An Introductory Study of Transfer Migration

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C O N T E N T S

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F I G U R E S

A B S T R A C T

Migrations due to intraorganizational job transfers constitute one of the most important movements of employed workers in contemporary Japan. This paper explores this phenomenon by using the results of a survey conducted by the Institute of Population Problems in 1986. By examining the relationship between reason of last migration and migrant's attributes, we have outlined the characteristic features of Japan's transfer migrants. After discussing the effect of distance and its relationship to the urban hierarchical system, the possible empirical regularities of transfer migration in general are sought.

I. Introduction

Basic data on human migration has generally been published in the form of district-to-district movements deduced from changes in settled places of residence during a given specific period. As is well known, however, such data have limitations in any minute examination of migration behavior by individual/household, because they are a mere total of behavior by each individual or household as a unit of actual movement. Besides, there have been few longitudinal surveys of population movements. Even in regard to some exceptionally available sources, their sample size is usually too small.

Given these problems in obtaining migration data, the national survey on migration held in October 1986 by the Institute of Population Problems, Japanese Ministry of Health and Welfare, is of considerable significance. Thanks to its coverage of both migrants and nonmigrants, the survey leads to a breakthrough of the issues and has the advantage of making possible the calculation of migration rate. Based on this source, source, source, this paper seeks to explore *tenkin-ido* (migration due to intraorganizational job transfer), which presently happens to be one of the most important forms of mobility among Japan's employed workers.

The results of the survey have already been embodied in the main report published by the Institute of Population Problems (1988) and in the form of summary highlights (Hiroshima and Bando, 1988). Yet, despite their extreme usefulness as an overview, their simple tabulations in respect to migration resulting from organizational decision-making are quite insufficient. Due to the unavailability of original microdata by each household in the survey, there is a particularly serious drawback in that we are not able to discern the interrelations among plural categorical variables, including reasons of migration, which include job transfer as one of the categories. Another investigation, in which reasons of migration are included and which was conducted recently by the National Land Agency (1982), does provide cross-tabulated data between the reason and other variables, but it also is not free of the aforementioned deficiency. It is, therefore, very fortunate that I was given the opportunity

to use the original microdata source of the Institute's 1986 survey by Prof. Hiroshi Kawabe, who was the supervisor of the study project at NUPRI (Nihon University Population Research Institute).

This paper is organized as follows: In the second section, the importance of transfer migration is discussed in reference to previous investigations. The third section is devoted mainly to exploring significant difference of migrants' attributes between transfer and the other reasons for all household heads with migration experience. In the fourth section, after the discussion about distance effect and its relationship with the urban hierarchical system, possible empirical regularities of transfer migration in general are sought. The results obtained are summarized in the final section.

II. Importance of Transfer Migration Studies

The importance of focusing our attention to the study of transfer migration, which implies change of usual place of residence owing to a reshuffling of personnel within a given organization, whether of a private corporation or a governmental office, can be boiled down to the following two points:

First, it seems that this form of migration adds up to a considerably high rate in the whole volume of internal population flows. For instance, according to the sample survey on migration conducted in autumn 1981 by the National Land Agency (1982, p. 51), of 5,206 migrants (15-75 years old) who moved in the past one year, job transfer (including *shukko* or job-loan from one organization to another) occupies 22.4%, followed by marriage (12.1%). In particular, for those aged between their thirties and fifties, the proportion of transfer is much greater both for males and females than that of migrants having other reasons of migration (Kawabe, 1991, pp.13-14).

Although it seems that foreign countries are not rich in the availability of similar figures, they have not necessarily been nonexistent. For example, in the U.S., 23.8% of household heads who migrated between states moved as a result of job transfers, and 34.0% of male household

heads aged between 35 and 54 years moved for this very same reason (Flowerdew, 1982). According to the sample survey for 551 households who moved into four cities in Britain in 1970-71, job transfers accounted for 28% (Johnson and Salt, 1980). Moreover, the Malaysian Family Life Survey conducted in 1976-77 reveals that the proportion of transfers was 18% in respect to main reason of last migration (Menon, 1987).

In addition to these findings, which were observed in a particular period, McKay and Whitelaw (1977) and Sell (1983) suggested a temporarily increasing role of transfer movement made at the behest of private and governmental organizations in alliance with the growing tendency toward postindustrial economy in the advanced countries. Worthy of note in relation to this point is the prominent role of interurban population flows --a function closely associated with the rate of increase in urban population and the tertiarization movement in the urban economy: transfer stream is considered to be the leading part of such flows (Ishikawa, 1979; Sell, 1982).

The second significance of examining transfer migration is related to the fact that the flow is representative of "forced" or nonspontaneous migration, implying that the potential migrant is not in the position to choose his/her specific destination by himself/herself: in substance, it is the organization he/she works for that selects the destination (Yamamoto, 1984). In previous studies, especially on migration modeling, it had implicitly or explicitly been assumed that the potential migrant was guaranteed the freedom of destination choice, partly due to the inadequate situation regarding the comprehensive source of reason-specific data. A variety of logit models, which, based on reasonable behavior derived from utility-maximization, constitute one of the major research frontiers in contemporary migration studies, are also confronted by this problem (Ishikawa, 1988, pp. 157-158).

The validity of this viewpoint seems to be supported by previous empirical research on nationwide human migration in Japan. For example, an investigation using a nested logit model postulating free destination choice has revealed that a convincing explanation of the results would have been difficult unless multibranch network of corporations--in which transfer flows occur--had been taken into account (Ishikawa, 1989a).

Furthermore, the necessity of devoting attention to this migration category ascribable to organizational decision making is also suggested by Matsukawa's (1991) finding that, out of the four different streams (rural-rural, rural-urban, urban-rural and urban-urban), only the urban-urban stream--a large portion of which corresponds to the stream among the three metropolitan areas in Japan--is characterized by lower goodness-of-fit than other streams in log-linear regression framework. Such a performance might probably be due to a failure in incorporating the institutional effect on human movements.

Spatial mobility of population in the real world is no doubt filled with restraints which restrict free choice: e.g., location of branch offices in respect to transfer movement of employed persons, the distribution of universities in respect to enrollment flows, the housing market in the event of residential mobility and so on. It may be safe to say that perfect freedom of destination choice is rather exceptional. Hence, the exploring of transfer migration flows is expected to serve as a promising clue leading to a clarification of the entire constrained behavior of migration.

