.

UNFPA (2004). International Migration and Development, Key issues for the High-Level Dialogue 2006.

United Nations (UN), (1993). *Internal Migration of Women in Developing Countries: Proceedings of the United Nations Expert Meeting on the Feminization of Internal Migration*. Department of Economic and Social Information and Policy Analysis New York: United Nations, 1993.

United Nations (UN), (2003). *Approaches to Diversity of International Migration, World Migration*. 2003.

Waggoner, A., (2004). Making Their Own Luck: Educational Differences in the Migration Responses of Young Workers to Local Labor Market Conditions. Harvard University, JOB MARKET PAPER.

Wellman, B. and Wortley, S. (1990). Different Strokes from different folks: Community Ties And Social support. *American Journal of Sociology*, *Vol. 96, No. 3*, pp.558–588.

Zohry, A., (2002). Rural-to-Urban Labor Migration: A Study of Upper Egyptian Laborers in Cairo. Unpublished DPhil. thesis, University of Sussex.

BIOGRAPHY

NAME: Ms. Khaing Khaing Soe

DATE OF BIRTH: 7th June, 1971

PLACE OF BIRTH: Kayan, Yangon Division, Myanmar

INSTITUTIONS ATTENDED: University of Yangon, 1988-1994
Bechlor of Science (Mathematics)
Institute of Population Science, Mumbai, India, 1996-97
Diploma in Population Studies
University of Computer Science and Technology, 1995-1996, 1997-1998
Diploma in Computer Sciences
University of Economics, 2001-2002
Diploma in Development Studies
Institute for Population and Social Research, Mahidol University, Thailand, 2004-05
Master of Arts (Population and Reproductive Health Research)
Institute for Population and Social Research, Mahidol University, Thailand, 2006-09
Doctor of Philosophy (Demography)

SCHOLARSHIP: Welcome Trust/IPSR Scholarship

HOME ADDRESS: A-10, Banyar Oo street, Yonedawkwet, Bagosu Ward, Thanlyin, Myanmar
95-56-21016, 95-950-59060

EMPLOYMENT ADDRESS: Staff Officer, Department of Population, Ministry of Immigration and Population, Yangon, Myanmar
95-1-387137