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A CONCEPTUAL MODEL OF CAREER OCCUPATIONAL MOBILITY IN AN INDUSTRIALIZING SOCIETY: THE CASE OF KOREA[1]

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This paper purports to analyze the career occupational mobility patterns in Korea. In analyzing the relative mobility patterns which remain after we control for the effects of marginal distributions in the person-year occupational mobility tables, I argue that the conceptual models devised for the study of intergenerational mobility cannot be directly applied to the study of career mobility. Models for the study of career mobility patterns should reflect both labor market perspectives and life history perspectives. A model of career occupational mobility patterns based on six conceptually distinguishable factors, Persistence, Ceiling, Traditional Sector, Nonmanual Occupations, Alternative Channels, and Occupational Distance, is proposed.

INTRODUCTION

This paper focuses on developing a conceptual model to analyze the structural pattern of career occupational mobility in an industrializing society, Korea during a thirty-year period of her rapid economic growth, from 1954 to 1983. In studying the structural pattern of career mobility, I first conceptualize career occupational mobility as movement[2] of each individuals within the occupational structure throughout their work-lives in the labor market. Then collectively these career movements of each individuals reveal the beaten paths of occupational mobility. The contour of

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[2]I suggest that we need to conceptualize `staying (i.e. not moving, or being immobile)' as a part of `moving'. This suggestion is closely related with the question of level of categorization in the analysis. An event of staying in a certain category of occupations may be an event of moving across occupational categories if we adopt a different, or finer, categorization of occupations. Hence, the distinction between staying and moving has a finite meaning only within a particular scheme of categorization at certain level. That is, the distinction is very conditional on the level of categorization of occupations. I suggest that, instead of venturing into this gray area of argument, we should conceptualize each individual as being in a constant state of moving across infinitely detailed occupational categories.

interconnection between these more travelled occupational mobility paths is what I refer to as the structural patterns of career occupational mobility.

The structural patterns of career occupational mobility can show us two important features of a society that affect life chances of individuals in it. At societal level, it shows us how the occupational sphere of labor market is organized, operated, and institutionalized. At individual level, it shows how the future occupational positions and life chances of individuals are affected by their current positions in the cobweb of occupational paths. As such, in other words, structural pattern of mobility is the aggregate pattern of individual mobility paths, which reflects the historical and institutional arrangements within the labor market at a given time.

In studying the structural pattern of career occupational mobility, I follow Goldthorpe (1981) in decomposing the total mobility observed in the mobikity tables into the absolute and the relative mobility. The distinction between the absolute and the relatibe mobility patterns in Goldthorpe's sense has to do with the application of log-linear analysis technique in the mobility table analysis.

Simply put, absolute pattern refers to the inflow and outflow pattern which we actually observe in the bivariate contingency tables of origin and destination occupations. Relative pattern refers to the pattern of inflow and outflow rates so calculated that the structural influences, as reflected in origin and destination marginals of the mobility table, are controlled for by log-linear modelling techniques.

This paper is based on the criticism that most of the mobility studies based on the log-linear analysis of mobility tables lack conceptual basis of the models employed. With such notion, this paper purports to present and discuss the conceptual model of the career relative occupational mobility in the context of an industrializing society, Korea.

DATA AND CLASS SCHEME

Data

In an earlier paper (Kim, 1994), I have argued that we should use the person-year mobility tables instead of the conventional standard mobility tables of "first job-current job" kind in studying the career occupational mobility. In order to construct the person-year mobility tables, we need information on the career of the individuals under study. This, in most cases, requires the data to be gathered in the forms of retrospective life history data or panel data. This paper is based on the notion of the

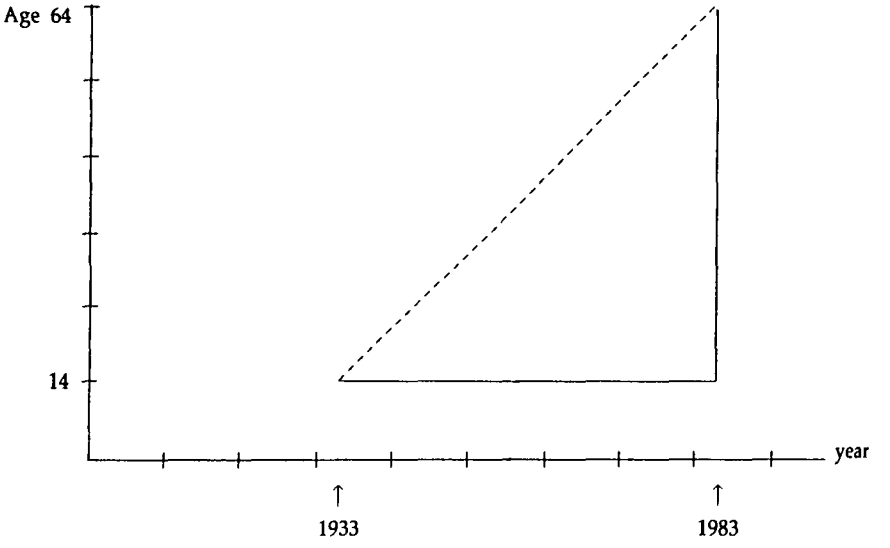

FIGURE 1. THE PROFILE OF KNMS DATA

availabilit of the retrospectively gathered life history survey data in Korea. The availability of such data from Korean National Migration Survey (hereafter, KNMS), which was conducted in 1983 on a national sample of 8,707 men and women aged 14-64, will be the basis of much of the discussion in this paper. Interested readers are referred to the earlier paper (Kim, 1994) for the detailed discussion of the data and its application in the context of the mobility studies.

