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The Effects of Family Life Cycle, Family Ties and Distance on Migration: Micro Evidence from Finland in 1994

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ABSTRACT. This paper examines the factors underlying family migration. Based on a 1994 sample of stable Finnish families, both short- and long-distance migration is investigated. The empirical analysis is carried out with the multinomial logit. The study provides some evidence in favour of the hypothesised differences between short- and long-distance migration. Despite the distance, the family life cycle greatly influences family migration. The results indicate that migration takes place due to demands of the husband's career, resulting the wives to be the tied migrants. Two-earner families are less migratory, and in that sense the husbands are tied stayers. The study concludes that more indebted investigation of family migration is needed, and attached and unattached individuals should be inspected separately.

Keywords: family migration, family life cycle, family ties, distance

1. INTRODUCTION

Migration can be described as a movement of population from one geographical area to another. Actually, mobility has always been one of the fundamental characteristics of the human species. While unattached individuals are free to move, family relations may restrict the mobility family members, and the determinants of family migration are likely to differ from those of single migrants. Therefore, the purpose of this study is to examine the determinants of family out-migration in Finland. The family is assumed to consist of two married/cohabiting adults of opposite sexes, with or without children. Since the motives underlying different types of moves are likely to vary, distinction is made between short- and long-distance migration. Short moves occur between municipalities but within a province, whereas long moves are those between provinces¹. The present study deals with four main questions. First, what are the factors influencing family migration; second, how does the family life cycle affect migration; third, do family ties affect migration; and fourth, are there any differences between short- and long-distance migration. The empirical analysis is carried out with the multinomial logit.

Given the fact that in Finland the speed of migration has risen rapidly in conjunction with the continuing urbanisation of the country, it is no wonder that migration research has aroused considerable interest in recent years. In spite of the increasing interest in migration research, economic analyses of the motives and consequences of migration have been in short supply in Finland. Migration has been explored mainly at the macro-economic level. Only recently some Finnish researchers have investigated migration at the micro economic level, but these studies have concentrated on individual persons or workers, not on families. Furthermore, Finnish studies have investigated mainly long-distance migration, and have not been dealing especially with short-distance moves.

Earlier Finnish studies have shown that the most eager migrant in Finland is unmarried, educated, young adult (Korkiasaari, 1991; Tervo, 1997; Laakso, 1998; Tervo and

¹ In 1994, there were 19 provinces (“maakunta”) in Finland.

Ritsilä, 1998). It has been noticed that family relations affect migration (Laakso, 1998; Haapanen, 1998), and the likelihood of migration decreases with the family size (Tervo, 1997; Tervo and Ritsilä, 1998). Longer moves are noted to take place mainly for job related reasons, and housing and family reasons are proved to be important especially in shorter moves (Korkiasaari, 1991). It has been observed that most of the migrants are heading towards a few large main towns located mainly in southern Finland (Laakso, 1998). During the present decade, in-migration has become highly focused on urban areas, with even middle-sized towns experiencing negative net migration. There is a danger of cumulative causation, as both personal and regional unemployment are inducing migration (Tervo, 1997; Tervo and Ritsilä, 1998) The trend seems to be towards greater concentration of population and economic activity, which may lead to increasing disparities between areas.

Families account for about 80 % of Finnish population (Statistics Finland, 1995b), and a considerable proportion of migrants have family relations. In the presence of these relations, the decision to migrate can be very complicated as migration then affects several individuals at the same time. Hence, the characteristics of family migration cannot be revealed when migration is investigated by using persons as units. As family status has an marked effect on migration, the need for investigation of Finnish family migration is inevitable.

Previous family migration studies have proved that the family life cycle has importance in family migration decisions. In fact, age variations in migration rates are shown to largely reflect the effect of work careers and life cycle stages (Carter and Glick, 1970; Sandefur and Scott, 1981). In addition, a nearly unanimous finding is that families migrate in response to economic motivations on the part of the husband (Duncan and Perrucci, 1976; Long, 1974; Snaith, 1990; Shihadeh, 1991; Battu, Seaman and Sloane, 1998). The wife's employment considerations are found to be of minor importance (Bielby and Bielby, 1992). On the other hand, a working wife is proved to inhibit family migration (Long, 1974; Sandell, 1977; Mincer, 1978; Lichter, 1980; Holmlund, 1984). Concerning the distance over which relocation occurs, it has been noticed that strong locational ties, as well as location specific human capital discourage long-distance migration. On the other hand, higher amounts of general human capital seem

to give better ability to move over longer distances. (see Holmlund, 1984; Shields and Shields, 1993; Westerlund and Wyzan, 1993) Characteristics of areas, in turn, seem to have stronger effect on short moves, as weak local economic conditions and tighter local housing markets encourage shorter moves (Westerlund and Wyzan, 1993).

