

# The Ecology of the Extended Family in Japan

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journal or publication title	Nichibunken Japan review : bulletin of the International Research Center for Japanese Studies
volume	3
page range	73-95
year	1992-01-01
その他の言語のタイトル	日本拡大家族のエコロジー
URL	<a href="http://doi.org/10.15055/00000391">http://doi.org/10.15055/00000391</a>

## The Ecology of the Extended Family in Japan\*

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*(Received 5 August 1991, accepted 3 October 1991)*

The objectives of this paper are to describe the overlooked regional variation of the Japanese family structure, and to identify the factors which facilitate the prevalence of the contemporary Japanese extended family. The data used here are based on the national census. The paper first reviews changes during half a century of national and prefectural average household size and structure, with comparisons to other demographic variables. Descriptive analyses of the regional differences indicate clear variations among prefectural averages, concurring with a long-standing observation by Japanese family sociologists and anthropologists: specifically, that regional variation between the Northeast and Southwest exists in family patterns. Rather than dichotomizing the regions, I use 47 prefectures as units of analysis, and statistically test three determinants—demographic, economic, and cultural—on the frequency of the extended family. It is found that normative climate with stronger *ie* consciousness and more available space increase, while the availability of alternative family care reduces, the prevalence of the extended family in the area. Overall, the model presented in this paper accounts for 85% ( $R^2$ ) of variance in the percentage of the extended family. The paper concludes that the process of family transformation and the current family structure are quite different depending on the region, due to old family systems/customs and to the aftermath of drastic economic and population relocations.

*Keywords:* EXTENDED FAMILY, FAMILY STRUCTURE, JAPAN, FAMILY, HOUSEHOLD, FAMILY SOCIOLOGY, DEMOGRAPHY.

The structures and behavior of the Japanese family have changed dramatically in this last century. A constant decline in family household size, paralleling Western family experiences, is observed since the 1960s. However, the Japanese family experi-

\* This article is based on a paper presented at the Conference of the European Association for Japanese Studies, Berlin, September 16-19. I would like to express special thanks to Ms. Diane Musselwhite for her editorial comments on this paper.

ences are unique in two respects. First, the extended family still remains an important family type in contemporary industrialized and urbanized Japan. Second, its distribution varies greatly by region.

The proportion of the population who live in extended families is remarkably large compared to those among other industrialized nations at any stage in the life cycle. Here an extended family includes relatives other than the nuclear members (i.e. extended kin).<sup>1</sup> For example, out of all Japanese households (including family and non-family households) 20.7% were comprised of extended families in 1980. The majority of them were stem families. When this is compared to those in France and Germany, modifying for the slight differences in the definitions of the respective national censuses, the percentage in 1982 in those countries was less than 3% (Council of Population Problems, 1986).<sup>2</sup> The contrast becomes more apparent among the elderly. In the 1980s, 65% of Japanese elderly people (60 years and above) were living with their children, comprising the multi-generational family. Although this proportion has declined from 80% in the 1960s, the persistence of older people living with their younger kin is remarkably high compared to their Western counterparts, who maintain 10-30% at the most (Household Statistics, 1987). This suggests that the extended family still retains a sociological significance as a living arrangement in contemporary Japan.

The high frequency of the Japanese extended family has been studied as it challenges the widely accepted theory in comparative and historical family research that "increasing societal complexity or differentiation is associated with decreasing family structural complexity" (Lee, 1987: p. 62). Accumulated research which utilizes individual level surveys now suggest that economic development and urbanization are not grossly inconsistent with extended residence, and that the extended residence can be an adaptive strategy within the modern context (e.g. Morgan and Hiroshima, 1982; Hendry, 1985; Kojima, 1989).

The second aspect, of regional differences in the ecology of the extended family, is not well recognized among sociologists. The failure in accounting for regional variation is one of the essential criticisms that extends to the classic study of Laslett and the Cambridge group (1972), and most demographic studies which utilize statistical data. For the case of Japan, the overlooked internal variation is because of the general assumption that industrialization and technological development reduce regional differences and that individual experiences may be standardized. In addition, using contextual differences to explain individual behavior is still a developing framework in family/fertility studies in general (e.g. Hirschman and Guest, 1990;

- 1 In this paper, 'family' refers to a group of people related by blood, marriage, or adoption, and who are living together in the same living quarters, regardless of the degree to which they share their home economy and activities. Therefore, family and household can be used interchangeably in this paper. A nuclear family consists of one of the following: a married couple, a married couple and their unmarried child, a parent and his/her unmarried child.
- 2 The categories were defined as "two or more couples" in France (INSEE) and "3-generation" and "non-stem family household" in Germany (Statistisches Bundesamt).

Kurosu, 1991). The lack of recognition is also due to the fact that the stem family has been treated as "traditional" and as the basis of the Japanese family among family sociologists for a long time (e.g. Fukutake, 1963; Morioka, 1969). It gives the idea of 'homogeneous' in the Japanese family ideal, if not in family practices. Thus the transformation of the Japanese family, although somewhat lagged, was observed to go in the direction of the conjugal family, consistent with Goode's theory (1963).

This paper deals directly with this overlooked issue of regional variation. The attempt is made to describe the regional variation of the extended family and to identify the factors which facilitate the prevalence of the extended family. The first half of the paper is descriptive analyses of the change during half a century of national average household size and structure, with comparisons to other demographic variables. The change in the percentage of the extended family is then brought down to the prefectural level and assessed. Whether or not all prefectures reflect changes at the national level indicates the internal variation in the family transformation. The latter half of the paper deals with the question of what factors shape the regional variations. I will identify specific factors which determine the prevalence of the extended residences from three perspectives: demographic, economic, and cultural. These will be tested with the prefectural level data.