The retrospectively gathered life history data cover a triangular-shaped space in the Lexis diagram, as in Figure 1. Since the data contain all information on the occupational careers of individuals, we can identify the occupational position of any individual in every year in his/her life between age 14 and 64. This detailed information permits us to construct not only the conventional standard mobility table of "first job-current job" kind, but also the cumulative mobility table and person-year mobility table as well.

Occupational Class Scheme

The analysis is anchored on occupations as a set of six distinct groups: the Upper Nonmanual, the Lower Nonmanual, the Self-Employed, the Manual, the Farmers, and the Not Working.[3] The grouping is done first by the

[3]Any occupational mobility into and from 'Not Working' category will be omitted in the mobility table analysis.

criterion of currently working or not. The fact that 'Not Working' category is included in the analysis reflect the conception of 'Not Working' as a distinct social position that deserves closer analysis. The second criterion of occupational grouping roughly corresponds to the primary vs. the secondary and tertiary industries in the context of Fisher-Clark industry classification. This criterion identifies Farmers as a distinct group from others.

The third criterion is whether one works for wage or for own-account. This criterion distinguishes the self-employed, unpaid family workers, and employers from the employees. This group in a practical sense roughly corresponds to the Petite Bourgeoisie in class analysts' terms. The fourth criterion identifies manual labor contrasted to nonmanual labor. The fifth criterion distinguishes the professional and managerial occupations from the routine nonmanual ones.

The resulting six-category occupational class scheme[4] is quite comparable

TABLE 1. OCCUPATIONAL COMPOSITION OF CLASSES

Employment Status	Occupations	Class Locations
Employer Self-Employed Employee	Professional & Technical Administrator & Manager	Upper Nonmanual (UNM)
Employee	Clerical Sales	Lower Nonmanual (LNM)
Employer Self-Employe Unpaid Family Worker	Excep Agri, Prof & Tech	Self-Employed (SEM)
Employee	Service Produc tion Worker Transportation	Manual (MAN)
All	Agri	Farmer(FAR)
Unemployed (Seeking Work) Unemployed (Not Seeking Work) Household Work Retired of Sick No Response		Net Working (NW)
Student		Excluded from
Military Personnel (Drafted)		the Sample

[4]See Table 1 for the details of the classification scheme.

with other occupational groupings or class scheme which have been widely put to use. For instance, it is easily reduced to three-class (nonmanual, manual, and farm) model which has been popular in comparative mobility research. Also, it corresponds without any difficulty to the so-called EGP class scheme (see Erikson, Goldthorpe, and Portocarero, 1979).

HOW CAN WE STUDY THE STRUCTURAL PATTERN OF MOBILITY?

Methodological Review of the Previous Research

Following the earlier discussion on Goldthorpe's distinction between the absdute and relative mobility patterns, in this paper we are mainly concerned with the relative mobility pattern.

Study of the relative mobility pattern has been dominated by and identified with the modeling approach with the technique of log-linear modeling. Particularly for the analysis of the mobility table with the discrete class model, in which no strict hierarchical structure of classes is assumed, a special class of log-linear models, topological models, has been the most influential throughout the field for more than a decade.

A topological model[5] is a particular kind of log-linear model which uses a set of interaction parameters, on top of row and column parameters, within a two-way table to account for the cell frequencies in the table. The use of interaction parameters in reproducing the cell frequencies within a table is a common feature of most of the log-linear models. What makes a topological model unique is that it tries to map the cells in the table into a number of sets of density levels, which share the same interaction parameters. Density levels, identified as such, characterize the cells within each level by the same degree of association or dissociation. And the cells within each of the levels are claimed to share conditional independence from the cells in other level.[6] By identifying the groups of cells, which share the similar degree of association between origin and destination classes, and representing each of the groups of cells by only one interaction parameters, topological models achieve a parsimony.

One other special feature of the topological model is that in this approach the cells grouped together into any level may in principle be drawn from anywhere in the table; the mapping of the cells is not confined by the row or column location of the cells. This feature of the modeling enables us to use

[5]I am following Hout (1983) in naming this class of models as topological models.

[6]What is claimed here is that the effects of rows and columns on each of the relevant cells within the same level are independent from each others.

more imaginative and substantively interesting pictures of the mobility pattern in the analysis in a more parsimonious way.

Topological models were first introduced to mobility studies by Hauser (1978; 1979). Hauser's modeling approach can be characterized as a 'single matrix of multiple density level' approach. That is, his model about the mobility pattern can be summarized by a single matrix which contains multiple density levels. In his approach, each of the cells in the mobility table is assigned to only one density level; the entire cells of the table are assigned to one of the mutually exclusive and exhaustive sets of cells.