The present study shows that young, educated families are most eager to move. The family life cycle has importance in family migration decisions, and age reflects the family life cycle stages and work careers. Migration seems to take place due to demands of the husband's career, resulting the wives to be the tied migrants. Two-earner families are less migratory, and in that sense husbands of working wives are tied to certain locations. The study finds evidence in favour of the hypothesised differences between short- and long-distance migration. The results also lend support to the suggestion that there is a great danger of cumulative causation in Finland, as both personal and area unemployment influence family migration.

The study is organised so that the second section introduces the theoretical background, and browses through the most important determinants of migration. The data is described in the third section. The model and variables used are presented in the fourth section. Section five presents the empirical findings and section six concludes the study.

2. THEORETICAL BACKGROUND

2.1 The theory of family migration

The neoclassical human capital approach² suggests that individuals make investments in their human resources. When time is devoted to activities, the benefits of which accrue in the future, a human investment is being made, and human capital is being accumulated. This investment can be made by achieving additional education and training or by deciding to migrate. The human capital approach places migration in a resource allocation framework by treating migration as a means in promoting efficient

² One of the first uses of the human capital approach can be attributed to Sjaastad (1962).

resource allocation in the economy. The theory of family migration introduced in this chapter uses the human capital approach as a starting point and is mainly based on Mincer³ (1978).

As an investment migration renders returns but has also costs, both of which can include both money and non-money components. The returns of moving may include higher income in the destination, or a more pleasant social or physical environment. The costs include the direct expenses involved in moving, plus the psychic costs of changing ones environment as well as the costs derived from uncertainty. When two or more members are present in the family and the migration decision requires that all move, the decision variable is (modified from Milne 1991):

$$\begin{aligned}
 NB_{fij} &= \sum_{k=1}^n NB_{kij} & (1) \\
 &= \sum_{k=1}^n \left[\sum_{t=0}^{r_k} Y_{kjt} (1+r)^{-t} - \sum_{t=0}^{r_k} Y_{kit} (1+r)^{-t} \right] - \sum_{k=1}^n \sum_{t=0}^{r_k} M_{kt} (1+r)^{-t}
 \end{aligned}$$

where

- NB_{fij} = family's net benefits from moving from i to j, $j = 1 \dots J$
- NB_{kij} = net benefits for family member k from moving from i to j
- Y_{kjt} = earnings in the region j for family member k
- Y_{kit} = earnings in the origin region i for family member k
- M_{kt} = costs of migration for family member k
- r_k = year of retirement for family member k
- r = discount rate
- n = number of family members, $k = 1 \dots n$
- t = time.

³ In 1977 Sandell introduced his model of family migration decisions. Sandell's and Mincer's theories are equal in essence, but Mincer develops his theory a bit further. The discussion presented here draws on Mincer (1978).

Hence, the net gain of the family is the sum of personal net benefits of the members of the family. Discounting is needed to assure that all returns and costs are comparable⁴. Family migration takes place if

$$NB_{fj} > 0. \quad (2)$$

In other words, the family migrates if the sum of personal net benefits from migration is positive. From the set of possible locations, the family chooses the location that maximises the family's net benefits.

Net benefits may differ between the spouses. Firstly, the signs of the net benefits may differ. If moving is worthwhile for the family, and one spouse moves along with the other even if he or she would be better off in the current location, he or she becomes the tied mover. Conversely, if one spouse's potential loss from moving exceeds the potential gain of the other, the family does not move and the result is one tied stayer. Secondly, even if both spouses would benefit from moving, the destination, $maxNB1$, that maximises the wife's gain, need not to be the same as the one, $maxNB2$, that maximises the husband's gain. This may result in the family not moving, or moving to destination, where neither of the personal gains is maximised but the sum of both is the greatest. In this sense, both spouses are tied to some degree in family migration.

