

1-2.社会経済的要因

- ①就業状況：就業／不就業
- ②学歴：高校中退以下／高卒／高卒以上

1-3.文化的要因

- ①居住地：出生率の高い地域（Prince Edward, Island, Manitoba, Saskatchewan, Alberta）／それ以外
- ②宗教活動：毎週通っている／それ以外
- ③兄弟姉妹数：0人／1人／2人以上
- ④出生地：カナダ／ヨーロッパ・北アメリカ／それ以外

1-4.結果

表1は、カナダ統計局の分析結果と本研究における再分析の結果を示している。それぞれの分析結果には若干の違いがみられるものの、概ね同様の結果を得ることが出来た。主な分析結果は以下の通りである。

【人口学的要因】

すべての変数に有意差が見られたが、なかでも「第1子出産年齢」と「第1子出産から第2子出産までの期間」の効果が特に大きい。すなわち、第1子出産年齢が早いほど、第3子を出産する確率が高く、第1子出産から第2子出産までの期間が短いほど、第3子を出産する確率が高いことが分かる。

「出生コーホート」は、1944年以前のコーホートにおいて第3子を出産する確率が高いものの、それ以降のコーホートには有意差は見られていない。また「婚姻関係」については、男性のパートナーと同居している女性に第3子を出産する傾向がみられるものの、それが同棲か法律上の婚姻関係かという点での違いは見られていない。

【社会経済的要因】

特に「就業状況」の違いに大きな効果がみられた。すなわち仕事をもつ女性の方が仕事を持たない女性にくらべて第3子を出産する傾向が低いことが分かる。また「学歴」は、高校を卒業していない女性と高卒以上の女性との間で有意な差がみられるものの、高卒とそれ以上との間には有意差はみられていない。

表1：第3子出生の人口学的、文化的、社会経済的要因に関する
比例ハザードモデル（1997年人口報告書、カナダ統計局、p 55）

	Model		
	Univariate	Multivariate	
Demographic Variables			
Period of Birth	-Born Before 1945	1.76 (1.23)	1.76 (1.34)
	-Born Between 1945 and 1954	0.87 (0.59)	1.06 (0.86)
	-Born Between 1955 and 1964	0.91 (0.59)	1.07 (0.72)
	-Born After 1965	1.00 (1.00)	1.00 (1.00)
Age of First Birth	-Less Than 25	2.36 (2.28)	2.53 (2.57)
	-Between 25 and 29	1.31 (1.32)	1.60 (1.81)
	-30 or More	1.00 (1.00)	1.00 (1.00)
Interval Between the First Two Births	-Less Than 30 Months	1.00 (1.00)	1.00 (1.00)
	-Between 30 and 53 Months	0.57 (0.57)	0.66 (0.65)
	-More Than 53 Months	0.29 (0.35)	0.31 (0.32)
Marital Status	-Common-Law Union	0.93 (0.58)	1.05 (0.69)
	-Not in Union	0.53 (0.33)	0.63 (0.27)
	-Married	1.00 (1.00)	1.00 (1.00)
Socioeconomic Variables			
Employment Status	-Working	0.49 (0.51)	0.65 (0.70)
	-Unemployed	1.00 (1.00)	1.00 (1.00)
Education	-No Secondary Diploma	1.64 (1.87)	1.31 (1.50)
	-Secondary Diploma	1.00 (1.00)	1.00 (1.00)
	-Post-Secondary	0.89 (1.10)	1.02 (1.21)
Cultural Variables			
Region	-Superior Fertility	1.20 (1.07)	1.17 (0.98)
	-Others	1.00 (1.00)	1.00 (1.00)
Religious Practice	-Weekly	1.59 (1.48)	1.46 (1.33)
	-Other	1.00 (1.00)	1.00 (1.00)
Number of Siblings	-No Siblings	1.05 (1.13)	0.96 (0.91)
	-One Sibling	1.00 (1.00)	1.00 (1.00)
	-More Than One Siblings	1.34 (1.35)	1.11 (1.13)
Place of Birth	-Born in Canada	1.00 (1.00)	1.00 (1.00)
	-Europe and North America	0.76 (0.73)	0.80 (0.75)
	-Other Countries	0.98 (1.04)	1.48 (1.23)