Although its impact on and contribution to the field of mobility research has been tremendous, Hauser's approach has been criticized as not being firmly based on any theoretical concepts in dissecting the mobility pattern reflected in the table. His modeling approach has been mostly driven by the efforts to achieve a genuine summary of the observed patterns in the table. And as described in a series of celebrated papers (Hauser, 1978; 1979; Featherman and Hauser, 1978: 150-76), Hauser's approach relies heavily on the controlled search strategy, which includes imposing certain formal constraints, in particular parsimony and symmetry. During the whole procedure of searching for the best arrangement of the cells into several levels, the primary purpose is to attend to the observed structure of data as closely as possible, rather than imposing a pre-conceived structure of mobility onto the table.

The criticism about Hauser's approach being less theoretic than desired is more serious when coupled with another methodological criticism on his approach. Many researchers have shown (Goodman, 1979; McDonald, 1981; 1983; Pöntinen, 1982) that it is possible to specify different models of a mobility table that are equivalent in the sense that they generate exactly the same fitted counts in each cells of the table. For example, McDonald has identified at least five alternative to Hauser's model, all of which "...tell very different stories about the world..." (McDonald, 1983: 205). This indeterminacy of the Hauser-type model can in practice result in the question of the choice between these alterative models on the same data.

Faced with the choice amongst each competing models, McDonald (1983) proposed three possible strategies to follow. One would be to compare fit across different data sets. Another would be to locate additional formal theoretical criteria to distinguish between models. The third would be to examine the models for substantive theoretical sense. Of the three strategies, the one McDonald finally recommends is the third one: namely to examine the models for substantive theoretical sense. Pöntinen (1982: 106) reaches a similar conclusion; Pöntinen's proposed strategies are (1) to develop models

which can give more direct support to the theoretical ideas, and (2) to clarify the theoretical ideas and their relation to the structure of the corresponding model.

The emphasis on the theoretical relevancy of the models is shared not only by the critiques, but also by the two most influential proponents of the approach. Hauser himself writes that,

> "I do not believe that a model consists only of a set of expected values, but it also (and mainly) consists of the structure or story that we use to interpret and explain those expected values... Most of the time, a model is no more than a vehicle for rendering a complete and internally consistent interpretation of a body of data in light of the ideas we draw from observation, theory, convention, or whatever...The real question, then, about the structural models of British and American mobility tables, is whether they tell a story worth hearing" (Hauser, 1981: 576-7).

Goldthorpe and his colleagues' works (for example see Goldthorpe, 1980: 98-108) are more inclined toward establishing theoretical relevancy of the mobility research in general, and of their models in particular. However, we cannot but get the impression that much of their efforts do not escape the realm of ad hoc explanation of what they find in the data. This seems to be due to the lack of rigor in their efforts to match the data with the theoretical concepts to explain the mobility regime.

Theoretical explanation should be more than only ad hoc explanations aided by theoretical insights. It should be based on explicitly stated theoretical concepts with some degree of rigor. In order to achieve our goal in studying mobility regime, we should first start with an a priori model based on a set of strong assumptions about the likely patterns of associations and dissociations between occupational classes in a given societies (for example, see Jones et al., 1990).

An important contribution in this respect was made by Erikson and Goldthorpe several years ago. Of all the important developments in mobility research that we have witnessed since the introduction of the "first-generation" (Stier and Grusky, 1990: 737) models in late 1970's, this piece of contribution would be placed among the top. In a two-part paper (Erikson and Goldthorpe, 1987a; 1987b), they presented a mobility research based on an a priori model with some strong assumptions about the structural pattern of mobility regime and process that generate the structural pattern. They write,

> "The main difficulty that has thus far been evident in the application of

> topological models to mobility tables has concerned the criteria according to which the allocation of cells to different interaction levels is made. . . The interaction level... may then appear to be only rather loosely guided by theory or indeed quite ad hoc and arbitrary. Consequently, problems of interpretation are likely to arise... In an attempt to minimize the difficulty in question, we propose here a topological model... based not on a single levels matrix but rather on a number of such matrices, each of which is designed, in a theoretically informed way, in order to capture a specific effect exerted on a pattern of relative rates. Thus, we believe, in a model of this kind the rationale for the allocation of the cells of the mobility table to different interaction levels is necessarily made more explicit and, in turn, the results of modelling exercises should be open to interpretation in a far more direct way"[7] (Erikson and Goldthorpe, 1987a: 64).

Erikson and Goldthorpe's new model, which they call "'multi-matrix' topological model, is different from both Hauser's and their own old one in the following aspects.[8] First, the new model explicitly states the rationale for association of cells to different levels by assigning each of them a clearly stated specific theoretical concept. Secondly, the new model employs multiple matrices of binary levels, each of which represent one theoretical concept, as compared to the single matrix of multiple levels. Thirdly, in the new model, each cell can in principle be allocated to as many binary level matrices as the researcher hypothesizes,[9] whereas in Hauser's approach each cell is allocated to only one level. As such, relative mobility rates of each cell is determined by the sum of all the relevant level parameters of the cell, whereas in Hauser's approach it is determined by the level parameter alone, to which the cell is allocated.

In effect, their new model partitions each of interaction parameters of the cells by a set of conceptual levels. The surprising thing is that we can attend to more of a theoretically detailed explanation of the mobility regime without sacrificing the parsimony of models. For example, Erikson and

[7]Emphasis is from the original text.