The dissimilarity in locational preferences that gives rise to the ties⁵ (i.e. $NBk < maxNBk$) might be reduced by a tendency for families to locate in large, diversified labour markets. Larger labour markets with higher number of vacancies offer a greater chance for both spouses to maximise their incomes. However, if the sum of ties is greater than the gains from family relations, family dissolves and at least one person moves.

⁴ Some have argued that the costs of migration need not to be discounted as they are usually borne immediately (see e.g. Milne 1991). However, according to my view the discounting is not harmful, so the costs should be discounted. This is important especially with the psychological costs, which can affect the migrant for many years.

⁵ A private optimum is the maximal personal gain in the absence of family ties, to be distinguished from the actual personal gain or loss, given the family decision.

2.2 The family life cycle and other determinants of migration

In order to fully understand the complicated nature of migration, it is important to realize that there are a variety of factors affecting migration. Among these are the individual's personal characteristics as age, sex, education, accumulated job skills, earnings, marital status, as well as unemployment experience and migration history (see Greenwood, 1985, for a survey; see also DaVanzo, 1978; Tervo, 1997; Tervo and Ritsilä, 1998).

Furthermore, various life-cycle considerations are underlying migration. Rossi (1955) argued that migration which takes place due to life cycle changes constitutes an important part of all geographic mobility. The family life cycle has conventionally been divided into six phases from commencement (from marriage to first birth), through expansion and contraction phases marked by the birth of subsequent children, and then the departure of adult children, to the final stage, covering the period from death of the first spouse to death of the second (see Grundy, 1992). The highest probability of moving is associated with the beginning of married life and the arrival of children. After a more stable phase, mobility again increases when the children are still in pre-school age. There tends to be a greater stability when the children are at school and the head of the family is consolidating his or her career (see Sandell, 1977; Mincer, 1978). Mobility often increases again when the children leave home and less living space is required (Cadwallader, 1992).

The characteristics of origin and destination regions can also provide an potential incentive for moving. For example, wage differentials, job opportunities, unemployment rates, the local economic structure, the conditions in land and housing markets, state and local taxes, the provision of local public services and location-specific amenities (unpolluted environment, temperature, landscape etc.) are noticed to have importance in migration decisions. (see Greenwood, 1985, for a survey)

3. DATA

The data are from the Statistic Finland longitudinal census file, which contains information collected in population and housing censuses completed with information from various official registers. Consequently, the data offer rich information on Finnish population covering the years 1970, 1975, 1980, 1985 and 1987-96. This large data set contains information on individuals' characteristics (education, occupation, socioeconomic status, economic activity, income etc) as well as on individuals' family relations (type and size of family, number and ages of children etc). Especially interesting for this study is that all persons belonging to same family can be identified⁶. Another virtue of the data is that all characteristics of both spouses can be identified. A drawback, however, is that there is no information on the motives of migration.

A basic sample⁷ was drawn from the census file, containing information of over 600 000 individuals. The data used in this study are a stratified subset of this sample. First, only adults belonging to two-adult families in 1990⁸ were selected. Second, to get family as an observation unit, men and women belonging to same family were merged. Further, to focus on economically active families, the sample was restricted to families where husband was in the labour force in the end of 1993. To avoid cases where the spouses would be elderly persons unable to migrate for medical reasons, only families where husband (or cohabiting male) was between 24 and 63 years of age (wife 20-63) in 1994 were selected. As an attempt to identify 'permanent' two-adult families, the sample was restricted to cases where the man and woman had been living together (i.e. they were married or cohabiting) in the same household during each of the years 1990-1995. This means that every family in the data has been a family at least for three years before the move and remained a family at least for one year after the move. In addition, families migrating from and to abroad were excluded from the analysis. After these

⁶ All persons belonging to same family have identical household-dwelling unit codes and family numbers.

⁷ Basic sample is a 1% sample drawn from the longitudinal data, complemented with individuals belonging to same household-dwelling unit as the sample individuals.

⁸ Families can be identified every five years. For the purposes of this study the most convenient year was 1990.

restrictions the final sample included 77 340 families⁹ of which 1 747 had moved during 1994.