() 内の数字は、復元モデルにおける数値。

太字は5%で有意。

網掛けは検定結果に食い違いが見られる部分。

【文化的要因】

「宗教活動」に特に大きな効果がみられる。すなわち毎週、宗教活動に参加している女性の方が第3子をもつ傾向にあるといえる。また「居住地」については、出生率の高い地域に住んでいる女性ほど第3子を出産する傾向に

あるが、こうした傾向は他の変数をコントロールすると若干弱くなっている。また「出身地」の結果から、ヨーロッパや北アメリカからの移民の女性は第3子をもつ傾向が低いのに対して、その他の地域から移民の女性は比較的第3子をもつ傾向にあることが分かる。カナダではかつて、ヨーロッパや北アメリカからの移民が多かったが、近年は発展途上国出身の移民が多くなっている。それに伴いカナダ出身の女性の出生率はかつて移民の出生率よりも高かったが、最近では移民の出生率よりも低くなる傾向にある。最後に「兄弟姉妹数」であるが、これは他の変数をコントロールした結果、効果が見られなくなっている。

2. ケベックにおける出産手当制度の政策的効果

次に1988年から1997年まで実施されたケベック州の出産手当制度の効果についてみることにしよう。1997年の人口統計報告書では、ケベック州の出産手当制度の効果を分析するために先に述べた分析に以下のような修正を加えている。

2-1. モデルの修正

- ① このプログラムの実施期間中に25～35歳であった女性にサンプルを限定する。これにより、「出生コーホート」をモデルから除外した。
- ② 「兄弟姉妹数」は、先の分析で変数としての効果が見られなかったため、モデルから除外した。
- ③ 「出身地」は、サンプルを限定したことにより、移民のサンプルが少なくなったため、モデルから除外した。
- ④ 政策の効果を分析するために新しい変数をモデルに2つ追加した。
 - (1) 出産手当：第3子出産にあたって出産手当を得ることが出来るか／出来るか（1988年以降にケベック州に住んでいたか／いないか）。
 - (2) 第2子出産の時期：1988年より前に第2子を出産／1988年以降に第2子を出産

2-2. 分析結果

上記のような修正をおこなった結果が表2である。表2からも明らかなように、この分析ではケベック州の出産手当制度が第3子出生に与えた政策的効果を確認することができなかった。

今後は、世帯構成（特に継子や養子の有無）や家族計画に関する態度（とくに希望する子供数）といった変数についても検討を行い、モデルの修正を試みていきたい。

表2：ケベック州における政策の効果に関する比例ハザードモデル
(1997年人口報告書、カナダ統計局、p60)

	Model		
	Univariate	Multivariate	
Demographic Variables			
Age of First Birth	-Less Than 25	1.56 (1.78)	1.60 (1.93)
	-Between 25 and 29	1.00 (1.01)	1.01 (0.98)
	-30 or More	1.00 (1.00)	1.00 (1.00)
Interval Between the First Two Births	-Less Than 30 Months	1.00 (1.00)	1.00 (1.00)
	-Between 30 and 53 Months	0.72 (0.82)	0.72 (0.90)
	-More Than 53 Months	0.43 (0.45)	0.42 (0.44)
Marital Status	-Common-Law Union	1.04 (0.83)	1.04 (0.79)
	-Not in Union	0.55 (0.46)	0.55 (0.22)
	-Married	1.00 (1.00)	1.00 (1.00)
Socioeconomic Variables			
Employment Status	-Working	0.53 (0.48)	0.53 (0.47)
	-Unemployed	1.00 (1.00)	1.00 (1.00)
Education	-No Secondary Diploma	1.22 (1.38)	1.22 (1.24)
	-Secondary Diploma	1.00 (1.00)	1.00 (1.00)
	-Post-Secondary	0.97 (1.01)	0.97 (1.26)
Birth Allowances	-Yes	0.81 (0.88)	0.75 (0.95)
	-No	1.00 (1.00)	1.00 (1.00)
Period of 2nd Birth	-Before 1988	...	1.00 (1.00)
	-1988 and After	...	1.24 (0.90)
Cultural Variables			
Region	-Superior Fertility	0.98 (1.17)	0.98 (1.05)
	-Others	1.00 (1.00)	1.00 (1.00)
Religious Practice	-Weekly	1.46 (1.53)	1.46 (1.44)
	-Other	1.00 (1.00)	1.00 (1.00)