[8]According to one researcher (Cha, 1987), Erikson and Goldthorpe's new model represents the shifts in their position not only in methodological sense, but also in substantive sense. Cha found that the some of the final interaction parameters, calculated as a sum of the level parameters relevant in each of the cells, in their new model show several large deviations from their counterparts in the old model based on the same tables in Erikson, Goldthorpe, and Portocarero (1982). The deviation is the most conspicuous in inheritance of farm workers, mobility from farmers to farm workers, and the pattern of mobility within each of the nonmanual and manual classes.

[9]Hence, it has been called by some researchers an overlapping levels model. See Chant and Western (1991:258).

Goldthorpe (1987a; 1987b) was able to fit the mobility tables of 7-class schema with no more than 8 interaction parameters.

Intergenerational Mobility Models and the study of Career Mobility

In the previous section, I have reviewed some of the important methodological developments during the past decades or so in the field of mobility research. In it, I have argued that the approach initiated by Goldthorpe and his colleagues shows a promise in enhancing the possibility of theoretically informed substantive interpretation of the empirical aspects of the mobility research.

In considering the substantive relevance of the previous research, especially those of Erikson and Goldthorpe (1987a; 1987b), in the context of the current one, a couple of questions need to be answered.

First, the class schema employed in their research is different from the one in the current study. Theirs is a 7-class schema, while the one in this study is a more aggregated one, 5-class schema. It is obvious that the models in the mobility research are heavily context-dependent. A well-fitting model, and concepts in it, in the context of 7-class mobility tables does not necessarily fit the 5-class mobility tables.

Secondly, but more importantly, it is not correct to assume that the models, such as Erikson and Goldthorpe's, developed to explain the intergenerational mobility patterns to be equally relevant in explaining the intragenerational or work-life mobility patterns. Fundamental difference between the intergenerational mobility and the intragenerational mobility is that in the former each of the phenomena, that of mobility/immobility, which we are observing is carried out not by a single individual: there is a shift in the agent who are being observed. In the intergenerational mobility, it is father at the origin and the off-spring, usually a son, at the destination, whereas it is a same individual in the intragenerational mobility table.[10] As such, the mechanisms behind the mobility/immobility are quite different in two kinds of mobility. What makes person A at time C and person B at time D be in the same or different class is not to be confused with what makes person A alone at time C and D be in the same or different class.

Stier and Grusky (1990) correctly argued that the imagery of mobility regime employed in the study of intergenerational mobility pattern cannot

[10]This is behind the reason why some analysts (for example, Sørensen, 1990; Stier and Grusky, 1990) look for intragenerational rather than intergenerational mobility table for the study of demographic identity of classes, such as homogeneity and stability of class membership, and class structuration (see Giddens, 1973).

adequately explain the career mobility pattern. They observe that the imagery of intergenerational mobility in the mobility studies has been that of gradational socioeconomic metric. Given the historical trend in the industrial societies of diminishing direct intergenerational inheritance of socioeconomic positions, but increasing indirect transmission of resources mostly via schooling and various forms of social and cultural capital (see Bourdieu, 1982), it is not difficult to see the intergenerational mobility regime dominated by inheritance of positions along the gradational socioeconomic metric. However, intragenerational mobility is dominated by the force of persistence, which would be equivalence of direct inheritance in intergenerational mobility, and no force equivalent to intergenerational indirect inheritance is functioning in intragenerational mobility. Hence, as they argue, it is the case that "the same type of socioeconomic imagery may not be equally appropriate in describing patterns of mobility and persistence within the life-course of individuals (i.e., "career mobility")" (Stier and Grusky, 1990: 737).

A New Model of Structural Patterns of Career Mobility in Industrializing Society

The inadequacy of applying the conceptual models developed in the context of intergenerational mobility table to the analysis of career mobility patterns has been pointed out in the previous section. In this section, we will develop the concepts that form the basis of a model of career mobility pattern.

The model I am pursuing here takes the form of multi-matrix topological model of Erikson and Goldthorpe (1987a). In this type of model, the relative mobility chances reflected in the interaction parameters are partitioned into a number of binary level matrices, each of which stands for a separate concept. Thus researchers are enabled to directly represent the mobility patterns and processes behind them with a number of conceptual effect parameters.

Erikson and Goldthorpe (1987a; 1987b; also see Ishida, Goldthorpe, and Erikson; 1991) proposed a model of intergenerational mobility pattern consisting of eight binary matrices representing a set of concepts which includes hierarchy, inheritance, sector, and affinity. This set of concepts were picked to represent the differences in desirability, advantages, and barriers within a structure of class positions. Chant and Western (1991) also proposed an intergenerational mobility pattern model with five binary matrices representing the concepts such as diagonal, property, skills, and affinity. In both models, we find that the concept of affinity is being used in

place for an ad hoc explanation of the residual pattern of association or dissociation.