The average age of the spouses in the sample is 40,2 years. In 1994¹⁰, 56 % of two-adult families had children, while the respective figure in the sample is 73,3 %¹¹. On average, families in the sample have 1,76 children, while the respective actual figure was 1,78. As expected, migration rates calculated from the data are below the actual figures¹². Firstly, we are investigating families, not individuals. Families in general are less prone to migrate than single individuals. Secondly, among families we restrict ourselves to a subset with certain characteristics. Young families (i.e. those starting their married/cohabiting lives), who often are quite migration-prone, are not included in the data¹³. Moreover, since all men in the sample are labour force participants, a very mobile group, students, is excluded from the analysis. When considering all these restrictions, the small number of migrants is, in fact, quite reasonable.

4. MODEL AND VARIABLES

In this study, the attention is drawn to the decision making of a family. The discrete choice of the family relates to the question of whether the family remains in the current region, migrates inside the current province, or migrates to another province. Migration only refers to joint moves by the spouses. The probability of family migration is a function of family and regional variables. The multinomial logit model^{14,15} is utilized in exploring the effect of these variables on migration.

⁹ In 1994 there were nearly 1,2 million two-adult families in Finland, constituting 87 % of all Finnish families (Statistics Finland, 1995b).

¹⁰ All actual figures referred to originate from Statistics Finland, 1995a or 1995b.

¹¹ This difference, most likely, derives from the fact that the present study only considers couples who have been married/cohabiting for several years.

¹² In 1994 about 4,2 % of the Finnish population migrated between municipalities. The corresponding figure in the sample was 2,3 %.

¹³ Migration of young families will be investigated in subsequent studies.

¹⁴ For discussion of the multinomial logit model see Greene, 1993.

¹⁵ The use of the multinomial logit requires the Independence of Irrelevant Alternatives-condition to hold. In the present study, the condition was checked by re-running the regressions with one category left away from the analysis. If the IIA assumption is critical, this should affect the results. In fact, the results were not affected by this, thus the IIA condition seems to hold.

As already mentioned, the present study separates moves into two categories, short- and long-distance moves. A minor shortcoming of this classification is that those moving between neighbouring provinces are categorised as long-distance migrants. However, as the number of these moves is minimal, the results are not likely to be affected by this. Further, those moving inside a municipality are not classified as migrants. In addition, due to limitations of the data, the rest of the province/country is treated as a single destination for migrants from a given municipality/province.

Finnish provinces are comparatively large, which means that long-distance migration includes a change of the local labour market and, most likely, a change of jobs. With the short-distance moves, the local labour market usually does not change, and although it is possible that short-distance moves also involve a change in jobs, they are more likely to be associated with other reasons. Hence, long-distance migration is assumed to be motivated by job-related reasons, while short-distance migration takes place mainly because of housing needs and family reasons.

All variables used in analysis, as well as the expected effects of independent variables are described in Table 1. Categorical means of independent variables are presented in Appendix 1. Studies of family migration have usually investigated only husband's¹⁶ age¹⁷, which reflects the effect of work careers on migration. However, age of the wife is also important, as her age is closely associated with the life cycle of the family. The present study uses average age of the spouses, and examines age in terms of age groups. Families are also separated into groups on the basis of children. These groups correspond family life cycle stages. Altogether five life cycle stages could be identified. The first stage ends with the arrival of the first dependant. Stage two lasts until one dependant reaches school age. Stage three includes couples with two or more dependants, where the ages of dependants are mixed (i.e. pre-school age and school age children). Stage four includes couples with school aged dependants only.

¹⁶ From this point on, term 'husband' means husband/cohabiting male and term 'wife' means wife/cohabiting female.

¹⁷ Husband is then implicitly assumed to be the leader in the family, in which case his age will act similarly to the ages of unattached males, reflecting only his stage of career development.

