The Relationship between Migration and Birth Spacing: Evidence from Nang Rong District, Buriram Province, Thailand

Chongthawonsatid S., Entwisle B., Isarabhakdi P. and Jampaklay A.

The total fertility rate of the Thai population has been declining rapidly, from 6.3 in the early 1960s to below replacement, approximately 1.6 in 2006 (National Statistical Office, 1964; Mahidol Population Gazette, 2006). Declines in fertility occurred largely due to factors related to social and economic development as well as the widespread acceptance of family planning, organized by the national family planning program and non-governmental providers of family planning services (Knodel, Chamratrithirong and Debavalya, 1987). As these changes occurred, migration continued to increase at a rapid pace, particularly among Northeastern residents. Although fertility is low in Thailand, fertility behavior may differ across migrants and non-migrants, especially with respect to the timing of births.

Previous research in Thailand found that migration has positive or negative effects on fertility (Goldstein, 1973; Goldstein and Goldstein, 1981; Goldstein, Goldstein and Limanonda, 1981; Goldstein and Goldstein, 1983; National Statistical Office, 1990; Hervitz, 1985; White, Moreno and Guo, 1995; Lindstrom and Saucedo, 2002; Kulu, 2004; Chattopadhyay and White, 2005; Edmeades, 2006). Effects of migration on fertility are not conclusive due to research design, sample selection, data analysis, definition of migration, and differences in the measurement of migration or fertility. Does migration have an effect on timing of birth? Can this effect be explained by the selectivity, disruption, and adaptation effects of migration on fertility? In most studies, macro level analysis based on census and surveys usually measures cumulative fertility using children ever born (CEB). Therefore, it can not directly assess the timing of birth in relation to migration except for providing information regarding the fertility behavior of women in the years just before and after migration. This study attempts to solve the problems of temporal ordering by using event history of migration and fertility. This study uses longitudinal data and event history analysis. Retrospective event history data are essential in examining influences of both long-term and short-term migration. The study of changes in fertility in relation to migration requires the use of both fertility histories and migration histories because migration histories show temporary migration or non-migration exactly through life course events and fertility histories show the timing of birth. The study can also capture other related variables that may change over time. Specifically, this study explores differences in the timing of birth spacing between migrants and non-migrants, comparing at place of origin.

This study attempts to investigate the migration effect on fertility through individual characteristics such as education and occupation, while also looking at the selectivity effect. Occupation at place of destination indicates an adaptation effect. Disruption and adaptation effects may be visible in terms of cumulative fertility. Household characteristics, for example household wealth and amount of land owned, indicate family background and socioeconomic status, which is used as a proxy for social class of an individual's original family. Community characteristics such as distance to health center, distance to hospital and primary school in the village, indicating development and school accessibility, may also be relevant. Likewise, distance to health center and distance to hospital, indicating accessibility of health care or of contraception services, are controlled.

The aim of the study is to examine the relationship between migration and birth spacing. We hypothesize that migrants have longer birth intervals than non-migrants and fertility behavior differences between migrants and non-migrants can be explained in terms of selectivity, disruption, and adaptation effects.

Data

This study uses secondary data from the Nang Rong Projects carried out by the Institute for Population and Social Research (IPSR), Mahidol University, Thailand, and the Carolina Population Center, University of North Carolina at Chapel Hill. The Nang Rong project is a longitudinal study that documents demographic and sociological changes occurring over time in an economically and socially changing environment in Nang Rong District, Buriram, Thailand. The project began in 1984, with follow-ups in 1994 and again in 2000. In 1984, the census was conducted in 51 villages. The number of villages expanded to 76 villages in 1994 and to 92 villages in 2000 due to the villages being divided for administrative purposes. Follow-up surveys of migrants were conducted in 1994 and 2000 in 22 villages (split to 32 villages in 1994 and to 40 villages in 2000). Migrants were followed when they moved from Nang Rong to 4 urban destinations, i.e. Bangkok and its peripheries (Samut Prakan, Samut Sakhon, Nakhon Pathom, Nonthaburi, and Patumtani), the Eastern Seaboard (Rayong, Chonburi, Chachoengsao), Nakhon Ratchasima (Korat), and Buriram provinces.