In devising a conceptual model that represents the pattern of career mobility in a person-year mobility table, I suggest that we should follow two basic strategies. The one is that the model should be able to distinguish the patterns of immobility in the diagonal cells and the pattern of mobility in the off-diagonal cells. The reason for it is twofold. First, when compared to the intergenerational mobility pattern, career mobility pattern is more dominated by the immobility rather than by mobility. In all the study of the career mobility, we find the heavy concentration of the observations in the diagonal cells. For example, Broom and Jones' (1969) study, working with the standard mobility tables from the three country data gathered in the mid-1960's, showed that within the context of three-category occupation model of nonmanual-manual-farm, the career immobility is as high as 83% in Italy, 68% in Australia, and 62% in the US. Lipset and Bendix (1959: 168), working with the cumulative job change table from the 1949 Oakland mobility data, reports that the 75% of the career job changes takes place within the same occupation in the context of three-category occupation model of nonmanual-manual-farm. Compare the figure of 75% to what Lipset and Bendix (1959: 100), deriving from 1947 NORC data, reports in the same book; at around the same time the intergenerational immobility in the US was only 56%. Likewise, Featherman and Hauser (1978) working from the OCG data, reports that in the context of 17 occupational groups the career immobility is as high as 30% (Featherman and Hauser, 1978: 120) whereas the intergenerational immobility is only 14% (Featherman and Hauser, 1978: 113) in the US in 1973. They (Featherman and Hauser, 1978: 188) write, "the levels of persistence varies between mobility classifications; in most cases immobility is greater within the career than between generations." Likewise Goldthorpe, working from the 1972 Oxford mobility data, reports that in the context of three-class model[11] the career immobility is 58%, whereas the intergenerational immobility is only 51% in Britain.[12] All of these findings confirm the fact that at least in contemporary capitalist society, the career mobility pattern is more dominated by the immobility than intergenerational mobility pattern is. As such, the need to distinguish the pattern in diagonal cells from that in off-diagonal cells is more salient in career mobility study.

[11]The model is a more aggregated version of their usual seven-class model. The model consists of service class, intermediate class, and working class.

[12]Both figures were calculated by the author from the tables in Goldthorpe (1980: 105 and 123).

Secondly, in person-year mobility table, the size of the diagonal cells is heavily dependent on the unit of time. The finer the unit of time, the more observation we have in the diagonal cells. The unit of time in the analysis, though I strongly argue that a year is an appropriate unit in both substantive and practical sense, is somewhat arbitrary: there is no one correct answer. On the other hand, the event of mobility, which we record as a count in off-diagonal cells, is not affected by the unit of time in the analysis. As such, we need to pay a close attention to control out the effect of being in diagonal cells from that of genuine mobility.

In an attempt to build up a model of career mobility, I begin by distinguishing two groups of conceptual factors related to the career mobility. The first group of them encompasses those factors which enhance the relative chances for mobility. The second group consists of those factors which restrict the relative chances for mobility.[13] Each of the conceptual factors that enhance the relative mobility chances is translated into a binary level matrix, in which the cells relevant to the concept is distinguished from the rest. We expect a positive coefficient for those relevant cells, and the coefficient of zero in log-scale for the rest of the cells. In the binary level matrix of the factor that restricts the relative mobility chances, we expect a negative coefficient for the relevant cells, and the coefficient of zero for the rest of them. The relative mobility chances for a particular cell is determined by the sum of the coefficients relevant to the cell. Each of the specified conceptual factors and the combination of them in the entire table reflect the arrangement of reward and accessibility among occupational positions in contemporary Korean society. Figure 2 shows a set of binary level matrices specified to capture the relative career mobility pattern.

Of the factors that enhance the relative mobility chances, we first turn our attention to the ones that act exclusively upon the diagonal cells. As we argued earlier, there is a strong tendency of immobility in all the mobility table, particularly in the person-year career mobility table. The general tendency of immobility in all diagonal cells is termed as persistence here. The persistence effect pertains to all of the main diagonal cells to the same degree, as we see in Figure 2.

The second of the factors that enhance the relative mobility chances within the same category, i.e. immobility, is termed as ceiling. Ceiling effect pertains only to the upper-left corner cell of Upper Nonmanual occupations. It represents the fact that since the Upper Nonmanual occupations are at the top of the reward structure among various occupational positions,

[13]For a similar approach, see Jones et al. (1990).