Given the two vital implications of focusing on transfer flows in both their quantitative and qualitative aspects, as have been suggested above, the existing literature treats the subject too coolly and lightly, as is demonstrated in Swindell and Ford (1975). As far as geographical studies made in Japan are concerned, exceptions may be the studies made on the reshuffling of blue-collar workers to the Kimitsu Steelworks of Nippon Steel Corp., and on job transfers involving those in managerial positions at Sumitomo Bank and the officials of the Ministry of Construction (Ito et al., 1979, pp.172-193), the paper on the personnel reshuffles involved in reverse migrations from large metropolitan to local, provincial areas (Wiltshire, 1979), and the painstaking study which traces the personnel reshuffles that took place in the wake of production cutbacks at the Kamaishi Steelworks of Nippon Steel Corp. (Wiltshire, 1992). Besides, although the *tanshin-funin* phenomenon, (wherein individual transferees proceed to their new posts by leaving their families behind in their previous places of residence) is currently posing a major social problem in Japan (see, for instance, Ministry of Labor, 1991), the

overall picture of transfer migration, which embraces the aforementioned phenomenon, has yet to be produced clearly. In short, despite its potential importance, the study of transfer migration constitutes, as it were, a *terra incognita* in the area of migration studies.

When all things are taken together, the cause of this lag can be seen as having resulted from the lack of comprehensive, time-series statistical materials susceptible of being subdivided into specific reasons. Although the Ministry of Labor's Investigative Report on Employment Administration, and the Basic Research Report on Employment Structures by the Statistics Bureau, Management and Coordination Agency, do provide macroinformation on transfer migrations, they, unfortunately, have the drawback of hindering detailed spatial investigation of transfer migration inasmuch as they do not specifically identify the origin and destination of transfers.

Incidentally, insofar as concerns migration research in Japan in recent years, inquiries have shown a general trend of shifting from general studies, which ignore reasons of migrations and the attributes of individual migrants, to more microlevel studies, which focus on migrations that are homogeneous in content by identifying the reason of migration and migrant's attributes. The growing interest in migration of the elderly (Uchino, 1987; Otomo and Ito, 1988; Sakai, 1989), females (Uchino, 1984) and *tanshin-funin* (Yamamoto, 1987) can be seen as examples of this trend. And such works as those on the changes in age composition due to past fertility fluctuations (Ito, 1984; Ishikawa, 1992), on cumulative migration rate by cohort (Kawabe, 1985), and on the specification of model migration schedule (Kawabe, 1991; Inoue, 1991) all reflect, at bottom, a strong concern over migrant's age. Moreover, the earlier cited work by Ito et al. (1979) can be credited as having been the first step in this trend toward a more microlevel analysis in that it was oriented to the analysis of different migration patterns in terms of specific migrant attributes and specific reasons.

Inasmuch as migration observable at the macrolevel is a summation of a host of migrants, each having their various attributes and reasons, a multifaceted approach, such as is implied by the above-mentioned works, most certainly contributes to advancing studies in migration. This pa-

per, which focuses on migration deriving from job transfers, is in line with this recent trend.

III. Attributes of Transfer Migrants

The latest survey by the Institute of Population Problems gives detailed information on the migration histories not only of present household members but also of children living separately or, having once left, and then having returned to live together. However, the most abundant information relates to the household head. Our study will thus focus on the migration history of household heads. Moreover, it is in respect to the movement to the present address (hereafter called last migration) that the reason for migration can be grasped clearly. The respondent was asked to check the major reason, and secondary one(s) if he/she had any. Since the majority of respondents failed to give any secondary reason(s), our analysis will be restricted to the major reasons for last migration by household heads.

In order to examine the relationship between (or, conversely speaking, the independency of) the reason for migration and migrant's attribute, the results will be presented in the form of a two-dimensional contingency table. If the reason-for-migration variable, which has two categories of transfer and other reasons, and the variable, migrant's attribute, are perfectly independent, each cell of the table must have a theoretically expected frequency, which is exactly in proportion to the marginal totals of the cell's row and column. Otherwise, it has the frequency different from the expected one. The measure of the degree of such an independency is X^2, which is defined as follows (Yasuda, 1969, pp. 51-55; Okuno, 1977, pp. 83-86; Yanagawa, 1986, pp. 37-38):

$$X^2 = \sum_{i=1}^{I} \sum_{j=1}^{J} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \qquad (1)$$

where O_{ij} is the observed frequency with reason i and attribute j, E_{ij} is its theoretical frequency, I and J are the category sizes, respectively,

of the reason variable and attribute variable. E_{ij} is defined as follows:

$$E_{ij} = n \times \frac{\sum_{i=1}^{I} O_{ij}}{n} \times \frac{\sum_{j=1}^{J} O_{ij}}{n}, \qquad (2)$$

where n is the total sample size. When n is large enough and every cell has the value of five or more, X^2 is asymptotically x^2-distributed with the degree of freedom [(I-1)(J-1)]. If $x^2_{\alpha}[(I-1)(J-1)]$, the critical value of x^2 at α significance level, is less than X^2, we can conclude that the two variables are significantly related. To make the asymptotation better, the following Yate's correction will be utilized:

$$X^2 = \sum_{i=1}^{I} \sum_{j=1}^{J} \frac{(|O_{ij}-E_{ij}|-0.5)^2}{E_{ij}} . \qquad (3)$$

The merit of the X^2 statistic is its ability of significance testing but it also has the shortcoming that, because its value depends on the degree of freedom or size of the variables' categories, it is not an absolute measure of independency. To remedy this drawback, the following Cramer's coefficient is also shown:

$$v = \left[\frac{X^2}{n \times \min(I-1, J-1)} \right]^{\frac{1}{2}} .$$

With regard to 2-by-2 contingency table, it is equivalent to

$$\phi = \left[\frac{X^2}{n} \right]^{\frac{1}{2}} .$$

Both statistics of v and ϕ are 0.0 for perfect independency and 1.0 for perfect relation. Needless to say, the larger their value is, the more related are the two variables.

The chi-square testing using contingency table is a well-known, conventional method for examining independency between two categorical variables. There has been a proliferation of statistical framework development concerned with categorical data. To cite some examples, the independency test can also be made by paying heed to the interaction effect of log-linear modeling (Matsuda, 1988). An approach to a unified comparison of possible models using Akaike's information criterion as a key concept (Sakamoto, 1985) is also highly interesting. Nevertheless, the reason why we use the conventional method like the contingency table analysis, rather than the above-mentioned recently developed methods, for categorical data in this study is that our primary concern lies in the descriptive-statistical extraction of a general tendency rather than in a mathematical-statistical search for a single desirable model: the study of transfer flows is still in an embryonic stage, implying the importance of the descriptive perspective.