### OVERVIEW OF THE CHANGE IN PERCENTAGE OF EXTENDED FAMILY IN JAPAN

How has the percentage of extended families in Japan shifted with the change of other demographic variables since the turn of the century? For the purpose of this study the percentage of extended families among ordinary (relative, non-relative, and one-person) households is used to find the variation at the national and prefectural levels. This is consistent with the 1980 Population Census definition. The demographic factors directly influence the formation of the extended family. Proponents of the notion of demographic constraints, first set forth in Levy's influential essay (1965), agree that a high frequency of extended families is impossible in premodern societies because of high mortality. The variation was often in the "ideal" of the family, rather than in "real practices," and that "the actual family size, generational composition, etc., varied much less than variations in ideal structures" (1965: 63). Not only mortality but also other demographic patterns—e.g. fertility, marriage, migration—are considered in the framework of family formation (Glass, 1966; Wrigley, 1969; Kobrin, 1976).

Table 1 shows the general pattern of changes during the process of Japanese industrialization. A caution is necessary in comparing rates of the early 20th century. The registration procedure was modernized and legal regulations became more comprehensive in the early 1920s. For example, the 1920 death rate may be higher than earlier years due to the increasing health and medical services which led to a wider public knowledge of the legal requirements for the reporting of deaths (Taeuber, 1958: 285). With this proviso, however, we observe that Japanese fertility

Table 1. Change of demographic factors and family, 1900-1985

Year	CBR	TFR	CDR	Inf.Mor.	HHsize	%Ext
1900	32.4	-	20.8	155.0	-	-
1910	34.8	-	21.6	161.2	-	-
1920	36.2	-	25.4	165.7	4.89	40.0
1930	32.4	4.71	18.2	124.1	4.98	-
1940	29.4	-	16.5	90.0	5.00	-
1950	28.1	3.65	10.9	60.1	4.97	-
1955	19.4	2.37	7.8	39.8	4.97	36.5
1960	17.2	2.00	7.6	30.7	4.56	34.7
1965	18.6	2.14	7.1	18.5	4.05	29.2
1970	18.8	2.13	6.9	13.1	3.69	25.4
1975	17.1	1.91	6.3	10.0	3.45	22.3
1980	13.6	1.75	6.2	7.5	3.33	20.7
1985	11.9	1.76	6.3	5.5	3.23	19.8

CBR: Crude birth rate, TFR: Total fertility rate, CDR: Crude death rate, Inf. Mor.: Infant mortality rate, HHsize: Average household size, %Ext: Number of extended family households over ordinary households.  
 Source: *Vital Statistics*, 1986; *Household Statistics*, 1987; Nakane, 1972, p.531.

Table 2. Change in household type among ordinary households, 1920-1985

	1920	1955	1960	1965	1970	1975	1980	1985
Ordinary households	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nuclear family	54.0	59.6	60.2	62.6	63.5	63.9	63.3	62.5
a married couple	10.3	6.8	8.3	9.9	11.0	12.4	13.1	14.3
a couple-child(ren)	43.7	43.1	43.4	45.4	46.1	45.7	44.2	41.6
father-child(ren)	0.0	1.6	1.3	1.0	0.9	0.8	0.9	1.0
mother-child(ren)	0.0	8.1	7.3	6.3	5.5	5.0	5.1	5.6
Other relatives	40.0	36.5	34.7	29.2	25.4	22.3	20.7	19.8
Non-relatives	0.0	0.5	0.4	0.4	0.4	0.2	0.2	0.2
Single	6.0	3.4	4.7	7.8	10.8	13.5	15.8	17.5
# per house	4.59	4.84	4.47	3.99	3.65	3.44	3.33	3.22

Note: Okinawa is not included in 1970.

Source: Toda Teizo Kazoku Kosei (Family Structure) for 1920. National census for the other years. In *Household Statistics*, 1987, p.27.

and mortality have been declining since the 1920s and the decline seems to be tapering off in the 1980s. These changes are predicted by the demographic transition theory in which a society eventually reaches a low fertility and mortality regime. However, it is said that the speed of decline in these demographic factors in Japan is much faster than the experiences of other countries (e.g. Martin and Culter, 1983).

It is hard to distinguish the onset of the decline of household size and the percentage of extended families from this table. Nakane (1972) estimates that there was a rise of mean household size between 1925 and 1930, and again in 1935, which appears to have been the result of a general improvement in the standard of living and to the fact that fertility decreased more slowly than mortality. However, it is her contention that due to 'one succession rule,' household size in Japan changed little from the early 17th century at least until 1955 and must have been fairly constant at about 4.9 persons per household during this period. We cannot make any causal connections from this table except to note the decline of household size and the percentage of extended family following the declines of mortality (which reduces the propensity for coresidence) and fertility (which sustains the propensity of coresidence).

How does the change in the percentage of extended households compare to other household types (see Table 2)? It should be noted that the majority of families who fall into the category of extended family are vertically extended in Japan. Unfortunately, statistics were not available between the first census of 1920 and the end of the war. However, as Nakane (1972) and Fuse (1984) suggest, it seems to be safe to assume that no major changes occurred during this period. There is a constant decline in the percentage of extended families since 1955 although the decline is slowing down recently. This suggests general agreement with a main theorem of family sociology, i.e., that there is a decline in the extended family along with industrialization (Lee 1987). Whether or not the decline in the extended family was taken over by the nuclear family, however, needs clarification. Although a constant decrease is observed when "nuclear family" includes both nuclear households and single person households, when the latter is separated we see a different picture. The percentage nuclear does not show an impressive increase in comparison to the percentage extended. The percentage of one-person households is showing a steady increase. This again agrees with the Western experiences of increasing non-family residences (e.g. Kobrin, 1976).