This study uses multilevel data including individual, household, and community data collected in the household, migrant follow-up, and community surveys. The household and migrant follow-up surveys have similar questionnaires and both include the life history calendar data and household data, which were merged together. The life history data, collected from respondents aged 18-41 years, have information about migration and fertility history for individuals since age 13 to current age at the time of the survey. The time varying data are a continuous record from age 13 to current age, though only information starting from age at marriage to current age in the year 2000 was used. The data collected include not only basic demographic data but also migration experiences, fertility behavior and socioeconomic status such as education and occupation changing year-by-year. Individual characteristics are based on information varying year-by-year, while household and community characteristics are based on data collected in the 1984 and 1994 waves of data collection, which is time-varying, though not year-by-year.

The definition of migration used in this study is the movement away from Nang Rong district for at least 2 months. Two measures of migration are used. The first measure of migration is migration experience including ever moved or never moved. A person is considered ever moved if she/he ever moved away from Nang Rong district for at least 2 months, and is considered never moved if she/he never moved from Nang Rong district for 2 or more months since age 13. Change of residence within Nang Rong district is not considered to be migration in this study. The second measure of migration is migration status. Migration status is divided into three categories, including non-migrant, return migrant and current migrant. Non-migrants are persons who never moved from Nang Rong district since age 13, current migrants are persons who are currently residing outside Nang Rong district in a given year, and return migrants are persons who had ever moved from Nang Rong district for at least 2 months and returned to live in Nang Rong district in a given year.

Analytic Approach

This study is different from previous studies regarding methodology and analytical method. The analytical method uses one type of duration model, which is called the Prentice, Williams and Petersen (PWP model) of repeated events. Because a woman may experience more than one birth during her reproductive life, we choose a statistical model proposed by PWP, or gap time model, to analyze our data. We use the PWP proportional intensity regression model to examine the factors associated with recurrent births to women. This method allows us to compute "birth spacing" using event history data. The PWP model is a generalization of the well known Cox proportional hazards model to analyze recurrent events. This model is suitable for independent within-subject events. In order to take into account intra-subject correlation due to the repeated events for individuals, we obtain robust standard errors for the estimated model parameters (Box-Steffensmeier and Zorn, 2002; Ezell, Land and Cohen, 2003).

Summary of the PWP Model*

Risk set for event k at time t ($\boldsymbol{k}$= birth)	All subjects that have experienced event k-1, and haven't experienced event k, at time t
Time scale	Duration since previous event
Robust standard errors	Yes
Stratification by event	Yes
Hazard	$\lambda_K(t)dt=\text{Prob}\ \{t<T_k<t+dt \,/\, T_{k-1}<t, T_k \geq t\}$ $\lambda_K(t)= \lambda_{0k}(t-t_{k-1})\ e^{\beta kzk(t)}$

Note: * Adapted from Box-Steffensmeier J.M., & Zorn, C. 2002

Descriptive Analysis

The total observation of married women is 10,944 person-years (A total of 1,163 persons; 327 who never moved and 836 who ever moved, including current and return migrants). The average education level of women is primary school level. More than fifty percent of the women work in agriculture. The average age at first marriage is twenty years old, while age at first marriage of migrants is slightly higher than for non-migrants. Regarding fertility behavior, the average number of births is 1.7 children per woman. Migrants have lower fertility than non-migrants, which equals 1.6 and 2.0 children per woman, respectively. The cumulative fertility of migrants is lower than that of non-migrants classified by duration of marriage (Figure 1).