Table 1. Reason-Specific Migration Number

Reason	Number	%
Transfer	524	8.22
Child's entry into school of higher grade	115	1.80
Employment	333	5.22
Change of employment	407	6.38
Take over family business	57	0.89
Marriage	990	15.52
Divorce	87	1.36
Spouse's death	36	0.56
To live with parents	162	2.54
To live with children	21	0.33
Housing situation	2,715	42.57
Child's schooling	40	0.63
Child's education	28	0.44
Others	862	13.52
Total	6,377	100.00

The Institute's sample survey contains 7,825 household heads, among which 6,377 are reported to have moved into their current places of residence for one reason or another: these 6,377 heads of household are regarded as migrants in this paper. Of the remaining 1,448 household heads, 1,170 are those without migration experience since birth, and 278 with missing value for the major reason. (Due to some missing values for the item under consideration, the total number is not necessarily the same for the contingency tables in Table 2). The frequency distribution of the migrants by reason (Table 1) indicates that transfer accounted for 524 household heads (8.22%), ranking third in importance after housing (42.57%) and marriage (15.52%). When compared with the National Land Agency survey, wherein transfer accounted for about a quarter of the total, the aforementioned percentage is considerably lower, although job-loan is not included in the transfer category in our data. One of the reasons for the inconsistency observed in the results of these two sample surveys is that our data is related to only the main reason of migrants who are household heads, whereas the National Land Agency's data cover reasons on the part of all migrants, including not only household heads but also his/her dependents, such as spouse, children and parents.

Next, let us compare the attributes of migrants (household heads), whose last migration was mainly due to job-transfer, with those of migrants who gave other reasons (see Table 2).

Gender: There is a significant relationship between the reason of last migration and gender. Namely, with regard to the transfer category, it reveals that the percentage of males outnumbers that of females.

Educational Attainment: The reason of last migration and migrant's education attainment are also closely related: the tendency is that the better the migrant's educational background, the higher the possibility that he/she migrates due to transfer. In absolute terms, however, senior high school and college/university (including graduate school) graduates

Table 2. Relationship between Reason and Migrant's Attribute

Category	Transfer	Other	Total
Gender			
Male	489 (8.8)	5,088 (91.2)	5,577 (100.0)
Female	35 (3.2)	1,043 (96.8)	1,078 (100.0)
Total	524 (7.9)	6,131 (92.1)	6,655 (100.0)
X^2=37.21 (significant at 0.01 level), ϕ=0.076			
Educational Attainment			
Junior high school	68 (3.2)	2,072 (96.8)	2,140 (100.0)
Senior high School	215 (8.2)	2,398 (91.8)	2,613 (100.0)
Junior college	53 (9.3)	518 (90.7)	571 (100.0)
University	184 (16.2)	954 (83.8)	1,138 (100.0)
Total	520 (8.0)	5,942 (92.0)	6,462 (100.0)
X^2=171.31 (significant at 0.01 level), v=0.163			
Age			
Twenties and under	125 (5.4)	2,204 (94.6)	2,329 (100.0)
Thirties	218 (9.6)	2,061 (90.4)	2,279 (100.0)
Forties	124 (11.4)	965 (88.6)	1,089 (100.0)
Fifties and over	48 (6.7)	668 (93.3)	716 (100.0)
Total	515 (8.0)	5,898 (92.0)	6,413 (100.0)
X^2=47.95 (significant at 0.01 level), v=0.086			
Form of Migration			
Single	26 (4.2)	595 (95.8)	621 (100.0)
Together with family	326 (9.5)	3,105 (90.5)	3,431 (100.0)
Total	352 (8.7)	3,700 (91.3)	4,052 (100.0)
X^2=18.06 (significant at 0.01 level), ϕ=0.068			
Occupation			
Unemployed	48 (4.2)	1,101 (95.8)	1,149 (100.0)
Self-employed	22 (2.2)	979 (97.8)	1,001 (100.0)
Company/corporation executive	34 (6.7)	470 (93.3)	504 (100.0)
Managerial	64 (22.0)	227 (78.0)	291 (100.0)
Professional /technical	81 (12.3)	577 (87.7)	658 (100.0)
Clerical	83 (13.8)	520 (86.2)	603 (100.0)
Sales/service employee	51 (9.4)	491 (90.6)	542 (100.0)
Security personnel	58 (32.2)	122 (67.8)	180 (100.0)
Skilled/manual worker	54 (4.1)	1,257 (95.9)	1,311 (100.0)
Others	29 (7.0)	387 (93.0)	416 (100.0)
Total	524 (7.9)	6,131 (92.1)	6,655 (100.0)
X^2=368.48 (significant at 0.01 level), v=0.235			

Category	Transfer	Other	Total
	Industry*		
Agriculture/forestry/fishery	3 (8.1)	34 (91.9)	37 (100.0)
Mining	1 (4.3)	22 (95.7)	23 (100.0)
Construction	45 (16.6)	226 (83.4)	271 (100.0)
Manufacturing	128 (20.6)	494 (79.4)	622 (100.0)
Wholesale	42 (21.1)	157 (78.9)	199 (100.0)
Retail	35 (13.2)	231 (86.8)	266 (100.0)
Finance/insurance	77 (46.4)	89 (53.6)	166 (100.0)
Real estate	3 (9.4)	29 (90.6)	32 (100.0)
Transport/communication	36 (22.5)	124 (77.5)	160 (100.0)
Electricity/gas/heat supply/water	23 (27.7)	60 (72.3)	83 (100.0)
Service	79 (10.7)	656 (89.3)	735 (100.0)
Government	201 (42.9)	268 (57.1)	469 (100.0)
Total	673 (22.0)	2,390 (78.0)	3,063 (100.0)
X^2=254.45 (significant at 0.01 level), v=0.087			
	Period		
Up through 1960s	74 (4.3)	1,663 (95.7)	1,737 (100.0)
1970s	134 (6.5)	1,932 (93.5)	2,066 (100.0)
1980s	307 (11.8)	2,303 (88.2)	2,610 (100.0)
Total	515 (8.0)	5,898 (92.0)	6,413 (100.0)
X^2=89.32 (significant at 0.01 level), v=0.118			

The figures in parenthesis are the percentages for the row.
*: Transfer includes *shukko* (job-loan).

predominate in this category and account for about three-fourths of the total number of transferees.

Age: Since migrants aged 60 years and above are so few in our sample they are included in the fifties-and-above age bracket. In absolute terms, the main body of job transferees is made up of those in their 30s (over 40 percent of the total). This is followed by those in their 20s and 40s (25 percent, respectively). On the other hand, those in their teens and in their 30s account for the majority of those who migrated for reasons other than job transfers. In terms of the ratio of migration due to job transfers within each age bracket, those in their 40s occupy the largest percentage, followed by those in their 30s, as can be seen

from the table. In other words, these two age brackets have the highest probability of migrating due to job transfers.

Form of Migration: The *tanshin-funin* phenomenon (a form of transfer migration whereby the head of household migrates alone by leaving his/her family members behind at the previous place of residence) is increasingly drawing public attention in contemporary Japan. Although a significant relationship exists between the reason variable and whether or not the migrant is accompanied by his/her dependent(s), the result was contrary to our initial expectation. In other words, as far as we can see from the table, the number of "single" migration due to job transfers is less than those who give other reasons. However, in view of the fact that the *tanshin-funin* phenomenon is said to be most conspicuous among those in their forties and fifties (Ministry of Labor, 1991, p.9), the incidence of "single" migration may be found to be significantly higher if the sampling is limited to just these two age cohorts.