### PREFECTURAL VARIATIONS

The changes observed at the national level are now examined at the prefectural level. Table 3 lists the percentages of the extended family and change therein over three decades for 47 prefectures. It is clear from this table that the decline in the percentage of the extended family is observed in every prefecture. The decline seems irreversible. However, the levels and amount of decline vary greatly across prefectures. In 1955, the highest percentage of extended family was 48.8% in a Northeastern agricultural prefecture, while the lowest was 25.4% in Tokyo, the most urbanized

Table 3. Percentage of extended family by prefecture, 1955-1985

Prefecture	1955	1965	1975	1985	Change(55-85)
Hokkaido	30.5	23.4	16.7	14.0	-16.5
Aomori	41.0	34.9	29.7	27.5	-13.5
Iwate	46.3	40.0	34.5	31.9	-14.4
Miyagi	47.1	37.3	29.6	26.7	-20.4
Akita	46.7	42.2	38.2	36.6	-10.1
Yamagata	48.8	46.7	43.4	42.3	-6.5
Fukushima	44.9	40.2	34.5	32.5	-12.4
Ibaraki	43.4	38.5	31.4	27.6	-15.8
Tochigi	44.4	37.7	30.8	28.6	-15.8
Gunma	37.7	34.5	29.1	25.7	-12.0
Saitama	39.6	28.5	18.5	16.1	-23.5
Chiba	42.6	32.1	20.7	17.4	-25.2
Tokyo	25.4	18.0	12.4	10.2	-15.2
Kanagawa	28.0	20.0	13.9	12.4	-15.6
Niigata	48.7	43.0	38.1	35.7	-13.0
Toyama	45.6	42.9	40.3	38.1	-7.5
Ishikawa	44.2	40.1	33.6	29.8	-14.4
Fukui	43.9	41.4	38.4	36.6	-7.3
Yamanashi	37.1	33.6	29.1	26.3	-10.8
Nagano	41.0	36.8	33.0	30.4	-10.6
Gifu	39.2	36.1	31.5	30.0	-9.2
Shizuoka	40.6	34.3	28.2	26.4	-14.2
Aichi	35.7	28.0	21.4	19.8	-15.9
Mie	39.1	35.7	30.7	27.8	-11.3
Shiga	39.4	39.5	33.4	30.1	-9.3
Kyoto	34.4	29.8	21.3	17.1	-17.3
Osaka	28.6	20.4	13.9	11.9	-16.7
Hyogo	32.4	25.8	19.6	17.4	-15.0
Nara	39.8	35.9	27.2	23.6	-16.2
Wakayama	35.9	30.1	25.1	23.1	-12.8
Tottori	44.0	42.0	35.4	33.7	-10.3
Shimane	45.5	41.2	36.0	33.0	-12.5
Okayama	41.5	36.2	28.5	25.3	-16.2
Hiroshima	35.9	27.6	20.7	18.0	-17.9
Yamaguchi	35.0	29.0	23.6	20.4	-14.6
Tokushima	46.0	38.9	32.0	28.6	-17.4
Kagawa	41.2	35.6	29.4	26.4	-14.8
Ehime	36.6	28.9	23.0	20.0	-16.6
Kochi	37.6	29.9	21.9	18.7	-18.9
Fukuoka	33.9	26.4	20.0	17.2	-16.7
Saga	40.3	37.7	33.6	31.0	-9.3
Nagasaki	35.2	28.3	22.9	19.9	-15.3
Kumamoto	39.6	35.1	28.8	25.4	-14.2
Oita	40.7	34.9	26.9	22.7	-18.0
Miyazaki	31.1	27.4	21.1	17.5	-13.6
Kaposhima	29.2	22.6	15.6	11.6	-17.6
Okinawa	—	—	21.7	16.3	—

region of Japan (a 23.4 percentage point difference). In 1985, the range widens to 42.3% and 11.6% (a 30.7 percentage point difference) and these prefectures are both agriculturally oriented. This supports an observation from a previous study (Aging Center, 1988) claiming that the variation in the distribution of the nuclear family across prefectures is greater than urban-rural differences. The geographical regions, beyond the urban-rural differences within each region, may have qualitative differences which affect the individual and family behaviors of those who reside in them.

To see the regional variations more clearly, Table 4 combines several prefectures into nine regions and shows the mean percentage of extended family for each region (see also map in Appendix). This clustering of prefectures by proximity is a standard technique. The percentage point change over the three decades is the largest in Minami-kanto, which is the most urban region, surrounding Tokyo. The percentage of the extended family in this region has been the lowest among ten regions over the three decades. The percent change is the smallest in Hokuriku, which always records the highest in its distribution of the extended family. The extended family may persist longer in areas which have a higher distribution of the extended family to begin with, than in those areas which have a lower distribution. At the individual level, the extended family pattern is more easily passed on to the younger generation among extended families through sharing daily and ritualistic family experiences. Living conditions, in terms of household arrangements, may also be suited for the extended family living among those families. Therefore, people who are brought up in the extended family can form their own extended family in the next generation more easily than those who are brought up in the nuclear family. A nuclear family has to reorganize and redefine living arrangement as well as individual roles in the family once it decides to take non-nuclear members into the house. This may be a reason that once the decline of the extended family starts, it is irreversible. This point needs to be further investigated.

Table 4. Mean percentage distribution of the extended family by geographical regions, 1955-1985

Region*	1955	1965	1975	1985	Change(55-85)
Hokkaido	30.5	23.4	16.7	14.0	-16.5
Tohoku	45.8	40.2	35.0	32.9	-12.9
Kita-kanto/Tosan	40.7	36.2	30.7	27.7	-13.0
Minami-kanto	33.9	24.7	16.4	14.0	-19.9
Hokuriku	45.6	41.9	37.6	35.1	-10.5
Tokai	38.7	33.5	28.0	26.0	-12.7
Kinki	35.0	30.3	23.4	20.5	-14.5
Chugoku	40.4	35.2	28.8	26.1	-14.3
Shikoku	40.4	33.3	26.6	23.4	-17.0
Kyushu/Okinawa	35.7	30.3	23.8	20.2	-15.5

Note: \*See map in Appendix for the boundaries of regions.

Change refers to the percentage difference between 1955 and 1985.

1955 and 1965 figures do not include Okinawa.

These figures are calculated from Table 3.



How are these regional variations brought about? At least two interpretations are possible. First, there were historically quite different family systems (e.g. differences in inheritance, living arrangements, marriage) in the regions and these qualitative differences are still affecting contemporary distributions. Second, there are some acute socioeconomic and demographic differences among the regions which were produced by the country's rapid economic expansion and the relocation of the population since the 1960s. These differences have affected the various family formations of the regions. These two processes are inseparable and can act together. In this section, I will review the relevant Japanese anthropological and ethnographic studies. In the next section, four statistical models for the contemporary Japanese extended family distribution will then be formulated, combining cultural, historical and socioeconomic factors.