A. Factors that enhance the relative mobility chances

(1) Persistence

	U	L	S	M	F
UNM	**1**	0	0	0	0
LNM	0	**1**	0	0	0
SEM	0	0	**1**	0	0
MAN	0	0	0	**1**	0
FAR	0	0	0	0	**1**

(2) Ceiling

	U	L	S	M	F
UNM	1	0	0	0	0
LNM	0	0	0	0	0
SEM	0	0	0	0	0
MAN	0	0	0	0	0
FAR	**0**	**0**	**0**	**0**	**0**

(3) Traditional Sectors

	U	L	S	M	F
UNM	0	0	0	0	0
LNM	0	0	0	0	0
SEM	0	0	**1**	0	0
MAN	0	0	0	0	0
FAR	0	0	0	0	**1**

(4) Nonmanual Occupations

	U	L	S	M	F
UNM	**1**	**1**	0	0	0
LNM	**1**	**1**	0	0	0
SEM	0	0	0	0	0
MAN	0	0	0	0	0
FAR	**0**	**0**	**0**	**0**	**0**

(5) Alternative Channels

	U	L	S	M	F
UNM	0	0	**1**	0	0
LNM	0	0	**1**	0	0
SEM	0	0	0	0	0
MAN	0	0	**1**	0	0
FAR	0	0	0	0	0

(6) Alternative Channels II

	U	L	S	M	F
UNM	0	0	0	0	0
LNM	0	0	**1**	0	0
SEM	0	0	0	0	0
MAN	0	0	0	0	0
FAR	**0**	**0**	**0**	**0**	**0**

B. Factors that restrict the relative mobility chances

(7) Distance

	U	L	S	M	F
UNM	0	0	0	**1**	**1**
LNM	0	0	0	**1**	**1**
SEM	0	0	0	0	0
MAN	0	0	0	0	0
FAR	**1**	0	0	0	0

(8) Distance II

	U	L	S	M	F
UNM	0	0	0	0	0
LNM	0	0	0	0	0
SEM	0	0	0	0	0
MAN	0	0	0	0	0
FAR	**1**	**0**	**0**	**0**	**0**

FIGURE 2. LEVEL MATRICES ON CAREER MOBILITY PATTERNS

incumbents tend to form a closure (see Parkin, 1979; also see Goldthorpe, 1980: 42-46) and show a strong tendency not only of immobility but also of barrier toward the outside. The ceiling effect is assumed to be working in addition to the more general effect of persistence shared by all diagonal cells.

The third of the factors that enhance the relative mobility chances within the same category is termed as Traditional Sector. The traditional sector effect pertains to the diagonal cells of both Self-Employed and Farmers classes. I have set these two cells together and conceptualized them as traditional sector. The reasons why I expect the Self-Employed and Farmers classes together should show an additional amount of tendency of immobility on top of what has been depicted by the general effect of persistence are the followings. First, they encompass the traditional work positions, such as farming and petty commodity production. In most cases, the person or his/her family directly owns the means of production for themselves, however small that is. Secondly, in many cases, they lack the human capital resources that will enable them to gain access to other employment situations. Thirdly, some of them have a different attitudinal characteristics that make them incompatible with the occupations in modern sector of employment. The characteristics include both positive ones such as creativity, independence, and the need for achievement, which are usually ascribed to entrepreneurship, and negative ones such as the lack of discipline, weak commitment to the long-term work positions, and unfamiliarity with the modern work environment. Particularly, the Self-Employed class is the one of proprietorship which Blau and Duncan (1967: 41) emphasized as a condition facilitating immobility for both economic and psychological reasons of a stronger occupational investment and commitment than mere employment. All of the positive and negative characteristics function to deter the mobility of the people between the traditional sector occupations and the modern sector occupations. Fourthly, in the case of Farmers, their geographical and social isolation from the major institutional channel of mobility and the opportunity of employment in modern society forces them to be more immobile than others.

Of the factors that enhance the relative mobility chances, we now turn our attention to the ones that act upon the off-diagonal cells. The fourth factor specified here is the effect of Nonmanual Occupations Block. Three kinds of rationale are working behind the specification of the mobility amongst the two nonmanual occupational groups as being affected by an additional factor to the ones in other cells. First, these two occupational groups are at the top of the reward structure among occupations. In this sense, the

nonmanual block designates the second and broader ceiling effect. Secondly, in most cases the two occupational groups share similar kinds of requirements of educational qualifications and occupational skills. Thirdly, we find many institutionalized arrangement of mobility channels between these two occupational groups, and mobility barriers against the people in other occupational positions, especially those in Manual Workers occupations and Farmers.

The fifth factor specified as to enhance the relative chances of mobility is named Alternative Channels. Here our presumption is that the effect of another kind of persistence factor works at another level other than the one we tried to capture at occupational class level. That other level is the one of the division between the bureaucratic and entrepreneurial sectors (see Lipset and Bendix, 1959; Koo, 1976; Hong, 1980). The bureaucratic sector (or organizational sector) encompasses the Upper Nonmanual, Lower Nonmanual, and Manual Workers occupations. Entrepreneurial sector consists of occupational positions in Self-Employed class. The expectation is that people tend to stay in the sector they are currently in. However, when people in the bureaucratic sector do move out of the their current occupational class, there is a strong tendency for them to move into entrepreneurial sector, namely into the Self-Employed occupations. This particular avenue or channel of career mobility has been documented by many previous researchers. Lipset and Bendix (1959) stated that for manual workers, the mobility into the self-employed position in small businesses is an important form of upward mobility. Analyzing Oakland mobility data, they found that many people from the manual working positions moved into self-employed positions. Not only that, but they also found that more people in the manual and sales work positions have business aspirations than those in nonmanual work positions. Indeed it seems that the mobility path to self-employed position is the one most manual and sales workers would like to take.

Not only is there a mobility channel from Manual Working occupations to the Self-Employed, but there also is one from two nonmanual classes to the Self-Employed. Unlike the case of mobility from the Manual working class to the Self-Employed, however, it is not clear whether most of the movements from nonmanual positions to self-employed positions reflect the upward mobility. Anderson (1955), analyzing the Swedish data, showed that those white-collar workers who became small-scale businessmen instead of remaining in a bureaucracy were among the least educated of the white-collar workers. Koo (1976) and Hong (1980) show the similar pattern with Korean data. KNMS data also confirms the point. The educational level

of those who moved from nonmanual positions to self-employed positions were clearly lower than that of those who stayed or moved within the nonmanual positions. That is, for those in nonmanual positions who face a grim prospect of upward mobility within their own occupational classes, the self-employed positions in entrepreneurial sector function as an alternative to the bureaucratic channel of mobility.