Occupation: Originally, this survey covered 13 occupational categories. But since only a negligibly small number of persons coming under the categories of agriculture, forestry and fishery workers, entrepreneurs in the commercial and industrial service sectors, the self-employed, and working family members of the last two categories are subject to transfer migrations, we have lumped them all under the single category of "self-employed." The top-three types of occupation generating the largest volume of transfer flows are clerical, professional/technical and managerial. Types of occupation which involve a relatively higher rate of transfer migrations are managerial jobs (such as section chiefs and above of major companies and government and public agencies, and school principals), professional/technical jobs (such as technicians, physicians, members of the bench, lawyers, accountants, navigators and teachers), clerical jobs (such as general office workers and typists), and security jobs (such as Self-Defense Force personnel, police officers, watchmen and security guards). As has been frequently cited in previous literature (e.g., Ito et al., 1979, pp. 172-193; Flowerdew, 1982), our study newly attests to the fact that managerial and professional/technical workers

account for the large majority of job-transfer migrations in Japan. We were surprised that those belonging to the remaining clerical job classifications--the so-called white-collars--account for a high proportion of transfer migrations. The high frequency of personnel reshuffles among police officers and members of the Self-Defense Forces also seems to have much to do with the high percentage of transfer migrations among those occupied in security-related jobs.

Industry: Since transfer migration has to do with intraorganizational personnel movements, information on the organizations to which the transferees belong is indispensable for a more penetrative analysis. Regrettably, however, the latest survey by the Institute of Population Problems, having focussed primarily on such demographic data as migration history and reasons for migration, is totally bereft of information on organizations. On the other hand, the survey by the National Land Agency (1982, p.52) is helpful in that it offers cross-tabulated data between reasons for migration and the industries in which the migrants are employed, although the data provided is far from sufficient when it comes to information about specific organizations. A test of significance shows a strong correlation between the two variables. Of the 673 who replied that the major cause of migration was job transfer (including temporary loan transfer), the largest number of transferees are employed by (in the order of absolute size): government, manufacturing, service, and finance/insurance sectors. Moreover, government and finance/insurance stand out as the two sectors which account for over 40 percent of the total on a ratio basis.

The Period: For convenience's sake, the years in which last migration took place are divided into the following three periods: prior to and through the 1960s, the 1970s and the 1980s. This categorization into three periods can tentatively be justified by the fact that internal migration in Japan since the end of World War II can be summarized as follows: the period of drastic population inflow to the nation's three major metropolitan areas up through the 1960s, the balancing of migrations between the major metropolitan areas and the rest during the 1970s,

and the period of a gradual increase in net inflow to the major metropolitan areas in the 1980s (Taeuber, 1964, pp. 128-156; Vining and Kontuly, 1978; Cochrane and Vining, 1988). It is clear from our table that the proportion of migrations due to job transfers is increasing consistently, and that it has shown a particularly large growth during the 70s and 80s. On surface, this finding seems to support the view exhibited by McKay and Whitelaw (1977) to the effect that intraorganization migration (that is, transfer migration) assumes a greater role in postindustrial societies. However, caution is needed inasmuch as the interval between transfer migrations is, broadly speaking, quite short, as Table 3 suggests. Thus there inevitably occurs the bias wherein, the later the migrations surveyed, the greater is the proportion of transfer migrations--such as in the case of our study, which focuses solely on the reason for the last migration. So the aforementioned conclusion that transfer migration is increasing significantly over time needs to be taken with a grain of salt, in respect to our study.

Table 3. Average Number of Migrations by Major Reason

	Transfer	Housing	Others	Total
Transfer	2.75	0.52	0.11	3.39
Other	0.57	1.40	0.69	2.66
Total	0.78	1.32	0.63	2.73

Number of Migration Experienced: The Institute's survey asked each married respondent to give the number of times he/she changed his/her place of residence since marriage (excluding the change involved at the time of marriage) for the following reasons: job transfer, housing situation, and others. Based on this data, the average number of times of migration experienced (except those who have never migrated since birth) are given in Table 3. Among those who migrated for reasons other than intraorganizational job transfer, an outstandingly large number gave

"housing situation" as the main reason for their having migrated. On the other hand, the average number of migrations experienced by those whose reason for last migration was job transfer was 2.7 times, which implies they had experienced repeated transfer migration prior to the last one.

We may summarize as follows: in terms of their proportions vis-a-vis the total migrants at the time of last migration, a transfer migrant is, generally speaking, a male, has received university education, is in his 40s, has brought his family members along with him, is employed as either a white collar worker or security personnel, and, in terms of industrial sectors, belongs to either the financial/insurance industry or government services. Moreover, a majority of them have experienced a number of transfer migrations in the past.

IV. Geographical Aspects of Transfer Migration

This section will be devoted chiefly to transfer migration and its geographical aspects. In particular, we will focus on distance effect and its relationship to the urban hierarchical system. We will then examine whether the empirical criteria obtained by us generally apply to the pattern of transfer migrations in other countries.

a) Distance Effect

First we will examine the relation between distance of migration and the reason factor pertaining to the last migration. For the sake of convenience, we separated the migrants into three geographical types: intraprefectural migrants, intraregional migrants (exclusive of all strictly intraprefectural migrants), and interregional migrants. The term, "region," as used here applies to Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku, and Kyushu (see Figure 1).[1)]

Table 4 gives the cross-tabulation of the reason of last migration and the aforementioned three types. The predominance of intraprefectural migration in the transfer category is a characteristic common to almost all other reasons for migration. However, when the intraregional and interregional flows are compared, the former outnumbers the latter when it comes to such reasons as marriage, divorce/spouse's death, cohabitation with parent/child and housing situation, whereas the reverse is true in respect to entrance of child/children into schools of higher grade, employment, change of employment, taking over the family business, and child's schooling/education.

Table 4. Relation between Geographical Type and Reason

	Intra-prefectural	Intra-regional	Inter-regional	Total
Transfer	221	110	182	513
	(43.1)	(21.4)	(35.5)	(100.0)
Entering higher level of school	29	23	62	114
	(25.4)	(20.2)	(54.4)	(100.0)
Employment	156	77	95	328
	(47.6)	(23.5)	(29.0)	(100.0)
Change of employment	225	61	112	398
	(56.5)	(15.3)	(28.1)	(100.0)
Taking over of family business	32	7	13	52
	(61.5)	(13.5)	(25.0)	(100.0)
Marriage	851	79	21	951
	(89.5)	(8.3)	(2.2)	(100.0)
Divorce/ spouse's death	83	25	10	118
	(70.3)	(21.2)	(8.5)	(100.0)
Cohabitation with parent/child	117	31	29	177
	(66.1)	(17.5)	(16.4)	(100.0)
Housing situation	2,430	210	21	2,661
	(91.3)	(7.9)	(0.8)	(100.0)
Child's schooling/ education	57	5	6	68
	(83.8)	(7.4)	(8.8)	(100.0)
Others	636	98	82	816
	(77.9)	(12.0)	(10.0)	(100.0)
Total	4,837	726	633	6,196
	(78.1)	(11.7)	(10.2)	(100.0)

X^2=1,500.73 (significant at 0.01 level), v=0.348.

