

A REVIEW ON THE DETERMINANTS OF MIGRATION

MASATOSHI YORIMITSU*

I. *Introduction*

Studies on regional migration¹ are divided into two broad categories: studies dealing with the determinants of migration and studies concerning the consequences of migration (Greenwood, 1975, p. 397). Central issue of the former studies is to find out the most important factors influencing person's decision to migrate and affecting the magnitudes and directions of migration (Lee, 1966, pp. 285-288). Main discussions of the latter studies are centered on the socio-economic changes of a nation and regions caused by population migration, and on the changing socio-economic status of migrants (Cosinski and Prothero, 1975, pp. 13-14).

Studies on the determinants of migration can be organized into two groups: (1) studies, based on aggregate data, dealing with the comparative attraction powers of places of origin and destination, and (2) studies, based on micro data, dealing with the characteristics of the movers (Margolis, 1977, pp. 139-142).

Macroanalytical studies measure the magnitudes and directions of migration² and try to explain the factors that affect migration. Macro studies usually discuss the comparative attraction powers and the different responses of subgroups of migrants to these powers (Thomlinson, 1965, pp. 223-231).

Microlevel studies deal with the migration behavior of individuals and families. Center of attention is focused on the factors influencing the decision making to migrate or to stay and to select destination (De Jong and Gardner, 1981, p. 2).

Macrolevel and microlevel studies on migration have dealt with migration without showing linkages between the microlevel and macrolevel, and few attempts have been made to link macrofactors to microlevel process (Gardner, 1981, p. 59). To accomplish such linking is quite difficult, because each theory was developed by researchers from different disciplines and reflecting the various disciplinary approaches (Berliner, 1977, pp. 443-445). Nevertheless, there is a growing concern for the lack of theory, and several attempts were made to develop theories of migration (Speare *et al.*, 1975, p. 163). One of the steps to fulfil this requirement is to review and evaluate the various models of migration systematically.

The objective of this paper is to review the literature on the determinants of migration with special attention to the development of analytical frameworks.

Before preceding further, it is worthy of reminding the current trends that stimulate

* Professor of Population Problems.

¹ Population migration is a combination of regional migration, industrial mobility, and occupational mobility. In this paper we will restrict our attention to regional migration.

² Problems concerning measurement of migration are discussed by Arriage (1977).

studies on migration. First, world population growth rate began to slow down at the beginning of 1980's. This tendency is mainly due to the declining population growth in the developing countries, which account for three-quarter of world population (Population Reference Bureau, 1983). But we should not neglect the fact that there are several developed countries where "zero population growth" was performed (Brown, 1984, pp. 4-5, 22-23). These changes in the rate of population growth imply the growing importance of population migration as a determinant factor of regional distribution of population. Second, concentration of population into urban areas in the developing countries is persistent (Kols, 1983, p.M-247). It is becoming more urgent issue to analyse the mechanism of migration from the viewpoint of formulating the relationships between migration, socio-economic development, and urban problems (Kols, 1983, pp. M-260-M-264). Third, since new forms of population migration are emerging in the developed countries, especially in the United States, current analytical frameworks have some shortcoming in explaining these new forms of migration (De Jong and Sell, 1977; Espenshade and Serow, 1978; Brown and Wardwell, 1980; Feldstein, 1980). Fourth, although the volume of international migration is not so significant as that of internal migration, international migration is offering social and economic problems in both sending and receiving countries (United Nations 1979; Piore, 1979).

These current circumstances not only stimulate the study on migration, but also require the formulation of general analytical frameworks in studying migration.

II. *Macrolevel Models on Determinants of Migration*

Various macro studies have common features listed below. First, the volume of migration measured by aggregate data is treated as dependent variable (Bogue, 1959, pp. 491-496). Second, many independent variables which are considered to be conducive to migration are prepared. Third, independent variables are tested by statistical methods to estimate their contribution to migration.