Two types of approaches by Japanese family scholars are relevant here to demonstrate an approach which attributes the variations to prior customs (prior to the Meiji Civil Code) of the regions. A group of Japanese scholars have been emphasizing regional variation under the assumption that the extended family system and conjugal family system coexist, or coexisted across regions. According to Shimizu (1986), this contrasts with the assumption entertained by another group of scholars who see the Japanese family as basically homogeneous and the extended family or stem family system as the basis of the Japanese family system (pp. 101-121). The difference in these two groups of scholars, however, may be due to their emphasis on either ideal family patterns or actual practices as well as a difference in the definition of living arrangements.

What has been the general consensus among the first group of scholars is that there are two types of family system in Japan: a Southwest type (*Seinan-gata*) and a Northeast type (*Tohoku-gata*). There are no clear geographical boundaries for the different distribution of these types. Yet, it is generally said that these two types roughly correspond to the geographical Northeast and Southwest. On the one hand, the Northeast regions are represented by the stem family system, which emphasizes the parent-child relationship and the coresidence of a couple with their parents. Scholars generally agree that the stem family observed in the Northeastern region represent the *ie* system (Takei, 1971; Naito, 1980; Tsuchida; 1981; Okazaki, 1982). On the other hand, the Southwest regions are represented by a conjugal family system whose emphasis is on the conjugal relationship and a separate residence from the parents (Okazaki, 1982). The parallel existence of the stem and conjugal family challenges the general notion of the transformation of extended family to nuclear family. In the Northeastern region, the headship of the household is not passed down to the next generation till the head dies. In the Southwestern family type, in Southwest region of Kyushu for example, the household head retires (*inkyō*), often has a separate residence, and sometimes lives without any support from the successor (*kanzen-inkyō*) (Naito, 1980). Takei (1971) calls it a 'general tendency' for the Southwestern family to divide family property and create new conjugal families for each descendent.

These two types of family system are said to have come about earlier than Meiji and their distribution to have been concentrated prior to Meiji (Takei, 1971). Some scholars attribute the contemporary regional differences to these family systems of

pre-industrial Japan. According to these studies, it appears that the standardization of the family system by the Meiji government weakened the regional differences in the family system. However, the major difference between the Northeastern and Southwestern family system still exerts some influences in the distribution of the extended family in Japan. This thesis is probably best examined by Shimizu in his series of studies on the comparison of two agricultural regions (towns/villages) from the Northeast and Southwest (1986).

Another type of approach to the question of regional variation is found in Nakane's anthropological study of succession patterns (1967). Unlike the above scholars, who assert the coexistence of the stem and conjugal family in Japan, Nakane proposes the stem family as the basis of the Japanese family. She starts (1964) with the assumption that the Japanese family is explained by the *ie* structure. For her, the separate coresidence (*inkyō*) of the Southwestern region is only a residential difference (i.e. sleep under a different roof but within the family compound) which is conducted within an *ie* (a social unit) (p. 104). Therefore, the *ie* structure headed by the eldest son is still maintained in the *inkyō* system. Therefore, to begin with, Nakane assumes that the Japanese family system is a stem family system. The regional variation appears only in the succession patterns which are, in turn, the consequences of economic conditions. She identifies three types of succession patterns which varied by region although with some variations within regions:

- 1) an eldest son succession pattern, in which there is a strong tendency to secure the succession of the eldest son as early as possible: Yamagata, Iwate, Akita, Miyagi, Ibaraki, and Shizuoka prefectures;
- 2) the parents remain with the youngest son, while elder sons leave the household at marriage: Nagano, Aichi, Kochi, Miyazaki and Nagasaki prefectures;
- 3) parents choose one of their sons as the successor, regardless of birth order; distribution similar to that of (2) above.

Her regional categorization somewhat overlaps with the two family systems discussed above: (1) being the Northeastern system, and (2) and (3) the Southwestern system. The significance of her study is in her attribution of the variation in the succession patterns to economic factors—both internal and external to the household—rather than to a simple matter of local custom. Although the time framework is not clear in Nakane's writing, her emphasis is clearly geared toward pre-war and earlier periods. She speculates:

From the data I have examined so far, it seems to me that succession by a younger son or by one chosen son would appear where the economic situation is such that all sons can be provided with means adequate for their independence, yet at the same time the household economy can be managed by the labour force of an elementary family. In such a situation, it is a wiser arrangement in terms of distribution of labour force to let the elder sons establish independent household while the father is at work; and when the father reaches the age at which his labour is insufficiently productive, to let the younger son succeed to his household.

. . . On the other hand, where economic competition is great owing to the shortage of capital resources and to the lack of other means of income, the primogeniture succession pattern seems likely to develop. . . . Succession by primogeniture also tends to appear in the wealthy sector of the society. The degree of institutionalization of the sector of the household becomes greater, and the line of succession through 'father-son' becomes more important. In order to keep the succession line firm, there is a tendency to earlier appointment of the successor, and thus primogeniture (p. 10).

Both interpretations of these two groups of scholars regarding regional variations in Japan need to be reformulated within a clearer framework of time and area, as well as within a clearer definition of the family (e. g. ideal or actual family pattern, living arrangement and/or inheritance). An important point, although not yet thoroughly examined, is that suffering from a shortage of capital resources and a lack of means of income other than agriculture, Northeastern Japan might have developed primogeniture and living arrangements in which larger families co-reside in pre-industrial history. This relates to Hayami's (1986) observation from Meiji population statistics that age at marriage was notably lower in the Northeastern region than Southwestern region—Toyama, Nagano, and Shizuoka prefectures constituting a border (coinciding with geological Fossa Magna). It is probable that the earlier appointment of the successor to ensure the line of succession encouraged earlier marriage in the Northeastern region. In addition to the differential succession patterns, I speculate that the larger space available in the Northeast might have encouraged inhabitants to build larger houses for coresidence, in contrast to densely inhabited Southwestern Japan. We cannot go beyond these speculations for these pre-census populations at this point. At least these differences in the historical context (both environmental and sociological) suggest influences on contemporary family differences—including both attitudes and behavior.