The numbers in parenthesis are the percentages for the row.

However, the examining of whether or not the number of migrants due to job transfers exhibits a monotonic decrease function is not the sole point-of-view of examining the distance effect. For example, it is possible to investigate whether any significant relationship exists between the types of transfer migrations and migrant's attributes, whose importance has been confirmed in the preceding section. Our study shows that the only attributes of transfer migrants having significant relationship with types of migration are: gender, educational attainment, and occupation. Thus, only these three attributes are carried in Table 5 and briefly discussed below.

Table 5. Relation between Migration Type and Migrant's Attributes

Category	Intra-prefectural	Intra-regional	Inter-regional	Total
		Gender		
Male	197 (41.1)	107 (22.3)	175 (36.5)	479 (100.0)
Female	24 (70.6)	3 (8.8)	7 (20.6)	34 (100.0)
Total	221 (43.1)	110 (21.4)	182 (35.5)	513 (100.0)
X^2=11.38 (significant at 0.01 level), v=0.149				
		Educational Attainment		
University	67 (36.8)	36 (19.8)	79 (43.4)	182 (100.0)
Others	152 (46.5)	74 (22.6)	101 (30.9)	327 (100.0)
Total	219 (43.0)	110 (21.6)	180 (35.4)	509 (100.0)
X^2=8.16 (significant at 0.05 level), v=0.127				
		Occupation		
Unemployed	23 (48.9)	10 (21.3)	14 (29.8)	47 (100.0)
Self-employed	10 (45.5)	4 (18.2)	8 (36.4)	22 (100.0)
Company/corporation executive	12 (36.4)	11 (33.3)	10 (30.3)	33 (100.0)
Managerial	14 (22.6)	14 (22.6)	34 (54.8)	62 (100.0)
Professional /technical	49 (60.5)	15 (18.5)	17 (21.0)	81 (100.0)
Clerical	38 (46.3)	17 (20.7)	27 (32.9)	82 (100.0)
Sales/service	14 (28.0)	16 (32.0)	20 (40.0)	50 (100.0)
Security personnel	23 (39.7)	8 (13.8)	27 (46.6)	58 (100.0)
Manual worker	27 (54.0)	6 (12.0)	17 (34.0)	50 (100.0)
Others	11 (39.3)	9 (32.1)	8 (28.6)	28 (100.0)
Total	221 (43.1)	110 (21.4)	182 (35.5)	513 (100.0)
X^2=42.27 (significant at 0.01 level), v=0.203				

The figures in parenthesis are the percentages for the row.

Gender: A conspicuous difference in respect to gender is that, while males show a relatively dispersed distribution over all three migration types, 70% of the migration movements by females are intraprefectural migration. From this, we may conclude that male migration tends to involve relatively longer distance than that of female migration and that distance has less effect on male migrants than on their female counterparts.

Educational Attainment: As noted earlier on, we were not able to find any significant relationship between migration types and educational background by organizing the latter into the four traditional categories of junior-high-school graduates, senior-high-school graduates, junior-college (including professional college) graduates, and university graduates. Instead, a more promising relationship between the two factors was observed by arranging educational background into the following two categories: university graduates, and others. Here, our attention was turned to the fact that close to half, or 43.9%, of all interregional migrations were accounted for by migrants who had completed university-level education. On the other hand, the other migrants (those having undergone education at the junior-college-or-under level) accounted for the largest proportion of intraprefectual migrations.

Occupation: Forty percent of the migrants in each of the following occupational categories were found to have made intraprefectural migration: self-employed, professional/technical, clerical, and skilled/manual workers; while the same high percentage of migrants in the following categories were interregional migrants: managerial, sales/service and security personnel. The last three occupations tower above the rest in terms of long-distance migration. Specifically, our finding was as anticipated in respect to managerial employees (as has been suggested by previous studies, for example, the report made by McKay and Whitelaw [1977] in Australia). The fact that security personnel are involved in long-distance migration could be due to the possibility that a large number of employees in this category are accounted for by Japanese Self-Defense Force personnel. At the same time, we were somewhat surprised to find

that a large number of sales/service employees are also involved in long-distance migrations.

So far we have studied the distance effect on transfer migration by examining the contingency tables which show the relationship between migrant's attributes and the three migration types: intraprefectural, intraregional and interregional. But we have yet to focus explicit attention on the migrant's place of departure or origin (that is, his/her previous place of residence prior to his/her last migration) and place of arrival or destination (that is, his/her present place of residence). In order to emphasize the significance of transfer migration, which constitutes a part of spatial interactions, we have arranged our data in a way that will help identify the place of departure (origin) and place of arrival (destination). See Table 6, which shows the OD (origin-destination) matrix of intraregional and interregional transfer migrations.

Table 6. Intraregional and Interregional Transfer Migration

To / From	Hokkaido	Tohoku	Kanto	Chubu	Kinki	Chugoku	Shikoku	Kyushu	Total
Hokkaido	29	1	4	3	0	1	0	19	57
Tohoku	0	36	6	3	1	0	0	0	46
Kanto	1	6	71	13	25	4	2	13	135
Chubu	0	2	12	37	4	2	2	5	64
Kinki	0	2	12	3	29	12	1	2	61
Chugoku	0	0	3	0	1	18	0	3	25
Shikoku	0	0	2	1	0	2	6	0	11
Kyushu	0	1	2	0	3	3	0	105	114
Total	30	48	112	60	63	42	11	147	513

Of the total of 513 transfer migrants, close to two-thirds, or 331 migrants (including intraprefectural migrants), migrated intraregionally. Particularly outstanding in this respect is the large size of the intraregional movements within Kyushu. In addition, we see that interchange of transfer migrants take place between regions adjacent to or near each

other. In other words, there clearly exists a tendency toward a decrement in migration in proportion to distance--that is, while considerable migratory flows take place within the same region or between neighboring regions, those between regions situated far apart from each other are relatively few.

The nondiagonal cells of the matrix show that Kanto, among all the eight regions, has the most extensive area of migration in terms of both inflow and outflow. In this respect, Kinki falls far behind Kanto in that its interchange with some regions is zero as regards both inflow and outflow. Nonetheless, the magnitude of the marginal totals (excluding intraregional migration) of these two regions, in which the nation's two largest metropolitan areas are located, not only shows that Kanto and Kinki are playing the role of nodal centers in the spatial pattern of transfer movements in Japan, but also suggests that the pattern of movements is hierarchically ordered.