Table 1. Definitions of the variables and the expected effects of the independent variables

VARIABLE	EXPECTED EFFECT		DEFINITION
DEPENDENT VARIABLE			
Migration			1 if the municipality changed but the province remained the same between 1993 and 1994, 2 if the province changed between 1993 and 1994, 0 otherwise
INDEPENDENT VARIABLES			
	SHORT DIST.	LONG DIST.	
Age in 1994	-	-	Dummy variables designating the average age of the spouses: up to 35 (ref.); 35-44; 45-54; 55 upwards
Children	-	-	Dummy variables indicating the existence of children in 1995: no children under 18 (ref.); only children under 7 years; children 0-17 years; only children 7-17 years.
Husband's education	+	++	Dummy variables indicating whether the husband has less than upper level of upper secondary education (ref.); upper level of upper secondary education; higher education
Wife's education	+	++	1 if the wife has higher education; otherwise 0
Wife's labour force participation	-	--	1 if the wife participates in labour force; otherwise 0
Migration history 1990 – 1993	+	+	1 if the family has changed municipalities at least once in 1990-1993; otherwise 0
In-migration in 1993	+	++	1 if the family migrated into the province in 1993; otherwise 0
Home ownership	-	-	1 if the family owns the house or apartment; otherwise 0
Income	+/-	-	Husband's and wife's income subject to state taxation/1000 marks
Commuting	++	+	1 if either the husband or the wife or both are commuting; otherwise 0
Unemployment experience	+	++	1 if the husband or the wife or both have been unemployed during 1993; otherwise 0
Travel-to-work unemployment rate	+	+	Unemployment rate at the travel-to-work area where the family lives
Size of municipality	+/-	+/-	Dummy variables indicating the number of inhabitants in the municipality: up to 15 000; 15-39 999; 40-69 999 (ref.); 70 000 upwards
Municipality's structure of production (agriculture)	+	+	The share of employed labour force in agriculture and forestry (0-9,99% =0, ..., 90-100% = 9)
Municipality's structure of production (industry)	+	+	The share of employed labour force in industry (0-9,99% =0, ..., 90-100% = 9)

Notes: (1) all variables are measured in 1993 if not otherwise stated (2) + positive effect, ++ stronger positive effect, - negative effect, -- stronger negative effect, +/- positive or negative effect (3) ref. indicates the reference group.

The final stage begins when the last dependant living at home reaches the age of eighteen. For the analysis, the first and last stage were merged, thus four stages are actually used. Due to limitations of the data, existence and ages of children is exceptionally measured in 1995, a year after the move¹⁸, but this is not likely to affect the results. Family ties are investigated through the variables describing education of the spouses and labour force participation of the wife.

5. RESULTS

The results¹⁹ are presented in Table 2. Since interpretation of the estimated parameters of the multinomial logit model would be difficult, marginal effects are reported. In general, the results show that almost all coefficients are statistically significant and have expected signs, thus being in accordance with the theory and earlier empirical findings. Looking at the figures one notices that the marginal effects are very small. This stems from the small number of migrants. Therefore, it is not so much the magnitude, but rather the signs we are interested in.

¹⁸ Information about children was available only from years 1990 and 1995. Since the year of interest is 1994, the situation in 1995 gives the best available approximation of ages of children.

¹⁹ All results referred to but not shown here are available from the author on request.

The results show that the family life cycle influences family migration. Children, in general, inhibit family migration (result not shown here), but families with only under seven year old children are as migration prone as those without children²⁰. As previous studies have concentrated on school-aged children, this observation cannot be compared with others. In line with previous studies²¹ (see e.g. Long, 1974; Sandell, 1977; Mincer, 1978), the presence of school aged children significantly reduces migration propensities. On the other hand, there are differences in migration propensities between families with school aged children as well. The older the children, the less likely the family to move.

As expected, the younger the spouses are, the more migration is enhanced. However, the difference between the youngest and oldest age group is insignificant in longer moves. This is most probably caused by older people's weak employment opportunities²². The age variables become stronger when the children variables are removed from the analysis (result not shown here). In line with Sandefur and Scott (1981), the finding shows that the behaviour of age is reflecting the effect of the family life cycle stages.

²⁰ Those without children refer to couples who have no children, as well as to couples, who do not have children under 18 years of age.

²¹ An exemption is Finland's neighbouring country, Sweden, where the existence of school aged children does not seem to affect migration of two-adult households (see Holmlund 1984; Westerlund and Wyzan 1993).

²² In 1994 25,6 % of those aged 55 and more and in the labour force, were unemployed, while the average unemployment rate for all age groups was 18,4 % (European Commission, 1996).