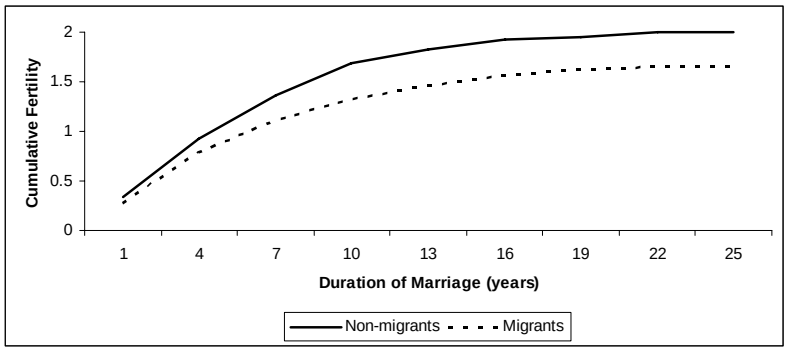

Figure 1 Cumulative Fertility Classified by Duration of Marriage and Migration Status

Multivariate Analysis

We examined birth spacing information to determine the proportion of childless women by duration of marriage (labeled as survival function of birth). Because the

PWP model assumes that the survival function depends on birth spacing (marriage to the first birth, the first to second birth, the second to third birth, and so on). The results show that migrants have longer birth spacing than non-migrants (Table 1). After 8 years of marriage, 11% of migrants had never given the first birth, whereas at the same time only 4.7% of non-migrants had never given the first birth. The median time between marriage and the first birth is 1.26 years for non-migrants and 1.73 years for migrants. Among those women who had a first birth, 28% of migrants did not have a second birth after 13 years since the first birth, while only 16% of non-migrants had never given the second birth at the same time. The median time between the first and the second birth is 4.24 years for non-migrants and 5.75 years for migrants. Among those women who had a second birth, 52% of migrants did not have a third birth after 15 years since the second birth, while only 42% of non-migrants had never given the third birth at the same time. The median time between the second and the third birth for non-migrants is 10.35 years, but for migrants the figure was not calculated because there were so few cases. Among those women who had a third birth, 55% of migrants did not have a fourth birth after 13 years since their third birth. At the same time 58% of non-migrants had never given the fourth birth. More than half of the women had not experienced the fourth birth in both migrants and non-migrants.

Table 1 Survival Function of Birth (The Proportion of Childless Women) Classified by Duration of Marriage and Migration Status

Duration of marriage (Years)	**Marriage to the first birth**		**The first to the second birth**		**The second to the third birth**		**The third to the fourth birth**	
	Never moved	Ever moved	Never moved	Ever moved	Never moved	Ever moved	Never moved	Ever moved
0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	0.5651	0.6801	0.9661	0.9745	0.9867	0.9854	0.9885	0.9853
2	0.3191	0.4326	0.8035	0.8671	0.9111	0.9413	0.8665	0.9535
3	0.1868	0.3022	0.6654	0.7757	0.8236	0.8741	0.8162	0.9201
4	0.1316	0.1967	0.5303	0.6662	0.7297	0.8337	0.8031	0.8649
5	0.1081	0.1573	0.4048	0.5539	0.6826	0.8156	0.7754	0.8205
6	0.0757	0.1281	0.3229	0.4823	0.6241	0.7819	0.7417	0.7749
7	0.0631	0.1127	0.2775	0.4229	0.5767	0.6996	0.7216	0.7472
8	0.0473	0.1127	0.2534	0.3978	0.5323	0.6996	0.6765	0.7472
9	0.0473	0.1127	0.1882	0.3779	0.5114	0.6529	0.6765	0.7472
10	0.0473	0.1127	0.1684	0.3294	0.5114	0.6112	0.6483	0.6405
11	0.0473	0.1127	0.1564	0.3059	0.4804	0.5821	0.6483	0.6405
12	0.0473	0.1127	0.1564	0.2913	0.4804	0.5634	0.6483	0.5490
13	0.0473	0.1127	0.1564	0.2751	0.4204	0.5634	0.5835	0.5490
14	0.0473	0.1127	0.1564	0.2751	0.4204	0.5634	0.5835	0.5490
15	0.0473	0.1127	0.1564	0.2751	0.4204	0.5164	0.5835	0.5490