In short, in the light of the OD matrix in Table 6, it is possible to identify two empirical regularities: distance effect, and the hierarchical linkage between regions. However, there also are some migratory flows that cannot be grasped from the aforementioned empirical yardsticks. The most outstanding example is the case of the 19 migrants (all of them employed as securities personnel) who migrated from Hokkaido to Kyushu (specifically, from various places in Hokkaido to Kita-Kyushu City). This case is an interesting example of the relatively large volume of migration flow taking place outside and beyond the Tokyo-Osaka framework, which traditionally has been regarded as comprising the two important nodal points of transfer migration in Japan (See Itoh et al., *1979, pp. 192-193*).

b) Relationship with Hierarchical System of Cities

Are the upward and downward flows approximately balanced within the urban hierarchical system? Or does one have primacy over the other? To confirm these points, there is need to specify the points of origin and destination in terms of *shi* (city), *machi* (town), *mura* (village), and to prepare beforehand a hierarchical classification of the nation's urban areas.[2)]

As regards the latter, the urban areas need to be identified in terms of a criterion applied throughout the nation. But we decided in favor of using the commuting areas classified and fixed by Doi (1987). While Doi's study slightly differs from other works in that it provides a yardstick in fixing commuting areas (Ishikawa, 1989b), it establishes, subsequent to 1965 and up through 1980, a criterion every five years. Particularly, his latest 1980 study is complete with a detailed map for each of the 47 prefectures, thus providing us with the advantage of being able to identify immediately the urban area to which each city, town or village (of origin/destination) belongs. Doi's work, incidentally, covers Japan's entire land area.

As for urban hierarchical classification, we prepared four groupings by referring to Abe's work (1991, pp.81-149) on the siting of branch offices by the nation's major corporations. The first group consists of the three major metropolitan areas (Tokyo, Nagoya and Osaka); the second group is comprised of regional centers (Sapporo, Sendai, Kanazawa, Kyoto, Hiroshima, Takamatsu and Fukuoka); and the remaining cities are divided into those that are the seats of prefectural offices (third group), and the remainder (fourth group). Moreover, in this work by Doi, Yokohama and Kobe do not constitute their own unique urban areas but are subsumed, respectively, under the Tokyo and Osaka areas.

A total of 524 persons mentioned job transfer as the reason for their last migration. As indicated in Table 2, the incidence of transfer migration progressively increases with the passing of each year. For example, during the 1980s, transfer migrants accounted for approximately 60 percent of all migrants. A few replied they experienced transfer migration prior to World War II. Due to this variance in the chronology of occurrence, and because of the restraints deriving from our desire to utilize Doi's 1980 classification of urban areas (which constitutes the results of his latest work), the subjects of our survey of movements within the urban hierarchical system have been confined to only 367 transferees who migrated after the late 1970s (specifically between 1976-86). The results are as shown in Table 7.

Table 7. Movements within Urban Hierarchy as Seen from the Perspective of Transfer Flows

From \ To	Three Major Metropolitan Areas	Regional Center Areas	Prefectural Capital Areas	Other Areas	Total
Three Major Metropolitan Areas	76(43)	18	15	17	126
Regional Center Areas	7	13(9)	8	15	43
Prefectural Capital Areas	10	7	25(17)	33	75
Other Areas	5	13	29	76(17)	123
Total	98	51	77	141	367(86)

Figures in parenthesis show migration within the same metropolitan areas.

The large size of the numerical values of the diagonal elements indicates the magnitude of the flow taking place within the same category, that is, lateral movements within an identical hierarchical system. In particular, the majority of movements occurs within same areas. On the other hand, the nondiagonal elements show that downward flows (that is, migration from larger to smaller metropolitan areas) exceed flows in the opposite direction in all cases. This indicates that within this hierarchical system, downward flows tend to be somewhat stronger than upward movements (that is, from smaller to larger metropolitan areas). For example, net migration size by category is -28 transfer migrants for the three major metropolitan areas, +8 for the regional center areas, +2 for the prefectural capital areas, and +18 for the remaining cities. What does this finding suggest?

Generally speaking, job transfers--that is, the intraorganizational reshuffling of personnel between a corporate head office and its branch offices, or between a government ministry's home office and its local agencies--involve the immediate filling in of the specific posts vacated. Therefore, when each metropolitan area is taken as a unit, it is plausi-

ble to expect a state of zero net-flow, unless some significant changes take place in the overall size or in the branch networks of a given organization. And the aggregated total of organizations should not reveal any marked upward or downward movements within the hierarchical system. In other words, transfer migrations should show "circulation rather than redistribution" (Sell, 1982). Thus, the predominance of downward flows in the hierarchical system after the latter half of the 1970s, as has been evinced in Table 7, suggests there has taken place an aggrandizement of branch-office networks in urban areas other than the three major metropolitan areas.

Since transfer migration involves spatial movement within organizations such as government agencies and private enterprises, it is essential to analyze the organization to which a given transferee belongs and his/her position within that organization. However, we had to abandon that analysis because no information relevant to those questions were included in the present data. Nonetheless, our inquiry was greatly enhanced by the works made on the recent development of internal local-agency and local-office networks (e.g., Hino, 1984; Abe, 1984, 1988, 1989, 1991; Yamamoto, 1987; Nishihara, 1991). Since job transfer is a phenomenon taking place within these networks, the two are bound to be closely related. Thus, although it was not possible to make a firsthand analysis of the relation between transfer flows and organizations by using the data provided by the Institute of Population Problems survey, we nonetheless were able to examine that relationship by invoking the results of the aforementioned works on internal local-agency and local-office networks.

At this point, we wish to clarify the correlation between the scale of accumulation, by city areas, of the branch offices of leading enterprises as of 1980 (see Abe, 1991, p.86) and that of the transfer migrants, by metropolitan areas, prepared in conjunction with the drawing up of Table 7.[3)] The correlation between the two variables is as plotted in Figure 2, and the positive correlation ($r=0.63$, significant at 0.01 level) with log-transformed scale supports the soundness of the aforementioned conjecture that the development of branch-office networks exerts a strong influence in generating transfer movements. Given that

the size of branch offices is determined by a given city's strategic location and its capacity for centralized control, the correlation demonstrates the importance of urban hierarchical effect in explaining the spatial pattern of transfer migration.

c) The Regularity of Transfer-Flow Patterns

What implications do the above findings have on the study of transfer migration in other countries? In regard to this question, Flowerdew (1982, p. 223), who stressed the importance of institutional effect on human migration in general, including the effect of organizations on transfer flows, states as follows in his concluding remarks:

> At the current state of development of institutional approaches in geography, explanation tends to be highly specific to individual cases. Because of the dependence of findings on specific institutional situations, these *ad hoc* explanations may never be fully integrated in a more general theory, but it is hoped that a greater degree of generalization will be attainable eventually.

Since the data we use are based on a nationwide, comprehensive survey involving heads of household working in many kinds of organizations, our findings can be considered to be free of what Flowerdew refers to as the specific nature of individual case studies. In other words, it is possible to discuss the regularity of transfer flows in general, although we have to set aside the problem of the various influences exerted by institutions, which differ by specific countries and/or local governments, on transfer migration--a problem cited by Flowerdew as posing an additional obstacle to generalization.