Both variables relating to the husband's education are positive and significant, thus supporting the findings of several earlier studies (see e.g. Sandell, 1977; Mincer, 1978). The more the husband has general human capital, the more long-distance migration is enhanced. Short-distance migration is most likely to occur if the husband has upper level of upper secondary education. Surprisingly, the wife's education appears to be insignificant²³, although positive, determinant of family migration. This differs clearly from findings in Finland's neighbouring country, Sweden, where the wife's higher education along with the husband's education is proved to be a significant factor in family migration (see Holmlund, 1984). The insignificance of the wife's education suggests that family migration is often associated with the development of husband's career. Even if this implication is consistent with many previous studies (see e.g. Long, 1974; Shihadeh, 1991), it still is quite a surprising finding in Finland, where men and women are very equal and women tend to be even higher educated²⁴ than men.

Labour force participation of the wife significantly reduces the likelihood of moving. Two-earner families are less migration prone than others. The result is in line with a number of earlier family migration studies (see e.g. Long, 1974; Sandell, 1977; Mincer, 1978; Lichter, 1980). The negative connection between the wife's labour force participation and family migration suggests that the husbands of working wives' are tied to certain locations.

Unemployment experience appears to be significant determinant of migration (On Finland, see Tervo and Ritsilä, 1998, see also DaVanzo, 1978; Herzog and Schlottmann, 1984; Hughes and McCormick, 1989). The significance of unemployment in shorter moves differs from findings in other countries (see DaVanzo, 1978; Westerlund and Wyzan, 1993), and is most probably explained by the large size of the Finnish provinces.

²³ Several combinations of wife's education were tried, but wife's education was always insignificant.

²⁴ Finnish women under 50 have a higher level of education than Finnish men, if the proportion of the population with at least an upper secondary education is used as criterion (European Commission, 1996).

The variable indicating migration history is positive and highly significant, and is hence in accordance with several earlier studies (On Finland see Tervo, 1997; Tervo and Ritsilä, 1998; see also Westerlund and Wyzan, 1993). Previous migration experience facilitates subsequent migration and encourages families to move again. Also recent in-migration appears to be positive and significant, thus giving support to existence of imperfect information and unpleasant surprises. Disappointment with the outcome of one move may become the cause of the next.

In accordance with earlier studies (On Finland see Tervo, 1997; Tervo and Ritsilä, 1998; see also Westerlund and Wyzan, 1993), home-ownership significantly reduces the probability of moving. Those owning their house or apartment have stronger locational ties than others. The result also reflects higher transaction costs owner-occupants would face, i.e. even if Finland in 1994 started to recover from the recession, there still existed considerable difficulties in selling properties at reasonable prices. Family income, although having a correct sign, seems to be an insignificant determinant of long-distance family migration in Finland. On the other hand, family income reaches significance in short moves. The higher the income, the more short-distance migration is enhanced. Further, if the family commutes, the probability of migration increases significantly. Even if commuting can be considered as a substitute for migration, after a certain limit moving becomes more reasonable than keeping on commuting.

Table 2. The determinants of Finnish family migration

CHARACTERISTICS (reference group in parentheses)	STAYING		SHORT-DISTANCE MIGRATION		LONG-DISTANCE MIGRATION	
	Marginal effect	t-ratio	Marginal effect	t-ratio	Marginal Effect	t-ratio
Constant	0.0443	13.336	-0.02442	-9.004	-0.01984	-10.475
FAMILY CHARACTERISTICS						
Age (under 35 years)						
35 – 44	0.00571***	6.530	-	-6.073	-	-2.778
45 – 54	0.01286***	9.632	0.00432***	-9.261	0.00140***	-3.544
55 -	0.01224***	5.418	-	-5.416	-	-1.488
			0.01020***		0.00266***	
			-		-0.00171	
			0.01053***			
Children (no children under 18)						
only children under 7 years	-0.00054	-0.506	0.00023	0.281	0.00030	0.479
children 0 – 17 years	0.00549***	4.784	-	-4.438	-0.00137**	-2.063
only children 7 – 17 years	0.00888***	8.037	0.00412***	-7.529	-	-3.287
			-		0.00208***	
			0.00680***			
Husband's education (lower than upper level of upper secondary education)						
upper level of upper sec. education	-	-3.159	0.00160**	2.239	0.00127**	2.309
higher education	0.00287***	-6.127	0.00130	1.625	0.00459***	8.891
	-					
	0.00589***					
Wife's education	-0.00096	-1.009	0.00032	0.415	0.00064	1.210
Migration history 1990 – 1993	-	-10.672	0.00619***	8.335	0.00356***	6.894
	0.00976***					
In-migration in 1993	-	-6.130	0.00653***	4.034	0.00524***	5.894
	0.01177***					
Home ownership	0.01290***	16.860	-	-13.877	-	-9.726
			0.00868***		0.00422***	
Income	-6.3E-07	-0.215	3.8E-06**	2.340	-3.2E-06	-1.307
Commuting	-	-11.181	0.00630***	10.586	0.00191***	4.532
	0.00821***					
Unemployment experience	-	-8.461	0.00340***	5.789	0.00270***	6.574
	0.00610***					
Wife's labour force participation	0.00464***	5.614	-	-2.952	-	-5.860
			0.00203***		0.00261***	
REGIONAL CHARACTERISTICS						
Travel-to-work unemployment rate	0.00021**	2.243	-	-4.178	0.00012**	2.172
			0.00033***			