※ () 内の数字は、復元モデルにおける数値。

※太字は5%で有意。

※網掛けは検定結果に食い違いが見られる部分。

日本における低出生力と家族政策に対する態度

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フランスにおいては出生動向や家族政策に関する世論調査が比較的頻繁に実施されてきており、それが家族政策策定にあたって参考にされているため、わが国についても 1990 年と 1995 年の「人口問題意識調査」の個票データを若干の比較も交えながら分析を行った。その結果、低出生力対策に対する態度、より具体的には子育て支援策と外国人労働者導入政策について「必要感」、「マスコミ影響」、「伝統主義」、「反政府傾向」の 4 つの仮説のいずれもが支持された。他方、フランスでは近年、家族政策が出生促進策というよりも貧困対策、社会的統合政策としての意味合いを強めていると国民も認識しているが、わが国でも出生促進策よりも子育て支援策としての家族政策の方が支持されるように見受けられる。また、出生動向と政策介入に対する国民の態度の規定要因については日仏で類似するものもあるが、異なるものも多いことも示唆された。

Attitudes toward Low Fertility and Family Policy in Japan

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INTRODUCTION

Demographic Trends

Japan's population, which was 84.1 million in 1950, has reached 125.6 million in 1995, making Japan the eighth most populous country in the world. The annual growth rate was about 3 percent during the immediate postwar period, but decreased to the order of 1 percent in the mid-1950s, and remained at this level through the mid-1970s. Then, it fell below 1 percent and has continued to decline further to the level around 0.3 percent. The slower growth of population is mainly due to the decline in fertility and mortality. Both declined rapidly in the immediate postwar period. Then, the fertility stayed around the replacement level and declined further beginning in the mid-1970s. The mortality continued to fall further, particularly in the old age group.

This led to a sharp decline in the percentage of the child population (aged 0-14) while that of the aged population (aged 65 and over) continued to rise, as Table 1 shows. The share of the working-age population (aged 15-64) rose from 59.6 percent in 1950 to 68.9 percent in 1970, and has virtually leveled off at around 70 percent thereafter. The share of the child population, which was 35.4 percent in 1950, has dropped to 15.8 percent by 1995. On the other hand, the proportion of the aged population rose rapidly, from 4.9 percent in 1950 to 10.3 percent in 1985. The speed of aging has been accelerated since then and the share of the aged population in 1995 has been 14.5 percent. As a consequence, the median age of population increased by 17.5 years from 22.2 in 1950 to 39.7 in 1995.

The aged population is projected to increase further by the new series of official population projections for Japan, which was published by the National Institute of Population and Social Security Research (formerly, Institute of Population Problems), Ministry of Health and Welfare in January 1997. According to the medium-variant, the total population will increase continuously from 125.6 million in 1995 to 127.8 million in 2007 and decrease continuously thereafter to 125.6 million in 2017, 100.5 million in 2050 and 67.4 million in 2100. While both the child population and the working-age population will gradually decrease, the aged population will continue to increase from 18.3 million in 1995 to 33.4 million in 2021 and stays around the same level until 2050 before starting to gradually decrease. The median age of population will increase from 39.7 years in 1995 to 50.6 years in the late 2030s, decrease to 49.9

years around 2050 and increase a little to 50.0 years in the late 2050s due to the echo effects of baby booms and busts.

The population of Japan is expected to experience rapid aging not previously observed in the West. The proportion of the elderly among the total population will rise from 14.5 percent in 1995 to 27.4 percent around 2025, which will probably make Japan one of the most aged country in the world. It is projected to rise further to the highest level of 32.3 percent around 2050 before starting to decrease. Among the elderly, the proportion of "older old" population (aged 75 and over) will dramatically increase from 5.7 percent in 1995 to 15.6 percent in 2025. It is projected to reach the highest level of 19.5 percent in the late 2050s.