1. Gross and Net Migration

Greenwood (1975) classified studies on the determinants of migration into two categories: those dealing with gross migration and those dealing with net migration (p. 397). There is a slight difference in theoretical implications between studies on gross migration and those on net migration. According to Greenwood (1975), "a point common to many studies of gross migration is that the models upon which they are based are either explicitly or implicitly formulated in the context of individual utility maximization" (p. 398). On the other hand, studies dealing with net migration take "net migration to be a function of net propensities of persons to move between regions" (p. 408).

In spite of the difference in implications, theoretical foundations are similar in both gross and net migration studies.

2. Factors Affecting Migration

Critical point for the studies of determinants of migration is to organize the most important factors affecting migration. The discussion of major migration determinants includes

such factors³ as (1) demographic characteristics of migrants, (2) socio-economic characteristics of migrants, (3) socio-economic characteristics of places of origin and destination, and (4) factors accompanied by migration.

(1) Demographic Characteristics of Migrants

Many studies discuss demographic characteristics of migrants such as age, sex, marital status, and size of household. These demographic factors are usually employed to divide the migrants into subgroups and to distinguish the difference in migration patterns between subgroups (Jansen, 1970, p. 14). According to Speare *et al.* (1975), "the most important factor around which differentials and generalizations regarding mobility incidence have evolved relates to the life cycle of the individual" (p. 128).

(2) Socio-economic Characteristics of Migrants

Migration takes place when an individual decides that he or she will improve his or her socio-economic conditions by moving rather than staying. Socio-economic characteristics of migrants, considered to have direct influence on migration, are such factors as ① employed or unemployed,⁴ ② occupation,⁵ ③ duration of current job,⁶ ④ income level, ⑤ educational level, ⑥ duration of current residence, ⑦ house ownership,⁷ ⑧ location-specific assets,⁸ and ⑨ previous experience of migration.⁹

Although some of these factors has mutual connection with each other, and the demarcation of these factors is not clearcut, these factors constitute individual's satisfaction or dissatisfaction of living at current location.

(3) Socio-economic Characteristics of Regions

Generally speaking, migrants decide to move from one region to another in expectation of being better off by living other place. The comparison of socio-economic conditions of current residential place and other regions should greatly affect the process of decision making whether to stay or to move.

Various socio-economic characteristics of regions, discussed as inducive or restrictive factors of migration, are as follows: ① size of population, ② ratio of urban population, ③ number of friends and relatives at the destination,¹⁰ ④ average income level, ⑤ growth rate of income, ⑥ rate of unemployment, ⑦ growth rate of employment, ⑧ amenities,¹¹ and

³ In the following list of factors we include the factors that are employed in micro studies on migration.

⁴ Lansing and Mueller formulated the relationship between unemployment, age, kind of job, and educational level (Lansing and Mueller, 1967, p. 68-77).

⁵ Geographical migration usually included interindustrial mobility and occupational mobility. An attempt to disentangle the effects of interregional mobility from those of interindustrial mobility was made by Gallaway (1969).

⁶ Reynolds (1951) pointed out that the institutional restraint such as provision for the use of seniority affects the personal incidence of movement (pp. 54-55). He discussed this matter in the context of failure of market to meet labor demand and the hiring process, and proposed the concept of an "inside market" (pp. 44-45).

⁷ The tenure status of the household and the physical structure of the dwelling unit are considered to be a consistent predictor of future mobility (Speare *et al.*, 1975, pp. 132, 136).

⁸ Location-specific assets denote any or all of the diverse factors that tie a person to a particular place. It refers to both concrete and intangible assets, for example, property ownership, community ties, an existing clientele, and a licence to practice a particular profession (DaVanzo, 1980, p. 40).

⁹ The recognition of distinguishing repeat moves from first-time moves is gradually gaining and treated by DaVanzo and Morrison (1982).

¹⁰ Previous migrant flows are expected to influence current migration (Levy and Wadycki, 1973). "Migrants often limit their destination choices where friends and relatives have already settled" (Morrison, 1977, pp. 64-65).