Size of the municipality (40 000 – 69 999 inhabitants)						
- 15 000	0.00110	0.591	0.00207	1.259	-	-3.678
15 000 - 39 999	0.00031	0.182	0.00311**	2.032	0.00317***	-4.398
70 000 -	-0.00302*	-1.751	0.00455***	2.961	-	-2.004
					0.00342***	
					-0.00153**	
Municipality's structure of production (agriculture)	0.00104	1.612	-0.00131**	-2.417	0.00026	0.742
Municipality's structure of production (industry)	0.00004	0.094	-0.00066*	-1.682	0.00062**	2.362
Number of observations	77 340	Number of migrants			1 747	
Log likelihood	-8 434.917	Restricted log likelihood			-9 452.761	
$\chi^2(44)$	2035.7	Likelihood ratio index			0.1077	
Correctly classified	97.7 %	* ** *** significant at the 10, 5, 1 % level				

The size of municipality is a significant determinant of Finnish family migration, but the connection between the size and migration is not linear. Families living in middle-sized towns are most eager to long moves, while the likelihood of short moves is the greatest for those living in the biggest towns. The share of labour force working in industry is also significant. The positive effect in longer moves is in line with the observed recent development, i.e. one-sided industrial areas are losing population in Finland (see Vartiainen, 1997; Laakso, 1998). The share of industry is negatively related to short moves. The share of agriculture does not seem to affect the probability of long-distance migration, which differs from earlier Finnish findings, as Tervo (1997) and Tervo and Ritsilä (1998) argued areas of primary production to push workers out to other provinces. On the other hand, the share of agriculture significant and negative determinant in short moves.

The unemployment rate at the travel-to-work area significantly affects family migration. The higher the unemployment rate, the more long-distance migration is enhanced. This supports earlier Finnish findings (see Tervo, 1997; Tervo and Ritsilä, 1998), but at the same time differs from results obtained in several other countries (e.g. Van Dijk, Folmer, Herzog and Schlottmann, 1989 (Netherlands); Hughes and McCormick, 1989). There seems to be a negative connection between unemployment rates and short moves. If the family wants to migrate away from a municipality because of the bad unemployment situation, it is not likely to move short distances. This is because the circumstances are approximately the same in all surrounding areas. Thus, high unemployment rates reduce mobility inside the province, but increase migration between provinces.

6. SUMMARY AND CONCLUSIONS

The aim of the present study was to investigate the factors affecting Finnish family migration. Further, to explore the differences between different types of moves, short- and long-distance migration were distinguished. While long-distance migration might be more interesting on the point of view of the whole economy, short-distance migration is bound to have a great importance at the regional level.

The results show that even if there are certain differences between short and long moves, the family life cycle affects both. There is a strong negative connection between the family life cycle and migration. Childless couples and those with only pre-school age children are most eager to move. When children are at school, the mothers are likely to work, which, in addition to children's ties to their schools and friends, creates stronger ties to current locations. The probability of moving is inversely related also to parents' ages. Moves necessary for career development are usually made at younger age. In terms of human capital, the negative effect of age is explained by the accumulation of general versus location-specific human capital.

Older people, in general, have more specific human capital (work experience), which usually is not transferable to other locations. The moving costs for older people are greater, thus reducing the willingness to move. The present study suggests that it is the family life cycle stages and work careers that explain variations in migration propensities. The ages of parents and children are merely reflecting these effects.