#### **DETERMINANTS FOR THE ECOLOGY OF THE EXTENDED FAMILY: MODELS AND MEASUREMENTS**

Whether or not different regions (particularly the two regions described above) might have developed their own customs and family systems, and, in turn, influenced contemporary distribution, requires investigations with historical and longitudinal data. Since the purpose of this paper, however, is to account for the factors which determine the contemporary ecology of the extended family, I will try to quantify these anthropological observations as well as the urbanization effects since 1960s in the post-industrial Japanese context. Rather than dichotomizing the two regions, therefore, I will utilize 47 prefectures as cases, and test their differential economic, demographic, and normative variations as determinants of the ecology of the extended family. Previous studies suggest three major models to explain the rise, decline, and/or prevalence of the extended family which were identified in the

accumulated researches on the extended family. Although the time period and society focussed upon differ, most studies on the extended family emphasize either some or all of the three models. In Ruggles' words, they are called the "three suspects" which have played a role in the rise of the extended family in 19th century England and America (1987). In Kojima's model (1989), which builds on the framework for studying the determinants of nonfamily living proposed by Kobrin and Goldscheider (1982), they are "feasibility of coresidence," "availability of kin for coresidence," and "desirability of coresidence." I proposed an additive model of these three and tested with individual level data (Kurosu, 1991). Here, I will identify specific factors in these models for the explanation of the extended family at the macro level, and discuss the measurement of those factors.

### **(1) Demographic factors**

The most basic demographic factor determining family extension is availability. An extended family will not be formed among those families who do not have non-nuclear family members. Survival of the elderly parents is crucial in family extension. The distribution of the elderly population varies to a large degree, depending on the region. It is generally observed that the ratio of the aged (population 60 and above divided by the total population) is high in both the Southwest (e.g. Tottori, Shimane, Kochi, Kagoshima) and Northeast (e.g. Yamagata) agricultural regions, while it is very low in the urban regions (e.g. Saitama, Tokyo, Kanagawa, Aichi, Osaka) (Shimizu, 1986: 21). For example, in 1980 the ratio of aged population in Yamagata was 11.7%, and in Kagoshima 12.7%, while it was 7.7% in Tokyo, and 6.4% in Kanagawa (National Census, 1980). The differential distribution is a product of migration. A large proportion of the young population in agricultural areas migrated out to cities along with industrialization. This produced an over-crowdedness in urban prefectures and a sparse population in rural prefectures. Kuroda (1978) explicates a mechanism in which the child-rearing population declines, followed by a drop in fertility rates and an increase in death rates in agricultural areas. The reverse is true for cities. He reports that due to the drastic population movement, a remarkable reversal occurred around 1965 in Japan: a decline in the rate of natural increase among agricultural prefectures whose rates were traditionally higher, and a dramatic increase in urban prefectures whose rates have been low (p.156). Promotion of the areas where the population is declining and aging has been an important political issue recently.

With differential distribution of the elderly, the probability of the extended family should necessarily vary. I predict that in an area where there are more surviving parents, there is a greater potential for extended families. In the near future, when the aged population increases, availability of relatives to form extended families must be considered from the side of the elderly. Solely from the demographic point of view, young couples will have more chances to form extended families with more of their parents surviving. However, parents may not find enough members of younger generations to live with. For the individual level, such coresidability rates are statistically assessed using hypothetical populations (e.g. Zeng, 1986; Hiroshima, 1988).

At the prefectural level, this dimension is measured by the prefecture's elderly's dependency ratio, which is calculated by elderly population (65 years and above), divided by population in the labor force (15-64). This is a close measure of the ratio of elderly to heads of households and is believed to describe the availability of elderly to form extended families.

## **(2) Economic factors**

In post-industrial Japan, three conditions appear to be important in determining the ecological distribution of household structure. First is the material conditions that give rise to a particular family pattern (i.e. extended family): the family mode of production. The more an area is geared toward a family mode of production which requires more family members to maintain it, the greater the proportion of extended families. For example, maintaining a farm requires more family help from season to season. Farm families, therefore, tend to be larger and with more children than non-farm families. Although farmers get help from their neighbors and relatives who live nearby, it is the help of family members, especially children and parents, that is most reliable. Their help extended in another direction in the rapid economic expansion in the post war period. In the process of industrialization, the ratio of farm households (including full-time and part-time farm households) dropped to one-third from 1955 to 1980. To maintain the household economy in a rapidly growing economy, many farmers became seasonal migrants who worked in industries during the non-farming season. They were engaged in construction, manufacturing and other non-farming businesses. In the absence of the household heads, wives and parents assumed a major role in tending farms. The concentration of primary industries in certain areas was inevitable, as the family mode of production implies lower mobility. Unlike a regular paid-worker's family, a farm household hardly relocates its residence and is, therefore, more apt to form extended households as well as to keep land (family property) intact.

The second classic economic argument refers to the family strategy. The extended family is perceived as an economic benefit in both early and post-industrial societies. Goode argues that in industrial and commercial settings where the nuclear family is dominant, extended families persist only because the requirements of an industrial economy and society have not yet become fully operative (1963). Then, the family does not have to be extended when they have alternatives to what are provided by non-nuclear family members. For example, when there is enough access to elderly care and child care facilities, couples may prefer separate living arrangements from their parents. When they do not have any access to such facilities, they may choose to live with their parents, both to take care of them, and have them take care of their children when they are at work. Elderly parents may also prefer to go to aged care services, rather than burden their children with taking care of them. Given these reasons, I predict that areas with fewer alternatives for family care retain more extended families.

Indicators of these factors are the percentage of people in the primary sector, and the number of hospitals per 100,000 population. The first variable indicates the level

of the family mode of production in the area. The second is believed to indicate an aspect of accessibility to social facilities. It is an indirect measure of the concepts. Hospitals are among the social facilities which can be an alternative to family care, and are clearly an indicator of the regional emphasis on public care. Seeking alternative care for the family has long been seen as shameful. Old parents who were sent to a public facility were seen as being abandoned by the family as the family ideal was clearly for the care of the old parents. As the number of public care facilities in the region increase, the more people will have access to them; at the same time the old idea of "being abandoned" diminishes. Therefore it indicates both acceptance of users and regional emphasis on care systems.