The three types of organization having to do with the incidence of transfer movements (size-and-contact-dependent, market-dependent and resources-dependent) classified by McKay and Whitelaw (1977) serve as a useful point of departure. Among the three, however, the third type, which concerns the endowment and/or existence of mineral resources, can be excluded owing to its somewhat special character.

According to MacKay and Whitelaw, the size-and-contact-dependent organizations enjoy economies of scale, both internally and externally, and exert strong influence at the higher levels of the urban hierarchy. A good example is the location of branch offices by leading enterprises and of local agencies by the central-government ministries and various local governments in Japan. In other words, it is safe to say that the higher echelon offices and agencies of most of these organizations, regardless of their difference in respect to types of business enterprise and admistrative function, are concentrated in the top-ranking cities in the hierarchical system, with Tokyo serving as the apex. Individual transfer migrants are also heavily influenced by this urban hierarchy when making their choice of destinations (a fact illustrated in Figure 2). Since the choice of destinations in intraorganizational transfer migrations is made in a form proportionate to each city's control functions, it can be surmised that the principle of urban hierarchic influence operates consistently throughout all patterns of transfer movements.

If this conjecture is correct, it may be important to pay attention to the proper nature of a given country's urban system, which, in turn, serves as the principal background of the spatial pattern of transfer migration within that country. Extremely suggestive in this context--and specifically so when giving thought to the regularity of transfer migrations--is Nishihara's (1991) view, which was made in conjunction with his detailed analysis of the interurban connectivity of branch-establishment networks in Japan, that while the hierarchic effect manifests itself strongly in societies where the Christaller-type or solid hierarchical structure is predominant, such as in Japan as well as in such major European countries like Britain and Sweden, the influence of hierarchic order cannot obviously be detected in the U.S., as has been exemplified in Pred's (1977) investigation.

As noted by McKay and Whitelaw, the market-dependent organizations tend to site their business networks in cities at the lower, as well as the higher, levels of the system, and in approximate proportion to the distribution of total population. Given that population distribution, in reality, is prone to show a highly positive spatial autocorrelation,

it may be plausible to suppose that distance-decay effect is more liable to come into play in the case of transfer flows that take place within this type of organization. Besides, it is unlikely, as a rule, that workers of local governments or enterprises, whose branch offices are confined to a specific intraregional or intraprefectural scale, will be required to make transfer movements beyond their territories. Consequently, if the relation between migration size and migration distance is examined at the national scale, this type of organizations would be predominated by short-distance flows and reflect a distance-decay effect, as suggested, for instance, in Table 6.

To sum up, we may conclude that two sets of regularities--hierarchical effect and distance-decay effect--are, as a rule, operative in the seemingly complicated pattern of transfer flows observed at the aggregate level. And it should not be too farfetched to suppose that both effects fundamentally hold true in respect to transfer migrations in countries other than Japan. Thus, any general theory and/or related methodology concerned with transfer migration will necessarily have to incorporate both of these effects.

Therefore, our discussion has placed emphasis on demonstrating that transfer migration shares a common basis with other types of migration. The existence of both of the aforementioned effects has frequently been mentioned in studies already made in Japan and abroad--even in works on overall migration patterns which do not inquire about the reasons of migration. The subjects of the lack of freedom in destination choice and of constrained migration behavior, both which distinguish transfer flows from other types of migration, have not been treated in this paper due to limitations in the source material used by us. Exploration of generalization associated with these aspects belongs to a future research agenda.

V. Concluding Remarks

This paper has sought to examine migration flows arising from intra-organizational personnel reshuffles--an aspect hitherto neglected in Japanese migration studies--by using data obtained from the sample survey

carried out by the Institute of Population Problems, Ministry of Health and Welfare.

Our examination of a series of contingency tables and OD matrices has resulted in the following findings:

1) The following general characteristics apply to the average Japanese transfer migrant: he is a male, a university graduate, and is aged in his forties. By occupation, he is either a white-collar worker or is employed as a security and/or protective service personnel; and the organization with which he is affiliated comes under the category of either finance/insurance or government/civil services.

2) There is a significant relation between the three spatial patterns defined by the difference of distance moved (intraprefectural, intraregional and interregional) and transferee's attributes such as gender, educational attainment and occupation.

3) Most transfer flows take place within same regions, implying a distance-decay tendency.

4) The fact that downward flows more or less predominate within the urban hierarchic system is suggestive of the expansion in recent years of branch-office networks outside Japan's three major metropolitan areas. Additionally, it became clear that the incidence of transfer flows is closely related to the development of branch-office networks by the major business corporations.

Based on these findings, we have arrived at the conjecture that the two effects of distance and hierarchy could generally be detected as empirical regularities in transfer-migration flows in other countries. Hopefully this paper, which primarily focuses on the descriptive angle of view, will contribute as a modest stepping-stone toward advancing studies in transfer migration in general.