Table 2 shows models predicting the effects of having ever migrated on the hazard of giving birth controlling for selected groups of factors. Table 3 shows

models predicting the effects of migration status on the hazard of giving birth controlling for selected groups of factors. Both tables use three analytical models: model 1 predicts the effect of migration experience on timing of birth; model 2 includes socioeconomic status (education, and occupation variables) to test their selectivity of migration at place of origin and adaptation at place of destination, controlling for individual characteristics, and model 3 takes into account household and community characteristics. All models include age at first marriage and year of marriage as control factors. Year of marriage is control variable due to the large of difference in overall average fertility from the year 1976 to 2000.

Migration Experiences

The findings show that the likelihood of having a second birth decreased by 27% for women who ever moved compared to non-migrants (Table 2, Model 1). This means that the interval between the first birth and second birth is longer for women who ever moved compared to non-migrants. Similarly, the likelihood of having a third birth decreased by 31% for women who ever moved compared to non-migrants. This indicates that the interval between the second and the third birth is longer for women who ever moved. The chance of having a first birth decreased by 32% for current migrants compared to non-migrants (Table 3, Model 1). This means that the interval between marriage and the first birth is longer for current migrants. Similarly, the chance of having a second birth decreased by 39% for current migrants compared to non-migrants. The interval between the first and the second birth is longer for current migrants compared to non-migrants. The likelihood of having a third birth decreased by 47% for current migrants compared to non-migrants. This means that the interval between the second and the third birth is longer for current migrants. However, the interval time between marriage and the first birth is shorter for return migrants compared to non-migrants. Return migrants are more likely to have a first birth than non-migrants because they are more likely to give birth at home of origin or when they return to the same environment. They have less incentive to change their behavior in short term migration (Edmeades, 2006).

This study supports the hypotheses regarding the relationship between migration and fertility. The longer birth spacing of migrants compared to non-migrants could be explained in terms of selectivity, disruption, and adaptation effects. Migration process and migration experiences may encourage the separation of spouses or adaptation to new environments resulting in longer time intervals between births compared to non-migration. The results show that migration affects fertility due to its relationship with education, occupation, household and community factors (Tables 2 and 3, Models 2 and 3). Some studies did not clearly explain the relationship between migration and fertility in terms of adaptation and disruption hypothesis (Goldstein, 1973; Goldstein and Goldstein, 1981; Goldstein, Goldstein and Limanonda, 1981; Chamratrithirong, Prasartkul, Tongthai and Guest, 1979; Edmeades, 2006). It is complicated to clearly examine the relationship between migration and fertility. The relationship between migration and fertility in terms of selectivity, disruption and adaptation effects are not mutually exclusive. It is likely that a strong selectivity effect may facilitate adaptation. On the other hand, disruption could lead couples to have low fertility by spacing births or lowering the age at which childbearing is stopped (Chattopadhyay and White, 2005). Migration is more related to the family formation process than is explained by these hypotheses (Singley and Landale, 1998; Edmeades, 2006).

Edmeades (2006) studied rural to urban migration and fertility in Nang Rong. He found little evidence of significant differences between short and long term migration effects on fertility. He used a prospective design and life history information following the years 1994 to 2000. From 1994 to 2000, rural and urban areas were less different and there was a greater probability of having one or two births. My study looks at effects over a longer period, both in the life course of individuals and historically, contributing to determining subsequent birth differences, especially the third and the fourth births. My study uses a retrospective cohort design (retrospective data from 1972-2000, 28 years of followed up data) and longitudinal data of migration and fertility histories, including only married women who have a risk of having birth, and performs the analysis using duration models for repeated events (correlated events), looking at timing of birth and birth spacing. The definitions of migration are also different. Non-migrants are defined as persons who never moved from Nang Rong district since age 13 to current age in 2000, and migration status is divided into three groups; non-migrants, return migrants and current migrants.