Migration is selective also with regard education. As the general human capital is easily transferable to other locations, higher education of the husband induces long moves. Those with intermediate education have wider range of job opportunities in a certain location, and they are most eager to short moves. Surprisingly, wife's education is insignificant, supporting the existence of traditional migration pattern – the husband leads and the wife follows – also in Finland. As families migrate due to the demands of the husbands' careers, the wives usually are the tied migrants. On the other hand, a family is less likely to improve its economic position by migration if two persons rather than one is working, and the deterrent effect of the wife's work status increases with distance. Labour force participating wife has more location-specific capital, the value of which decreases with distance. The inhibiting effect of working wife implies that the tied stayer in the family is often the husband.

As the findings are in line with those of earlier migration studies (see e.g. Long 1974, Sandell 1977, Mincer 1978), family migration seems to behave quite similarly around the world. The society has undergone many changes after the completion of earlier family migration studies. The educational level, labour force participation and earning power of women has increased, and men and women have become more equal. In spite of that, the effect of family ties seems to have remained unchanged for decades. It is still the human capital of the husband, which is maximised through migration.

Since unemployment reduces opportunity costs of migration, it is not surprising that families with recent unemployment experience are migrating more likely than others. Further, high area unemployment increases the likelihood of long-distance migration, while having an inhibiting effect on shorter moves. Combined information on family migration, personal unemployment and area unemployment lends support to Tervo and Ritsilä (1998). That is, both personal and area unemployment seem to be working to

direction of reducing regional unemployment differentials. However, at the same time, the danger of cumulative causation increases, since not only the families with unemployment experience, but also others are moving away from the regions of high unemployment. The areas of high unemployment are in danger to lose their valuable human capital, tax revenues and purchasing power in the form of whole families.

The present study has made an effort to reveal the characteristics of Finnish family migration. As the family life cycle greatly influences family migration, the motives underlying moves differ from those of unattached. These differences give more justification for the separate study of family migration. In fact, if one wishes to reveal the true nature of migration, each group should be inspected separately. Only this way true comparisons between migration of attached and single persons can be made. Hence, more detailed information on family migration is needed. The interaction between wife's locational ties, her general human capital and family migration decisions is an issue to be investigated in the future. The consequences of family migration should also be examined. Above all, more light should be shed on the phenomenon of tied migration. Important questions still remain. Where do families go? How do family life cycle and children affect the location choices of families? Do consequences of migration vary with the size of the destination? Subsequent studies will, hopefully, give answers to these questions.

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APPENDIX 1

Means of independent variables by the migration category

VARIABLES	STAYERS	SHORT DIST. MIGRANTS	LONG DIST. MIGRANTS
	Mean	Mean	Mean
FAMILY CHARACTERISTICS			
Age			
- 35 years	0.27	0.56	0.51
35 – 44	0.46	0.33	0.34
45 – 54	0.22	0.09	0.11
55 -	0.05	0.02	0.04
Children			
no children under 18 years	0.30	0.24	0.24
only children under 7 years	0.17	0.40	0.37
children 0 – 17 years	0.17	0.19	0.20
only children 7 – 17 years	0.36	0.17	0.19
Husband's education			
lower than upper level of upper secondary education	0.67	0.57	0.49
upper level of upper secondary education	0.17	0.22	0.17
higher education	0.16	0.21	0.34
Wife's education	0.16	0.19	0.22
Migration history 1990 – 1993	0.07	0.26	0.30
In-migration in 1993	0.01	0.04	0.08
Home ownership	0.84	0.58	0.57
Income/1000 marks	217	215	202
Commuting	0.34	0.51	0.41
Unemployment experience	0.35	0.45	0.53
Wife's labour force participation	0.84	0.76	0.67
REGIONAL CHARACTERISTICS			
Travel-to-work unemployment rate	22.5	21.3	22.5
Size of the municipality			
- 15 000	0.40	0.28	0.35
15 000 - 39 999	0.26	0.27	0.23
40 000 – 69 999	0.06	0.04	0.09
70 000 -	0.28	0.41	0.33
Municipality's structure of production (agriculture)	0.58	0.34	0.46
Municipality's structure of production (industry)	2.18	2.04	2.21
Number of observations	75 593	1 176	571