¹¹ As for the issues concerning amenities, see Spengler and Myers (1977, pp. 26-29).

⑨ educational and cultural facilities and level of social security.¹²

These factors are employed to explain the magnitudes and directions of migration and the variations among subgroups of migrants. Famous controversy between income difference models and employment opportunity models will be discussed below.

(4) Factors Accompanied by Migration

Change of residence itself usually entails costs of moving and is attended with some uncertainty and risks. Whether the risks and uncertainty have preventive effects on migration or encouraging influence on migration depends on personality of potential migrants. Several factors listed below are considered to influence the act of migration: ① physical distance of migration, ② direct costs of moving, ③ information about the destination, ④ costs of job search, ⑤ risks of changing residence, and ⑥ psychological costs of leaving current residence.

From the list of various factors, it is apparent that some of the factors are not directly measurable, and the list includes a wide range of economic and non-economic factors. Factors are listed without consideration of relative importance. Estimation of factors depends on the implications of each theory.

3. Models on the Determinants of Migration

It is presupposed in the models of macro-analysis that the ultimate cause of migration is to maximize the utility of the migrants. Various models are grouped into four categories: (1) models discussing migration distance, (2) income difference models, (3) employment opportunity models, and (4) human capital models.

(1) Models on Distance

The relationship between migration and distance has been frequently discussed since Ravenstein's "laws of migration" (Ravenstein, 1885). If we look at the theoretical development of studies on migration distance, theory started with the fact finding that there was inverse relationship between the volume of migration and distance. Then followed the gravity models that dealt with not only distance, but also the difference of population size and ratio of urban population between origin and destination (Speare *et al.* 1975, pp. 164-166). Further theoretical development was shown by the models which regarded the distance as intervening opportunities (Stouffer, 1940), and the models dealing with the relation between distance of migration and information about the destination (Schwartz, 1973). Another model argues that "psychological distance" of the migration rather than physical distance has great influence on migration (Burford, 1962). Models of friends and relatives or "migration stock" insist the crucial importance of past migrants at the destination to the decision making to move (Nelson, 1959; Greenwood, 1969).

(2) Income Difference Models

Basic concept of income difference models is that the regional income difference is the main inducer of migration. These models insist that the variable indicating the difference in average income between regions is the most important among various variables in explaining migration.

Simple model of migration from low income region to high income region was improved by introducing the concept of "time lag" in making an income comparison between origin and

¹² The migrant is a consumer as well as a labor supplier and investor. The demand for public goods as a factor of migration is discussed by Stevens (1980).

destination (Inoki, 1974), by attempting to evaluate the real income difference between regions (Rabianski, 1971). Further attempts were made to propose the expected income, the combination of real income and the possibility to get job at the destination (Todaro, 1969). Recently, difference of local labor markets are considered to be attributed to migration (Krumm, 1983).

Different responses between subgroups of migrants to the income difference are examined in these models (Schwartz, 1976). Special mention should be made of the fact that these models treat wage differences between regions in terms of average wages.

(3) Employment Opportunity Models

The original model of employment opportunity emerged from the criticisms of income difference models. While the income difference models supposed the increase of migration when the income difference between regions was large and *vice versa*, Theodore W. Schultz found that the volume of migration increased in the periods of shrinking wage difference. This fact finding lead him to construct a model of employment opportunity (Schultz, 1945).

Employment opportunity was measured by several ways: unemployment rate, ratio of change of employment, and the rate of change of industrial products. According to the opportunity models, potential migrants are supposed to compare the employment opportunities of current region and the destination, and they are inclined to migrate from the place of scarce opportunity to the place of plentiful opportunity. Another models argued that migration had close relation with the "respected unemployment" (Blanco, 1964) or the difference of regional industrial structure (Parnes, 1954). These models examined the difference of response to opportunity among subgroups. Criterion to divide migrants into subgroups were such factors as age, employed or unemployed, job-searcher or non-job-searcher, level of education, and level of income (Lansing and Mueller, 1967).