Education and Occupation

Education and occupation are strong influences on fertility (Tables 2 and 3, Model 2). Education and occupation variables were added into model 2 contributing to the greatly lowered significance of migration variables. This means that migration affects fertility due to its relationship with education and occupation. Selectivity explains migration's effect on fertility. Each year of education increase corresponds to a decrease in the chance of having a second birth. The interval between the third and the fourth birth is shorter for unemployed women compared to women who worked in agriculture. The interval between marriage and the first birth is longer for women who worked in factories and services compared to women who worked in agriculture. The interval between the first and the second birth is longer for women who worked in factories and services compared to women who worked in agriculture.

Theory explains the effect education on fertility. Education facilitates women to prefer a small family size and to use contraception more than non-educated women. Education tends to raise the perceived cost of children and to reduce the economic returns from them as well as to raise the cost of time devoted to child care (Cochrane, 1979; Panopoulou and Tsakloglou, 1999). Usually women are likely to have a first birth shortly after being married, and after that they may delay their second birth depending on suitability, socioeconomic conditions, or individual characteristics. The interval between first and second birth is longer for highly educated women because of effective contraceptive use, continuous education, and / or child care concerns. They may prefer to have low fertility so they need to space birth after the first birth or wait for the first child to grow up. This corresponds with Eini-Zinab, and Agha' study (2005), which showed that differences in socio-demographic characteristics produce different hazard ratios of giving birth to the second child. Occupation is associated with education, indicating that women will have a greater ability to make decisions to stop or space fertility when working in some occupations. Employed women schedule children later in life and have fewer children compared to unemployed women, controlling for education (Kalwij, 2000). Fertility is found to be negatively and significantly related to female labor force participation for women aged 20-49 (Clark, York and Anker, 2003). Type of work has a strong effect on timing of birth, particularly factory or services jobs, which facilitate a longer time until first and second birth among migrants compared with women who worked in agriculture. One reason is that migrants delay childbearing in order to take advantage of the

opportunities available to them in the urban workforce. Some women thought that pregnancy and having birth may interrupt or interfere with work, especially some services jobs. Single and young women are preferred for jobs in factories (worker or unskilled labour) and services (some restaurants or private sectors). Some women are married but they do not want to become pregnant and give birth. Another reason is that migrants may have economic constraints or child care problems. Children were sent back to grandparents due to the difficulty the parents face with child care and living space. They have to work long hours, and most of them had to share a room with other people. It is more affordable to leave children in rural areas, where school fees and kin-based childcare is cheaper (Piotrowski, 2006).

Household and Community

Household and community variables have a smaller impact on fertility than individual variables (Tables 2 and 3, Model 3). When the household and community factors were added as control variables in model 3, education and occupation variables are still strongly significant. The interval between the second and third birth is longer for women who ever moved and current migrants. Especially for return migrants, time between marriage and the first birth is shorter than for non-migrants. This means that in the short period of time after marriage, migrants are more likely to give birth at home of origin. The likelihood of having a second birth decreased for middle wealth compared to poor wealth. The chance of having a third birth increased for rich wealth compared to poor wealth. Each rai increase in amount of land owned corresponds to an increase in the chance of having a first, second, and fourth birth at any given time. Rich households have an increased likelihood of giving the third birth compared to poor households because of socioeconomic, family or child-care support. This contrast to Mace' study (1998), which showed that wealthy families frequently have a small number of children. The timing of fertility can affect optimal consumption decisions (Scholz, 2006). Household socioeconomic characteristics have always influenced individual fertility by altering the economic value of children and the subsequent decision-making about having birth. Regarding the community factor, only the primary school in the village variable is statistically significantly related to timing of birth, which shows a positive impact on giving birth. Having a primary school in the village facilitates enrollment in school. The interval between first and second birth is shorter for women who lived in villages with a primary school.