Another evidence of the self employed positions serving as the recieving end of an alternative mobility channel is found in the flourishing of entrepreneurial activities among immigrants to the U.S. For the immigrants who are dislocated from the mobility venues within the organizational sector, self-employment plays a major role in enhacing their economic and social positions. (see Light, 1972; Bonacich, 1986)

Although the mobility into the self-employed position means an upward mobility for most of those in manual positions, it is not that everyone in the manual and sales work becomes the self-employed. It has been well documented that one of the biggest obstacles for many manual workers in becoming the self-employed is the liquidity constraint (Evans and Jovanovic, 1989). It is a basic prerequisite that capital is essential for stating a business and liquidity constraints tend to exclude those with insufficient funds. However, the situation could be a little different in a developing society like Korea than in an advanced industrial society such as the US.

As Koo (1976) has well pointed out, one of the most striking changes associated with the rapid urbanization in developing countries has been the burgeoning of small-scale entrepreneurship. And in the context of developing countries, it means that the urban surplus labor, which has come to existence due to the rapid overurbanization, has been absorbed into the Self-Employed positions.[14] This is reflected by the fact that most of the Self-Employed in developing countries are no more than one-man operation. Indeed KNMS data shows that during the 30-year period, 79% of the Self-Employed were own-account workers with no employee. Only 10% of them had one or more employee, whereas 12% of them were family workers without pay. Indeed the Self-Employed class in Korea has been a cluster of petty-scale operations, majority of which were in some kind of small-scale sales activity.[15] As such, the liquidity constraints that the potential mover into the Self-Employed class will face is not as severe as in other advanced

[14]See Oshima(1970) for the relevant discussion on the relationship between labor force explosion and the "labor-intensive sector" in the context of historical experience of economic development in Asian countries.

[15]64% of them have been in production service industrial sector, in which the majority of jobs were in sales.

societies. Hence, the mobility from other occupational classes to the Self-Employed class should be even easier and more likely in a developing country such as Korea than in advanced countries.

Precisely due to the same reason of relatively weak constraint of liquidity, the Self-Employed class in Korea works not only as an alternative mobility channel but also as a buffer[16] of mobility for both manual and nonmanual class members. As we see in Table 3, for the movers from the Lower Nonmanual class and Manual Workers class, the Self-Employed class is the largest class of destination. For the movers from the Upper Nonmanual class, the Self-Employed class is the second largest destination only after the Lower Nonmanual class. That is, the Self-Employed class, being located roughly between the Lower Nonmanual class and the Manual Workers class in the hierarchy of classes, absorbs the movers from either side of the hierarchy and thus prevents the long-range mobility of either upward or downward.

Above discussion about the mobility paths from the nonmanual and manual occupations into the self-employed ones lead us to hypothesize that the existence of alternative mobility channel affects, i.e. increases, the number of observations we find in three relevant cells in the table (see Figure 2). Not only do I hypothesize that there are alternative mobility channels, but also I hypothesize that the relative chances of mobility in each of these three mobility channel cells are equally strong. It is reflected in that I assigned all three cells at the same interaction level. That is, the model says that the Self-Employed class is relatively open to all classes except Farmers in terms of the relative chances of moving into it.

Note, however, that unlike other effects specified in Figure 2, the effect of alternative mobility channels is specified to be asymmetrical.[17] In fact, the

[16]According to Goldthorpe (1980: 47), the buffer-zone of mobility is the division between manual and nonmanual occupations that works as a fundamental line of cleavage within both the occupational hierarchy and the class structure, and as one which is of major importance in preventing mobility of long-range kind. See Goldthorpe (1980: 46-54).

[17]This goes against Hauser's (1978) recommendation that symmetry be one of two formal principles that should be followed in model specification. (The other is parsimony.) Symmetry, which according to Hauser (1978:934) "implies homogeneity between occupation distributions of (origins) and (destinations) as well as equality of the interactions pertaining to upward and downward movements within each pair of occupations", is introduced into the model specification procedure both on theoretical grounds, as a plausible basic premise for the mobility process, and as a device to minimize sampling perturbations in the data (see McDonald, 1983). Although, however, minimizing the asymmetry does bring about the advantage of encouraging parsimony, there is no substantive ground for stressing symmetry as a guiding constraint in model specification (see Pöntinen, 1982: McDonald, 1983: Jones et al., 1990). Indeed the model proposed here presents an example of a substantively meaningful

level matrix 5 in Figure 2 says that there is no difference in relative chances of mobility from the Self-Employed class into any other classes, whereas the relative mobility chances into the Self-Employed class are different in different origin classes. This specification is a reflection of the fact that for some people the Self-Employed class is an absorbing state, i.e. a career destination, while for others it is an entry point, a temporary position, or even a shelter[18] in their work career.

To see this point more clearly, we need to understand the composition of the Self-Employed class and the characteristics of those who move into or out of the Self-Employed class. In KNMS data the Self-Employed class consists of the 79% own-account workers, 10% employers, and 12% not-paid family workers. Looking at the outflow pattern from the Self-Employed class, we find that not-paid family workers are more likely to move out than own-account workers and employers (4.4% vs. 2.6%). Also more men than women, and more younger people than older people tend to move out. The emerging picture is that the typical group of people who move out of the Self-Employed class is a group of young men who started their career as not-paid family workers. For them the Self-Employed class is no more than an entry port of their work career, not the destination. For them, likewise for the people who use the Self-Employed class as a temporary shelter, or those who venture into the Self-Employed class but fail to survive there, there is no particular structurally arranged path of mobility. Collectively, their destination is almost random.