Changes in Public Attitudes toward Population Issues

Against this demographic background in Japan, the term for aging (*koreika*) has been popular since the 1970s. In the early 1990s, however, Japan has experienced a major change in the public attitudes toward population issues. After the "1.57 Shock" (the public sensation associated with the media coverage of the record-low total fertility rate of 1.57 for 1989) in the second half of 1990, low fertility has suddenly become a public agenda. The term "shoshika (trend toward less children)" became popular immediately after its first use in the *1992 White Paper on National Life* (published by the Economic Planning Agency) and came to be often used side by side with "koreika" by mass media, implying low fertility as a major cause of population aging or as the other side of the same coin. At the same time, the term for population policy has become less of a semi-taboo word although the terms for "child-rearing support measures (*kosodate shien saku*)" or family policy have been preferred. Naturally, they are often considered as measures to cope with "shoshika" but their link to "koreika" is often mentioned, implying that they also have population policy motives.

The Institute of Population Problems (IPP, currently, National Institute of Population and Social Security Research) conducted its first national opinion survey on population issues in June 1990, just before the beginning of the "1.57 shock" and before the collapse of "bubble economy" (IPP 1991). It has conducted the second one in June 1995 (IPP 1996) and it is possible to assess the effects of these changes in the early 1990s on the determinants of public attitudes toward population issues, particularly low fertility and possible policy measures to cope with it.

This paper presents the results of multivariate (multinomial logit) analysis of these two survey data sets to explore the changing determinants of attitudes toward low fertility and possible policy measures to cope with it. This is an extension of the present author's past studies on public attitudes toward population trends and possible policies to deal with it (Kojima 1989, 1990, 1992, 1995, 1996, and 2000).

HYPOTHESES

Although the National Institute for Public Opinion Survey (1950) conducted a national opinion survey on population problems in 1949 and the Institute of Population Problems (IPP 1978 and 1979) asked questions on population-related

issues in its 1977 and 1978 surveys, they were conducted when people were concerned with overpopulation. The IPP's national household survey conducted in 1985 was the first one to ask public opinions on population-related issues at the time of public concern over low fertility (Institute of Population Problems 1986).

The 1985 survey asked household heads their opinion about the statement, "Since the burden of the society will increase as the proportion of the elderly increases, the number of children that couples bear might as well increase." Only 8.9 percent of respondents chose "strongly agree", 19.2 percent "somewhat agree", 52.3 percent "hard to say", 13.8 percent "somewhat disagree" and 5.9 percent "strongly disagree". The results of multinomial logit analysis show that being female, old age, being non-migrant, low education, living in Tohoku/Hokuriku Areas (with a higher prevalence of extended households) tend to be associated with positive response to this statement (Kojima 1992).

This survey also asked opinion about the statement, "The government might as well take some measures so that Japanese couples can bear the number of children that they want" in order to explore the potential needs for fertility policy. In contrast to the response to the previous question, 23.9 percent chose "strongly agree", 18.8 percent "somewhat agree", 41.2 percent "hard to say", 9.0 percent "somewhat disagree" and 7.1 percent "strongly disagree". According to the results of multinomial logit analysis, being female, being married, being non-migrant, middle-level education, middle-level income (spending) and rural residence are associated with positive attitudes toward fertility policy (Kojima 1992). Kojima (1989) restricted the sample to married male household heads aged below 50 and found that younger age and the residence in large metropolitan areas have positive effects on interventionism, while older age, small family size and high income have negative effects. These results may suggest that household heads with these characteristics have potential needs for fertility policy. However, population aging is not explicitly referred to in this question about population policy.

As far as the present author knows, this 1985 survey seems to be the only comparable national survey in Japan which specifically asked the opinion about population aging and possible measures to slow it down in the 1980s. There have been surveys on population issues in other countries, but they have mainly asked questions on the size and growth of population rather than its composition. The only exceptions may be the comparative surveys conducted in selected European countries (Austria, Belgium, Hungary, Italy, the Netherlands, Spain, Switzerland) introduced in the book edited by Moors and Palomba (1995). However, the results for most of these countries only indicate that those who have a negative opinion toward population aging are majority or more numerous than those having a positive opinion. Only the results for Belgium indicate the gender differentials: the proportion of men having a negative opinion is larger than that of women, but it corresponds to the difference in the proportion having the neutral or indecisive choice (Avramov et al. 1995:90).