Table 2 Models predicting the effects of having ever migrated on the hazard of giving birth controlling for selected groups of factors

Variable	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Age at marriage	0.109	0.132*	0.125
Age at marriage^2	-0.003	-0.003*	-0.003*
Year of marriage (ref. 1990-2000)			
1976-1989	0.486***	0.382***	0.365***
Ever moved (ref. never moved)			
First birth	-0.144	0.116	0.114
Second birth	-0.312***	-0.109	-0.125
Third birth	-0.369*	-0.303	-0.399*
Fourth birth	-0.115	-0.140	-0.137
Enrolled in school (ref. not enrolled)			
First birth		0.123	0.106
Second birth		0.256	0.149
Third birth		-0.365	-0.430
Fourth birth		1.736	1.465
Years of education			
First birth		0.001	-0.004
Second birth		-0.088**	-0.095**
Third birth		-0.083	-0.080
Fourth birth		-0.270	-0.228
Occupation (ref. agriculture)			
Not work			
First birth		0.120	0.134
Second birth		0.147	0.193
Third birth		0.111	0.219
Fourth birth		1.182***	1.132*
Factory			
First birth		-0.650***	-0.611***
Second birth		-0.702***	-0.686***
Third birth		-0.131	-0.077
Fourth birth		0.608	0.731
Construction			
First birth		-0.477**	-0.437**
Services			
First birth		-0.827***	-0.782***
Second birth		-0.875**	-0.852**
Third birth		-1.361	-1.303
Household Wealth (ref. poor)			
Middle			
First birth			0.177
Second birth			-0.370*
Third birth			-0.071
Fourth birth			-0.226
Rich			
First birth			0.123
Second birth			0.207
Third birth			0.574*
Fourth birth			-0.282

Table 2 Models predicting the effects of having ever migrated on the hazard of giving birth controlling for selected groups of factors (cont.)

Variable	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Amount of land owned (Rai)			
First birth			0.049*
Second birth			0.050*
Third birth			0.041
Fourth birth			0.052*
Distance to health center (km)			
First birth			0.018
Second birth			0.015
Third birth			0.003
Fourth birth			-0.030
Distance to hospital (km)			
First birth			0.002
Second birth			-0.011
Third birth			0.012
Fourth birth			0.018
Primary school in village (ref. no primary school in village)			
First birth			-0.130
Second birth			0.269*
Third birth			0.267
Fourth birth			0.517
Log likelihood	-8576	-8520	-8498
N	10,944	10,944	10,944

Note: *** p<0.001, ** p<0.01, * p<0.05

Table 3 Models predicting the effects of migration status on the hazard of giving birth controlling for selected groups of factors

Variable	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Age at marriage	0.127*	0.138*	0.131*
Age at marriage^2	-0.003*	-0.003*	-0.003*
Year of marriage (ref. 1990-2000)			
1976-1989	0.454***	0.391***	0.375***
Migration Status (ref.: non-migrants)			
Current migrants			
First birth	-0.388***	-0.142	-0.143
Second birth	-0.502***	-0.164	-0.170
Third birth	-0.629**	-0.582*	-0.672**
Fourth birth	0.006	-0.082	-0.081
Return migrants			
First birth	0.247*	0.236*	0.235*
Second birth	-0.112	-0.076	-0.096
Third birth	-0.167	-0.156	-0.255
Fourth birth	-0.226	-0.186	-0.172
Enrolled in school (ref. not enrolled)			
First birth		0.118	0.100
Second birth		0.271	0.161
Third birth		-0.422	-0.503
Fourth birth		1.747	1.485
Years of education			
First birth		-0.002	-0.006
Second birth		-0.088**	-0.094**
Third birth		-0.081	-0.080
Fourth birth		-0.272	-0.227
Occupation (ref. agriculture)			
Not work			
First birth		0.254	0.271
Second birth		0.183	0.222
Third birth		0.285	0.375
Fourth birth		1.152**	1.100*
Factory			
First birth		-0.384*	-0.347*
Second birth		-0.648**	-0.641**
Third birth		0.105	0.164
Fourth birth		0.591	0.702
Construction			
First birth		-0.275	-0.232
Services			
First birth		-0.557*	-0.514*
Second birth		-0.820*	-0.805*
Third birth		-1.081	-1.026
Household Wealth (ref. poor)			
Middle			
First birth			0.151
Second birth			-0.368*
Third birth			-0.100
Fourth birth			-0.224