To sum up, I hypothesize that there is a specifically arranged path of mobility from the Upper Nonmanual, Lower Nonmanual, and Manual Workers classes into the Self-Employed class. The path works as an alternative mobility channel for many individuals, while as a buffer for the class structure itself. However, there is no structurally salient differentials in relative mobility chances for people who move out of the Self-Employed class. This is due to the almost anomalous characters of the episode of being in the Self-Employed class for many of them. For them, the Self-Employed class is either a point of entry or temporary episode in their career.

So far we have specified the factors that enhance the relative chances of mobility among occupational groups. Now we will turn our attention to the factors that restrict the relative mobility chances. The only factor we will specify here as a negative effect is the effect of Distance. With this factor, I seek to capture a vague notion of social distances in terms of reward and

and actually existing asymmetrical pattern of mobility.

[18]Note that in many cases the work position in the Self-Employed class is an episodic event.

accessibility between occupational groups.

First, in terms of the reward structure among occupational positions, I selected as representing the negative effect a block of four cells in the upper right-hand corner, which represent the mobility from nonmanual occupations to the manual and farm occupations. Although there is a social distance between nonmanual and manual occupations in any society, it seems that it is more salient in Korea, where the traditional value and stratification system put such a low value in manual work. Hence, I expect that the observed count of mobility in these cells should be much lower than statistically expected.

Secondly, in terms of accessibility, the qualification for the entry into the nonmanual occupations is much higher than that in the manual and farm occupations. Hence the observed count of mobility between these occupations, as found in four cells in the lower left-hand corner, should be much lower than statistically expected. However, there is one exception here. I hypothesized that the mobility from the farm to the Lower Nonmanual occupations has been relatively easier than that of other types of mobility counted in the other three cells. This is mostly due to the fact that expansion of education took place not only in the urban area, but also in the rural area simultaneously. Given the historical experience of continuous massive rural-to-urban migration in Korea, I hypothesize that there would have been no particular barrier to people migrated from rural area as long as they have the educational qualification, which many of them have due to the provision of education in rural area as well.

In the above discussion, I specified six factors that affect the relative chances of mobility. Of the six factors, five were specified to represent the positive effect, in terms of expected parameter estimates in natural-log scale: three factors that pertain only to the diagonal cells, and two factors that pertain to off-diagonal cells. The other one factor was specified in such a way that it represents the negative effect. As we will find in the next section, the model with six binary level matrices, each of which represent each of these six factors respectively, statistically fit the observed counts in the table very well. However, I specified two additional binary level matrices in order to increase the fit of the model, though unnecessary by the traditional statistical criteria. They are Alternative Mobility Channel II and Distance II. These two factors are admittedly ad hoc specification. As we find in Figure 2, each of these two factors stands only for one cells Altogether, the final model I specify consists of eight binary level matrices representing eight conceptual factors that affect the relative mobility chances. Table 5 shows the final model specification. The interesting feature of the specification is

TABLE 5. ALLOCATION OF CELLS TO EIGHT BINARY INTERACTION MATRICES UNDER MODEL 6

Origi/Desti	UNM	LNM	SEM	MAN	FAR
UNM	Persistence + Ceiling + Nonmanual	Nonmanual	AltChannel	Distance	Distance
LNM	Nonmanual	Persistence + Nonmanual	AltChannel + AltChann2	Distance	Distance
SEM			Persistence + TradSector		
MAN	Distance	Distance	Alt Channel	Persistence	
FAR	Distance + Distance 2				Persistence + Trad Sector

that I didn't specify any effect in eight of the total of twenty-five cells so that these eight cells involve no interactions. That is, I specified the model so that the interaction parameters in these eight cells to be zero.[19] These eight cells without a specific interaction parameters are assumed to have expected frequencies consistent only with adjusted marginal effects representing differences in the relative sizes of origin and destination classes. The interaction parameters in other cells should be interpreted in this context, as departures from these eight cells. They are assumed to have expected frequencies consistent with both marginal and interaction effects. We will come back to this point later again.

CONCLUDING REMARKS

In this paper, I first criticized many occupational mobility studies that lack clear conceptual justification of the modeling procedure. Even on the methodological ground, standard statistical procedures of the model fitting in hitherto mobility table analysis can be quite arbitrary in that it ignores the problem of indeterminacy in log-linear models.

[19]The interaction parameter for these cells becomes zero only when we use the dummy coding, rather than the effect coding, as a constraint for the normalization of estimation equation. This point will be discussed in depth later.

In analyzing the relative mobility patterns which remain after we control for the effects of the marginal distributions in the person-year mobility tables, I argue that the conceptual models devised dor the study of intergenerational mobility cannot be directly applied to the study of career occupational mobility. Models for the study of career mobility patterns should reflect both labor market perspectives and life history perspectives.

Following such argument, I proposed the decompopsition of mobility effects into six conceptually distinguishable factors: Persistence, Ceiling, Nonmanual Occupations, Traditional Sector, Alternative Channels, and Occupational Distance. A career occupational mobility model based on such six factors can be analyzed in the context of "multi-matrix" topological log-linear models.

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