Sometimes the models of income difference and the models of employment opportunity are treated as opposing models. But the two factors, income and opportunity, are in their nature without contradiction, and Raimon (1962) argued that "the wage difference model incorporates the job vacancy model" (p. 438).

(4) Models of Human Capital

Models of human capital applied the notion of investment in human capital to the decision making of migration. According to human capital models, potential migrants compares the expected net benefits and costs of moving to each potential destination and selects one destination where the benefits are expected to be maximized (Sjaastad, 1962).

Basic model of human capital considers three explanatory variables; net benefits at the current residence and destination and costs of moving. From the beginning of the model building, human capital models deal with costs and return of migration in economic and non-economic terms. One of the characteristics of these models is the recognition that the benefits of migration occur over a period of time.¹³

Relying solely on the aggregate data becomes insufficient to examine these models, and the models of human capital have been developed in micro analysis based on non-aggregated data (DaVanzo, 1980).

Many macro models dealing with the determinants of migration are focused on the dif-

¹³ Inoki and Suruga (1981) insist that "the human capital-search theoretic approach explains the observed prefecture-to-city labor migration in Japan at the pinnacle of the rapid national economic expansion." (p. 517)

ference of migration behavior among subgroups of migrants. They are impossible to analyse the difference within each subgroup (DaVanzo, 1980). At the same time, the existing income-oriented models of migration, including those of human capital theory have generally viewed the migrant as either a worker or an investor, and have ignored the fact that the migrant is a consumer. Although the attempt to fulfil this shortcoming was made by Stevens (1980), a comprehensive model dealing with the migrant as a worker, an investor, and a consumer remains still unexplored.

III. *Micro Analysis on Migration Decision*

Micro analysis on migration centers its attention on the decision making process of each migrant or migrant family by using micro data gathered by researches (Rothenberg, 1977).

One unique feature of micro analysis is collection of micro data (DaVanzo, 1980). First, it is possible to collect precise data by delimiting sample for the research purpose. Second, minute data on the factors that affect decision making to move are collected. Third, it is possible to collect data of potential migrants concerning the wishes and reasons to move or to stay and the selection process of destination. Thus, the whole design of data collecting procedure is important for micro analysis.

Common points in the studies of micro level analysis are listed below.

- (1) Basic unit of analysis is an individual person or a family.
- (2) Decision to move or to stay and selection of a destination are made "rationally."
- (3) Analyses on the motivation to move and the structure of personal behavior that affects the decision making provide the bases of the studies.¹⁴
- (4) Migrant is supposed to select one destination among potential destinations.¹⁵
- (5) Personality or ability to attain the goal is important in the decision making and the actual migration.
- (6) Inducive or preventive factors to the migration decision are mixture of economic, social, cultural, and political factors.

These points form a striking contrast with macro analysis that deals with migrant as an "average" or "group". Micro analysis goes through the personal level of migration activity and there is a tendency to deal with migration in multidisciplinary approaches (De Jong and Gardner, 1980).

Let us examine two leading micro-level models of migration: (1) three-stage of decision making model, and (2) expected utility model.

1. Three-stage Model

Although the real process of decision making does not always take three stages step by step, this model distinguished the decision making process into three stages: (1) development of a desire to consider moving, (2) search for an alternative location, and (3) decision to move

¹⁴ DaVanzo (1980) mentions that the economic approach does not try to analyze how people think but how they act (p. 11).

¹⁵ The fact that a destination is "rationally" selected from destinations is without contradiction to the return and repeat migration. DaVanzo (1980) attempts to explain the return and repeat migration by utilizing the concepts of location-specific capital and imperfect information (pp. 40-42).

(Speare *et al*, 1975, p. 175).