Table 3 Models predicting the effects of migration status on the hazard of giving birth controlling for selected groups of factors (cont.)

Variable	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Rich			
First birth			0.082
Second birth			0.209
Third birth			0.589*
Fourth birth			-0.271
Amount of land owned (Rai)			
First birth			0.049*
Second birth			0.050*
Third birth			0.042
Fourth birth			0.052*
Distance to health center (km)			
First birth			0.019
Second birth			0.014
Third birth			0.002
Fourth birth			-0.030
Distance to hospital (km)			
First birth			0.001
Second birth			-0.011
Third birth			0.011
Fourth birth			0.019
Primary school in village (ref. no primary school in village)			
First birth			-0.125
Second birth			0.269*
Third birth			0.270
Fourth birth			0.485
Log likelihood	-8547	-8514	-8492
N	10,944	10,944	10,944

Note: *** p<0.001, ** p<0.01, * p<0.05

Conclusion

The results show significant fertility behavior differences between migrants and non-migrants, particularly longer birth spacing for migrants. The findings demonstrate that migrants are less likely to have a birth compared to non-migrants. The statistical models show that women who ever moved and current migrants have significantly longer birth spacing, controlling for age at marriage and years of marriage. Migration affects fertility due to its relationship with education and occupation. This shows migrants' selectivity characteristics and adaptation at place of destination. The effects of not only education influences the timing of second birth for migrants compared to non-migrants but occupation also affects the first and second birth for women who worked in factories and services compared to women who worked in agriculture. The chance of having the first, second and the third birth decreased for current migrants compared to non-migrants in model 1, but it is only significant for the third birth in models 2 and 3. This means that education, occupation, household, and community factors influence subsequent births, especially the third birth. This corresponds with Liu's study (1993), which found that socioeconomic conditions have the most influence on the interval between the second and third birth. This study could explain the relationship between migration and birth spacing in terms of selectivity,

disruption, and adaptation effects. The migration process may result in longer birth spacing (Chongthawonsatid, 2007) due to the temporary separation of spouses. Approximately 15% of migrants did not live with their spouse (Piotrowski, 2006). The selectivity effect is still occurring in Thai society. Although communication and transportation in Nang Rong is convenient and people can leave in village easily, migration selectivity still plays a role. Urbanization and unequal development in Thailand between rural and urban areas encourage people to leave their villages. Nang Rong is one of many typical rural areas that have poverty, job scarcity, and changes that motivate young people to leave their rural villages to search for better-paid jobs in urban areas and in factories.

This study attempts to explain the relationship between migration and fertility in Nang Rong district and focuses on rural to urban migration. The results may be generalized for other regions of rural to urban migration. Rural to rural migration, sequencing of migration, labor force experience, and socialization effect of migrants are also important issues that should be focused on in the future. Education and occupation factors are highly related to fertility behavior, as these two variables are the most influential factors that could be changed through programs and policies. The results help explain the low fertility situation in Thailand and that the below-replacement fertility trend will continue for a long time. Further research should focus on the impact of low fertility.

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