The surveys on population issues in other countries often ask about the possible choices among concrete family (fertility) policy measures, but almost none of them seems to ask the choice among pronatalist and immigration strategies while demographers examine them as alternative or complementary population policy measures, using macro-simulation (e.g., Blanchet 1988, Lesthaeghe et al. 1988,

Steinmann 1991, Espenshade 1994) and there are separate demographic surveys or questions asking opinion about immigration policy (e.g., Koesoebjono et al. 1991, Espenshade and Hempstead 1996). Girard (1971) seems to be the only one who examined the interrelationship between the attitudes toward fertility and immigration to find that pronatalist respondents tend to be pro-immigration, but these attitudes did not specifically pertain to policies. As for the attitudes toward government intervention into fertility, the results of the 1975 French survey show that high-status occupations, high fertility and high income are associated with interventionism (Girard et al. 1976:131). On the other hand, Palomba et al. (1989:311) found that low education is associated with interventionism in the Netherlands and Italy.

The author's previous study (Kojima 1996) presents the results of multinomial logit analysis of data from the 1990 and 1995 surveys to explore the changing determinants of attitudes toward projected population aging and possible acceptance of alternative population policies to slow it down in Japan. The following five hypotheses are examined: "felt needs," "felt threat," "media influence," "traditionalism" and "anti-government". According to the multinomial logit analysis of 1990 survey data for determinants of three-category dependent variable representing the attitudes toward aging, those aged 35-69, the divorced, those in professions and management and inhabitants of Kyushu Area are more likely to have positive attitudes toward aging relative to neutral attitude, while females and inhabitants of Chushikoku Area are less likely. Those aged 65-69, those with higher education, those in professions and management and inhabitants of Kanto Area are more likely to have negative attitudes toward aging relative to neutral attitude, while those aged 35-44, the never-married, the least educated, those in manual and "other" occupations and inhabitants of Hokkaido and Kyushu Areas are less likely. These results as well as the changes in determinants from 1990 to 1995 seem to support the "felt threat" and "media influence" hypotheses. On the other hands, the results of multinomial logit analysis of 1990 survey data for determinants of five-category dependent variable representing both the attitude toward aging and the choice of possible policy measures are at least partly consistent with all the five hypotheses. These hypotheses are also partly consistent with some changes in determinants from 1990 to 1995. However, there remain some significant effects and their changes that are unexplained by these hypotheses.

Drawing on the results of thid previous research (Kojima 1996) and partly on the hypotheses of Espenshade and Hempstead (1996) originally constructed for attitudes toward immigration, the following four hypotheses can be proposed: "felt needs," "media influence," "traditionalism" and "anti-government" hypotheses. The "felt threat" hypothesis in the previous work has been dropped because it mainly relates to international migration.

The "felt needs" hypothesis is relevant to the attitudes toward policy measures to cope with low fertility. The "generalized cost-benefit hypothesis" proposed by Espenshade and Hempstead (1996:542-543) suggests that respondents have a broader view which can include labor market competition as a component of their cost-benefit calculation for immigration policy, but it can be extended to their calculation for family policy as a whole to be named as "felt needs". It is thus named because the

calculation should also include personal costs and benefits: it is assumed that those who have net benefits from policy measures are more likely to favor them.

The "media influence" hypothesis is not directly relevant to the hypotheses proposed by Espenshade and Hempstead (1996), but may crosscut some of them. It assumes that those who are more heavily exposed to the mass media and those who can readily understand their messages are more likely to be influenced. It also assumes that they are more likely to change their opinion when the mass media collectively shifts the issues for a short-lived large-scale campaign (including negative ones on aging, low fertility and immigration), changes the axis for its "mainstream" or "middle-of-the-road" stance, or just comes to ignore "outdated" issues. Since the survey data to be analyzed do not contain any direct information on the media accessibility, its influence has to be inferred indirectly.

The "traditionalism" hypothesis draws on Kojima (1992) which found that the respondents with the "traditional" characteristics are more likely to favor pronatalist policy. The "anti-government" hypothesis also draws on Kojima (1992) which found that those with certain demographic, socioeconomic and regional characteristics tend to oppose interventionism. It also incorporates an element of "social and political alienation" hypothesis proposed by Espenshade and Hempstead (1996:543). The following concrete hypotheses regarding the attitudes toward low fertility and policy measures derive from the four hypotheses described above. Being female, young, and married are hypothesized to be associated with negative attitudes toward low fertility because of their felt needs as current and prospective parents, while being male, old, and unmarried with positive attitudes. Educational level, as an indicator of media accessibility, is expected to be associated with negative attitudes toward low fertility.