(1) Development of a Desire to Consider Moving

The central issue of this stage is a level of dissatisfaction of members of individual households. The initiation of the decision-making process results from the increase in dissatisfaction beyond a person's tolerance level or threshold. Several factors listed below can lead to the increase of dissatisfaction: ① personal and household characteristics, ② housing characteristics, ③ locational characteristics, and ④ social bonds (Speare *et al*, 1975, pp. 175–178).

The higher the level of dissatisfaction the more likely a person is to consider moving. With the development of dissatisfaction to a point where one begins to consider moving, the decision making process enters at the second stage (Speare *et al*, 1975, pp. 184–187).

(2) Search for an Alternative Location

When a person becomes dissatisfied with the current state of affairs, that person will search for an alternative location. This stage is applied only to people considering moving.

The search process is restricted by the potential migrant's "awareness space," and the expected level of satisfaction of the alternative location (Speare *et al*, 1975, pp. 178–182).

(3) Evaluation and Decision to Move

The evaluation process can be represented by a cost-benefit model that includes both monetary and non-monetary factors. The decision to migrate depends on the expected level of satisfaction of an alternative and the cost of moving.

One of the merits of this three-stage model is the formulation of a "threshold" beyond which a person's dissatisfaction increases that person will consider moving. This model argues that "in most cases a highly satisfied person will not even consider moving despite the fact that he or she might be better off somewhere else" (Speare *et al*, 1975, p. 175).

2. Expected Utility Model

This model is a micro-economic model that applied a theory of human capital to migration decision making. The premise of this expected utility model is that an individual migrates in the expectation of being better off by moving (DaVanzo, 1980, p. 3). The potential migrant considers the expected net benefits and costs of moving to each potential destination and decides to move if there is at least one destination. Then, the potential migrant will choose the destination offering the greatest expected net gain.

The expected utility model is expressed by the following equation.

A person living in area i will move if

$$PV_{ij} = \sum_{t=1}^T \frac{U_j^t - U_i^t - C_{ij}^t}{(1+r)^t} > 0$$

and will choose the area j where PV_{ij} is greatest, where

PV_{ij} = present value of net gain of moving from i to j ,

U_k = expected utility in area k ,

j = potential destination,

i = origin,

r = discount rate ($0 < r < 1$),

t = expected length of remaining lifetime,

C_{ij}^t = cost incurred in time period t of moving from i to j .

The expected utility refers to the individual's utility or well-being in the current and alternative locations, and utility cannot be directly measured. Costs and benefits of migration are not restricted to narrowly defined "economic" variables (DaVanzo, 1980, pp. 4-7).

In empirical analyses explanatory variables that are likely to be highly correlated with this conceptual variables are used. The relevant conceptual variables are expected utilities of expected real income (DaVanzo, 1980, pp. 17-20).

The potential migrant compares two present discounted values of lifetime streams of real income. The costs include not only the real expense for transportation, but also such factors as ① opportunity costs, ② loss in the value of location-specific assets, ③ psychic costs of leaving friends and relatives, and ④ costs of financing the investment in migration.

The benefits include not only increased earnings, but also increased non-wage income and improved amenities (DaVanzo, 1980, pp. 4-5).

The expected utility model can include some variations such as ① family consideration, ② return and repeat migration, ③ information costs, ④ uncertainty and risks, and ⑤ income effect (DaVanzo, 1980, pp. 7-8).

This model is considered to integrate various macro models and expected to lessen the gaps which separate macro and micro analyses. Close examination of the organization of utilities should be the next step of model refining.

IV. *Concluding Remarks*

We have traced the theoretical development in migration literature by concentrating our focus on the studies dealing with the determinants of migration. Even in this field, various models have been built without close connection with each other. One of the attempts to make an advance in analytical frameworks is to examine the process of decision making to migrate. The expected utility model has broad concepts that enable to combine both macro and micro analyses.

The attempts to organize factors that constitute the utilities, together with the relevant survey designs, will contribute greatly to the advancement of studies on migration. Another important issue is to treat the migrant as a worker, an investor, and a consumer simultaneously.

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