Figure 1. Regionalization of Japan

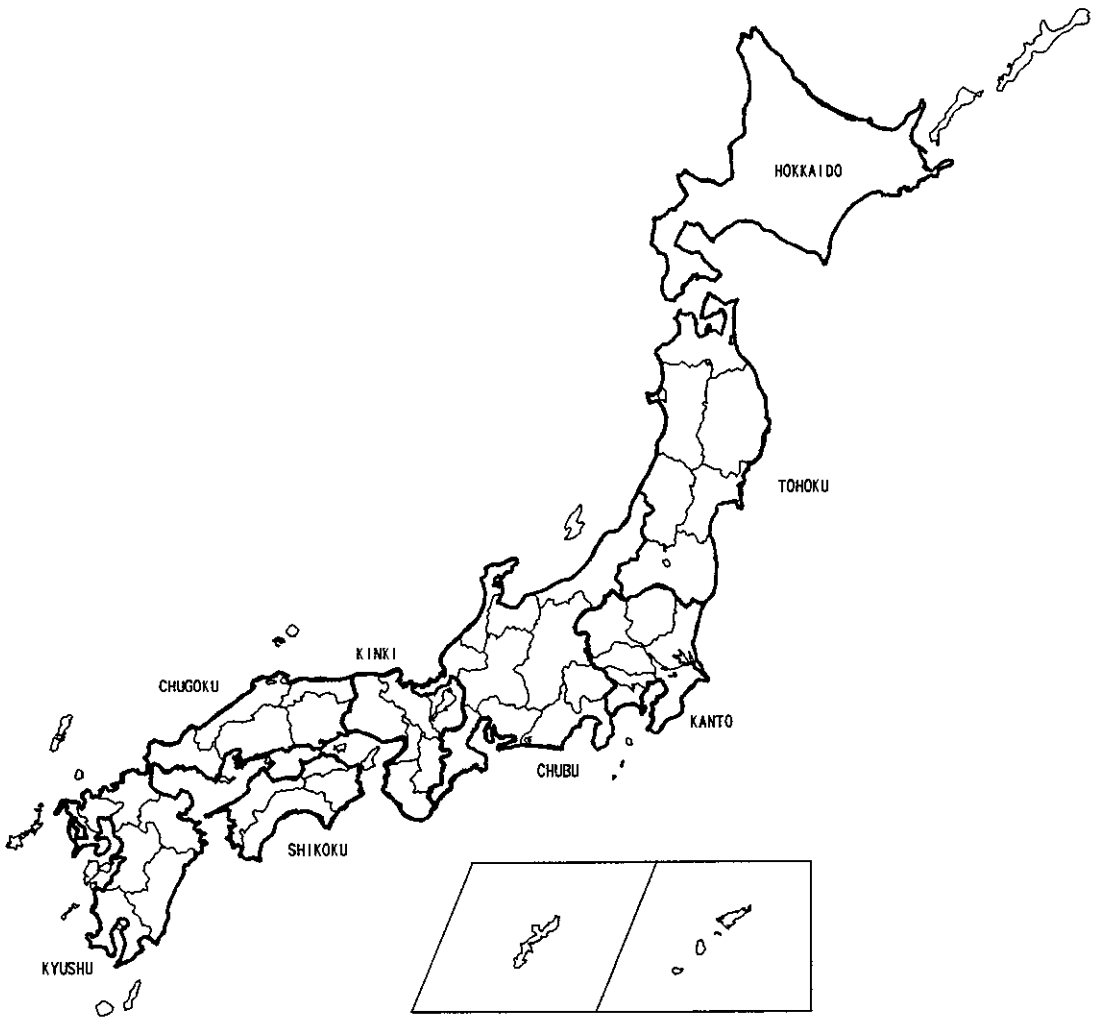
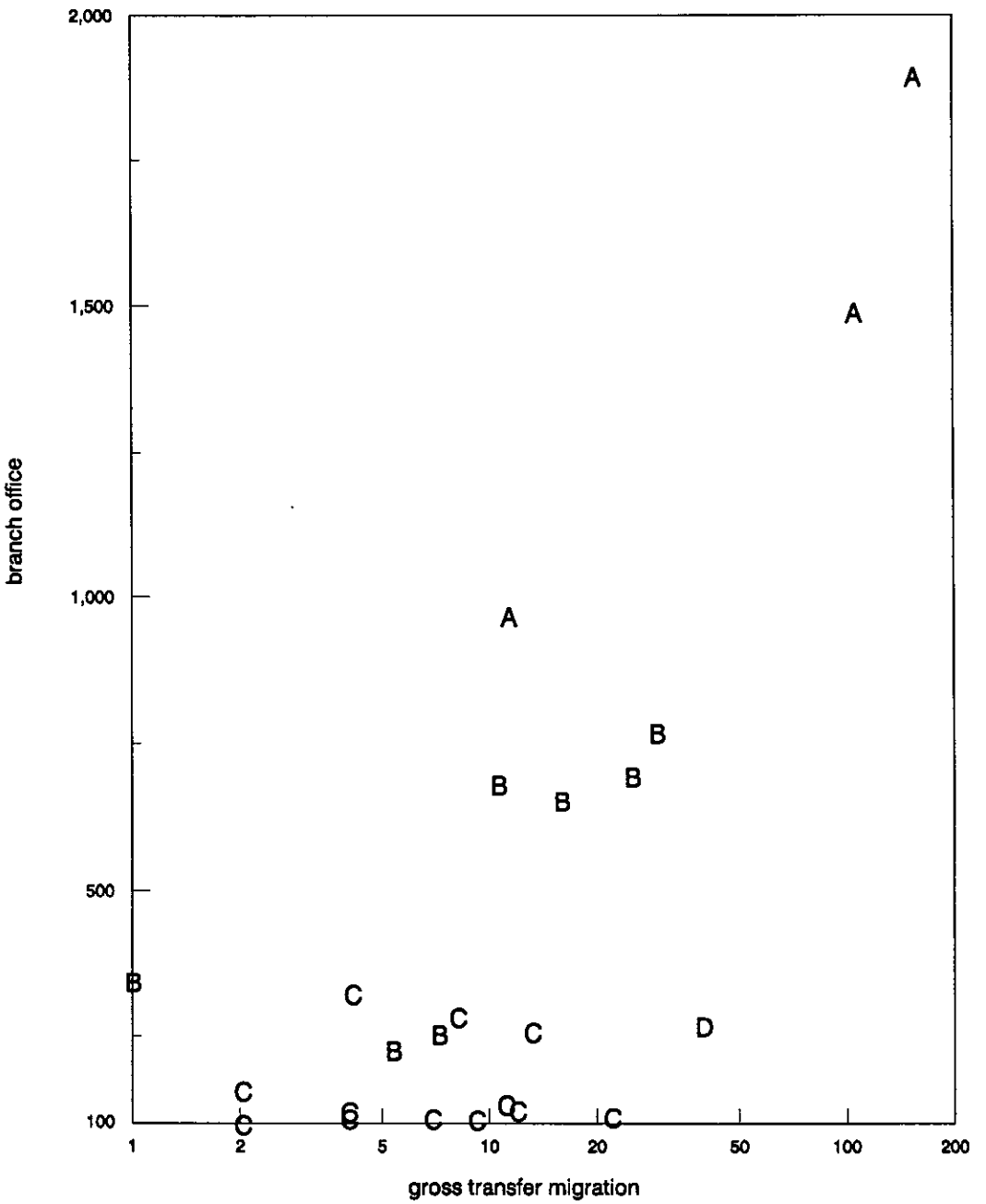


Figure 2. Scatter Diagram between Branch Office Location and Transfer Occurrence



A: Three Major Metropolitan Areas

B: Regional Center Areas

C: Prefectual Capital Areas

D: Other Areas

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Notes

1) The method of demarcating Chubu Region, situated in the central part of the main Japanese island of Honshu, is quite involved as several subdivisions are possible. However, since each possible subdivision has its demerits as well as merits, we have opted to lump all 10 of the region's prefectures into a single grouping. By so doing, we were able to dispense with having to further subdivide each of Japan's three major metropolitan areas (Tokyo, Osaka and Nagoya).

2) From the original data, we were able to identify the place of departure (or origin) of each migrant in terms of the lowest local administrative unit (city, town or village). But this was not immediately possible in respect to the migrant's place of arrival (or destination) because the original data only gave the migrant's new health-center code number. Fortunately, we were able to identify the local administrative unit of each migrant's place of destination by using the reference table provided us by the Institute of Population Problems.

3) Inasmuch as the sample size of our data source is relatively small, our paper treats only 24 urban areas (that is, those which had a total of 100 or more branch offices and had one or more gross transfer [inflow plus outflow] during the period 1976-86). And for the sake of appropriate comparison, the numerical value of branch office (in terms of the administrative city as the unit) originally prepared by Abe has been compiled into that provided by Doi by using the metropolitan area as the unit.

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