One more factor demands attention: the availability of space in a house. Just as a couple cannot form an extended family without any married children or any preceding generation surviving, a couple cannot live with other non-nuclear members if there is no space in the house. If parents are living in a small apartment room, their son upon marriage can not take his bride into the room to live with his parents. Although a couple may prefer to live with their parents as a strategy, they cannot do so if there is no space available in the parents' home.

Thus, the more space available in a house, the more likely it is that the family will be extended. In terms of the ecology of the extended family, areas which have larger houses will have more extended families. An indicator for this is the average number of *tatami* mats per person. A *tatami* is a Japanese floor mat and two *tatamis* are equivalent to 3.3 square meters. The more *tatamis* per person in a prefecture, the more space available for extending the family, and thus the higher the percentage of extended families in the prefecture. It is possible to argue a reverse causal order, in which people decide to have extended families and thus move into bigger houses. However, in Japan where almost 80% of the coresidence pattern is characterized by young couples remaining in their parents' houses, space availability has a causal primacy.

I would like to add another speculation in relation to the availability of space. According to some of the Japanese scholars discussed above, the contemporary variation in the persistence of the extended family is quite possibly an influence of regional customs that have existed at least prior to Meiji. Their emphasis seems to be on the fact that people in the Northeast prefer to live together with other generations, while people in the Southwest prefer to form a separate residence from other generations because of previous customs and practices. I do not deny the normative influence from previous regional customs, but I also argue that such influence is exerted more by the housing arrangement than by the persistence of previous customs. Previous customs required, in general, two types of housing arrangement. A large house was a condition for the coresidence of multiple generations in the Northeast regions. However, a large house was not necessary for the Southwestern regions where separate residences for the older and younger married couples was the practice. It seems quite possible to argue that the Northeastern regions still maintain larger houses than other regions and therefore more chance of forming larger extensions of the family. On the other hand, the more densely populated Southwestern regions have

had relatively smaller houses traditionally and thus have less chance of forming extended families. Although I used the dichotomy of Northeast and Southwest regions to compare my argument with those of other Japanese scholars, they are crude categories and should not be associated with actual geographic boundaries.

It is my speculation that houses, particularly in rural Japan, are likely to be maintained over a number of generations. Having a large living space, more people are allowed to live with the elementary family. At the same time, I should add that having a large house, people will try to maintain it as a family property.

### (3) Normative climate

Normative factors are no less important than economic and demographic factors in both the historical and contemporary contexts. Ruggles contends that the latter two factors can explain the increased opportunities to reside in extended families, but they do not explain why people chose to take advantage of those opportunities (1987). His study shows that the rise of the extended family coincided with a revolution in attitudes on family life—the Victorian idealization of the family relationship (e.g. an acute sense of obligation to kin, willingness to support relatives at great economic and psychic cost). Similarly then, the Japanese extended family may be sustained by the normative climate which favors such a family type. That is, the persistence of the *ie* ideology or the emphasis of *ie*-oriented values among the population sustain the prevalence of the extended families in the area.

Whether or not the *ie* ideology was standardized at the turn of the century and persists in contemporary Japan requires thorough investigation. However, there definitely persists a strong preference for coresidence in Japan (or in the East Asian countries in general: Martin, 1990), regardless of its origin—whether it could be coming from the Confucian ideal of filial piety or pre-war socialization of the *ie* ideology. There seem to be two on-going processes: one is the persistence of the *ie* ideology which encourages coresidence; another is the spread and acceptance of new values, which may be represented by individualism and the conjugal orientation of the family. Areas which have more conjugal ideology or individually-oriented value systems may have fewer extended families while the higher the value of *ie* consciousness among the population, the greater proportion of extended families in those areas.

A great deal of attention is also paid recently to the ideological factors in fertility studies (e.g. Knodel and van de Walle, 1979; Lesthaeghe and Surkyn, 1988; Rindfuss and Morgan, 1983). An important lesson to learn from those studies is their courageous formulation and quantification of “value.” At the individual level then, attitudinal surveys regarding the importance of family property, ancestry, and lineal continuity may be tested by their association with family types. However, there is no direct measure for the areal normative climate. Therefore I will use the percentage of owned houses among all houses as an indirect measure for the areal inclination to the *ie* consciousness. In an individual survey study (1988 Family Survey by Nihon University and the Mainichi Newspaper), it was found that the stronger *ie* value was highly correlated with the type of house. Those who own their own houses, in comparison to those who rent houses/apartments, showed constantly higher scores

for agreement with the statements: "it is the first son's duty to take care of the parents," "the family name should be maintained even with an adoption," "the ancestor's tomb should be looked after and be passed to one's descendents" (Kumon, 1989). The connection is probable from two observations. First, those who have their own houses are more likely to be bound to a particular area. Their consciousness towards protecting and maintaining their houses is stronger and they tend to be more aware of inheritance issues. Also, owned houses are positively associated with larger living space and agricultural area. At the areal level, then, among the areas which have more people who own houses, indicating a higher preference for coresidence and the maintenance of family properties, the more likely that the families are extended.

### ANALYSES AND FINDINGS

The three approaches are believed to have separate effects on the ecology of the extended family and the additive effects of those should sufficiently explain its distribution. Therefore two stages of analyses are employed, both using multiple regression: First, the percentage of extended family is regressed on each determinant; and second, it is regressed on all determinants.

Table 5 lists mean and standard deviations for each indicator. Table 6 is a correlation matrix showing the bivariate correlations among indicators. The relationships of indicators of independent variables to the percentage of extended family are all in the predicted direction. They are all significant at the 0.01 level, except the indicator which measures the alternatives of family care (number of hospitals per 100,000 persons). The relationship between this indicator and the extended family may be confounded by an urbanization effect. That is, alternative care for extended family members may only be relevant in the urbanized areas (or rural areas) and therefore the relationship is not clear with the total cases. Since all the indicators are believed to measure the three aspects, they are all put into the models of the extended family.

Results of four multiple regression analyses are summarized in Table 7. Models 1 to 3 separately test the effect of each determinant—demographic, economic and normative climate—and Model 4 tests their additive effects on the percentage of extended family. The effects are unstandardized regression coefficients ( $b$ ), expressed as the unit change in the extended family for the unit change in the independent variable. The standardized regression coefficients ( $\beta$ ) suggest ideas about the relative effects of independent variables on the dependent variable. F-tests show that all four models are statistically significant.

The first model examines the effect of demographic availability on the extended family. The areas with higher dependency ratios of the elderly have higher ecological distribution of the extended family. The second model estimates the percentage of the extended family with three economic factors: family mode of production, alternatives for family care, and space availability. The effects of all three variables are significant. The percentage of primary industry and average number of *tatami* per household in



Table 5. Mean and Standard Deviation of Variables

Index		Mean	S.D.
Dependent Variable			
%Extended	Percentage of the extended family	25.68	7.60
Independent Variables			
Demographic Availability			
% Elderly Dependents	Dependent ratio of elderly (65+) (population 65+/population 15-64)	15.46	2.84
Economic Factors			
(Family mode of production)			
% 1st Industry	Percentage in the primary industry	15.05	6.82
(Alternatives for family care)			
Hospitals	Average number of hospitals per 100,000	9.05	3.29
(Space availability)			
Tatami	Average number of Tatami mats per person (2 Tatamis=3.3 m <sup>2</sup> )	8.84	1.13
Norm ( <i>ie</i> consciousness)			
% Own House	Percentage of population who reside in their own houses	68.54	9.82

N=47

Source: Prefectural data from 1980 census.

Table 6. Pearson Correlation Coefficients Among Variables

	%Extended	%dep	%1Ind	Hospital	Tatami
% Elderly dependents	0.50**				
% 1st Industry	0.51**	0.63**			
Hospitals	-0.07	0.55**	0.39**		
Tatami	0.75**	0.43**	0.28**	0.07	
% Own House	0.86**	0.65**	0.63**	0.18	0.66**

Table 7. Multiple Regression on the Percentage of the Extended Family

	1		2		3		4	
	b	β	b	β	b	β	b	β
(Demographic)								
% Elderly Dependents	1.33**	0.50					0.11	0.04
(Economic)								
% 1st Industry			0.49**	0.44			0.14	0.13
Hospitals			-0.66**	-0.29			-0.62**	-0.27
Tatami			4.38**	0.65			2.28**	0.34
(Normative)								
% Own House					0.66**	0.86	0.44**	0.57
R-square	0.25		0.73		0.74		0.85	
df	46		46		46		46	
F	14.647		39.302		126.08		47.164	

\* p&lt;0.05

\*\* p&lt;0.01 All models are significant (p&lt;0.001).

the region show positive effects while the accessibility to public care indicates a negative effect on the dependent variable. The third model shows a positive effect of *ie* consciousness, indicated by the percentage of owned houses, on the family extension.

All the variables are entered in the equation Model 4. When we look at the regression coefficients, alternatives for family care (Hospitals), space availability (*Tatami*), and *ie* consciousness (% Own House) are significant at the 0.01 level but not for the other two indicators. In other words, when the space availability, public care, and owned house variables are controlled, family mode of production and demographic effects are attenuated. This tells us that just having a higher dependency ratio and agriculturally oriented populations in an area does not mean that the area has a higher prevalence of the extended family. Here I do have to note the problem of multicollinearity, as the correlation coefficients among dependency ratio, population in primary industry, and percentage of owned houses are relatively high (see Table 6). When we have two highly interrelated independent variables, the second will be explaining essentially the same variation as the first, since there will be considerable overlap (Blalock, 1979: 485). Therefore, it is possible that the percentage of owned houses explains the same variation which the family mode of production and demographic availability variables explain, and thus the non-significant regression coefficients of the latter variables.

With these cautions in mind, the non-significant regression coefficient of the demographic availability variable in the fourth model reveals a non-simple relationship between the aging of the population and the distribution of the extended family. The economic conditions and normative climate, rather than the dependency ratio in the area, are important in determining the ecology of the extended family. In addition, the availability factor from the position of household heads is effective as long as there is a relative availability of household heads or children for elderly parents. However, in an area whose population is highly represented by the elderly, a condition may arise in which the elderly do not have enough available children to coreside in the area. Therefore, when the urbanization is controlled, too high an elderly availability exerts negative potential for the ecological distribution of the extended family.

The size of the effects of all the variables are reduced in the last model when they are compared to the previous models. However, the size of the effect of areal care system (Hospitals) has not changed much. The areal care system has an independent and direct effect on the formation of the extended family. Overall, in terms of the explained variance as indicated by R-squares, this model explains 85% of the variance in the ecological distribution of the extended family. The explained variance is much higher than any of the previous models. The size of the normative effect is relatively higher than those of the other variables, but all variables contribute to the explanation of the variance in the percentage of the extended family.

## CONCLUSION

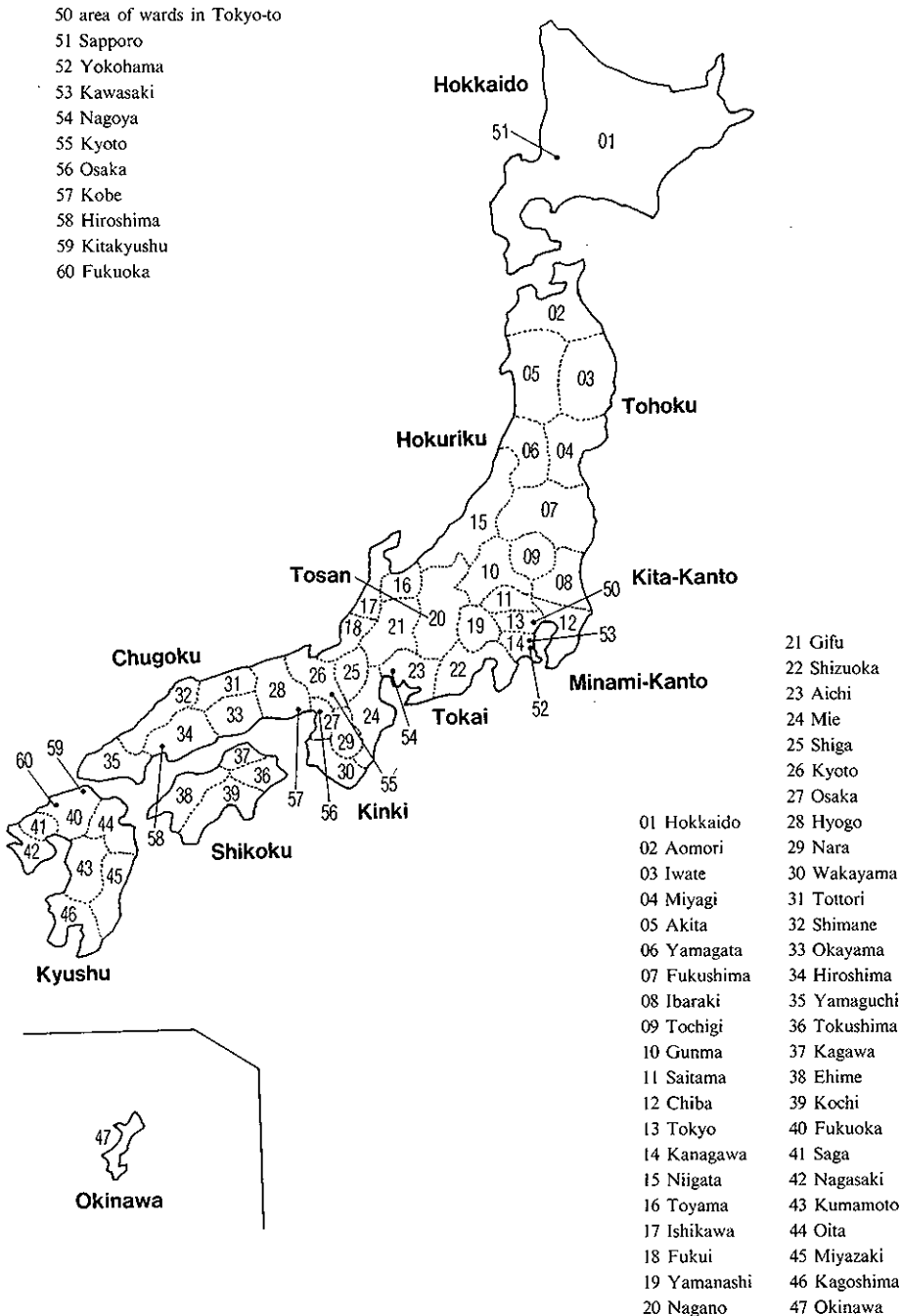
Steady declines in household size as well as in the extended family are observed in the past half a century of family change at the national level. This is consistent with Western experiences. Within the national figures, however, regional variations exist. The differences among regions are even increasing over the decades. Although the percentage of extended families in any prefecture is decreasing, reflecting changes at the national level, the degree and the magnitude of the change varies greatly. The idea of the convergence of family patterns along with industrialization, therefore, has to be withheld.

The variation of the extended family was statistically analyzed from three perspectives—demographic, economic and normative factors—on the assumption that there may be qualitative differences influenced by the previous family system in the region, as well as socioeconomic and demographic differences produced by the country's economic expansion and urbanization. A normative climate with stronger *ie* consciousness and more space availability increase, while the availability of alternative family care reduces, the prevalence of the extended family in the area. The effect of *ie* consciousness, measured by the percentage of owned houses, plays a relatively strong role in the overall explanation. Demographic availability and the engagement in primary industry both have indirect effects on the family extension. Given these variables, we have a fairly good estimate of the ecology of the extended family in contemporary Japan.

This paper suggested the importance of recognizing the regional variation of family behavior in Japan. The process of family transformation, as well as the current distribution of the family structure, are quite different from region to region, due to old family systems or customs and to the aftermath of drastic economic and population relocations. Regional variations, as observed in the percentage distribution of the extended family, are increasing in contemporary Japan. Whether or not the regional variation will continue to increase in the 1990s is beyond the scope of the above analysis. Unbalanced population and economic structures in the country, together with the persistent *ie* consciousness, may further accentuate regional variations. At the same time, we observe more variation in the quality of extended family residences. A recent catch-phrase in the housing market, "housing for two generations," for example, indicates a probable rise of modified stem families. Meanwhile governmental support for community care systems is gradually decreasing the burden on extended kin. Future research, therefore, needs to address qualitative as well as quantitative variations in the extended family.

**Appendix:** Map of Japan by Prefecture

Prefectures are denoted by the serial numbers 01-47. Prefecture is an administrative area over cities, towns and villages. 50-60 are the eleven largest cities (*Vital Statistics*, 1984: 10).



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日本拡大家族のエコロジー

黒須里美

要旨: 本稿の目的は見過ごされている現代日本の家族構造の地域的差異に注目し、拡大家族の地域性の要因を明らかにすることにある。データとして国勢調査に基づく資料を利用した。前半では、半世紀にわたる人口変動と共に国レベル、県レベルにおける家族構造の変化を探った。この分析に見る数値のパターンは、家族研究者によっていわゆる東北型家族、西南型家族と従来から呼ばれてきたものと一致している。後半ではこの地域性の要因

を判明すべく、47の都道府県を分析単位として数量分析を試みた。人口、経済、文化的特徴の違いによって拡大家族の地域性を説明するモデルをつくり重回帰分析を実行した。地域に残る家意識や家屋の大きさは拡大家族形成を助長し、反対に家族に代わる地域の福祉は拡大家族の割合を低下させるという結果を含め、このモデルによって85% ( $R^2$ ) が説明された。明治民法以前からの地方慣習のなごりと戦後の経済成長による激しい社会・人口移動の影響によって、家族変動のプロセスも現在の家族構造も地域によってかなり違っていることが明らかになった。