On the other hand, being female, young, married, and inhabitants of Kanto Area (including Tokyo Megalopolis) are expected to have positive effects on the choice of policy measures to deal with low fertility because of their felt needs for government support. Being young, high education and residence in Kinki Area (including Kyoto-Osaka-Kobe Megalopolis) are expected to be associated with negative attitudes toward any policy measures because they are often associated with anti-government attitudes. Females, older persons, those in agriculture and inhabitants of Tohoku and Chubu (including Hokuriku) Areas are also expected to have positive attitudes toward policy measures because they tend to be more traditional.

The change in the attitude toward low fertility and possible measures to cope with it during the five-year period can be explained by the changed perception about the demographic situation because of the increased media coverage of low fertility. Those respondents who are more exposed to and/or affected by mass media are hypothesized to have changed their attitudes to a larger extent.

DATA AND METHOD

Data

The Institute of Population Problems conducted its first and second Public Opinion Surveys on Population Issues in 1990 and 1995. They were conducted for a sub-sample (around 25,000 persons aged between 20 and 69) of the Basic Surveys on

Family Life conducted by the Department of Statistics and Information, Ministry of Health and Welfare. Two-stage systematic and stratified sampling was applied to all the census enumeration districts in Japan. The IPP's surveys used self-enumerated questionnaires while the Ministry's surveys were conducted through interviews.

The IPP's 1990 and 1995 surveys asked more directly, than its 1985 household survey, the opinions towards fertility decline and possible policy measures to deal with it. Both surveys asked the respondents to choose one answer among "very good," "good," "hard to say," "bad," and "very bad," to the statement, "Japan's fertility keeps on decreasing during the past ten and some years. What do you think of this fact?" Those who have chosen either "bad" or "very bad" are asked to choose one answer to the question, "Do you think that the government should take some measures to raise fertility?" among the following three choices: "The government should take no measures at all," "It does not matter," "The government should take some measures." Those who had the last choice are asked to indicate the first and the second choices among the following six possible policy measures: "to form the environment facilitating marriage through housing and other policies," "to reduce the financial burden of child bearing and rearing," "to improve the provision of day-care centers and other child care facilities," "to improve the arrangements for parental leave," "to increase the restriction of induced abortions," and "others (specify _____)."

Table 1 shows the results of cross-tabulation by sex of combined answers to these two questions, collapsing the positive answers and negative answers into one category each. The details of these two surveys are found in their reports (IPP 1991 and 1996). In 1990, 9.1 percent of respondents have positive attitudes toward fertility decline while 43.6 percent have neutral attitude (choosing "hard to say"). Females are less likely to have positive attitudes and more likely to have neutral attitude than males. Among those who have negative attitudes toward fertility decline (40.2 percent of respondents who are asked about the possible policy measures to raise it), 1.5 percent of the total are against policy intervention, 4.9 percent are indifferent about it, and 30.6 percent are for it. The gender differences are relatively small for policy intervention.

In 1995, the percentage of respondents having positive attitudes toward fertility decline has been almost halved and the percentages having either neutral or negative attitudes have slightly increased. While the percentages of respondents who have negative and neutral attitudes has remained at the similar level, there has been a slight increase in the percentage in favor of possible policy measures to raise fertility. The increased proportion of respondents who have negative attitudes toward fertility decline and those in favor of pronatalist policy may be due to the "1.57 shock" immediately after the 1990 survey.

Table 2 shows the results of cross-tabulation by sex of the first and the second choices of possible policy measures indicated by those in favor of pronatalist policy. In both 1990 and 1995 financial support is by far the most popular among the first choice and housing support is the second. In 1990 parental leave and child care facilities follow at around the same level, but the former grows larger in 1990. While housing support is more likely to be favored by males, parental leave and child care facilities are more likely to be favored by females, probably reflecting the gender

division of labor in these spending. Among the second choice the order of these four choices are about the same, but the level becomes much closer, while retaining the similar gender differences.

Method

In order to clarify the change in differentials of opinion toward low fertility and possible policy measures to cope with it at the same time, multinomial logit analysis (the CATMOD procedure in the SAS package) is conducted on the three-category dependent variable (positive, negative and neutral) for the attitude toward fertility decline, five-category dependent variable for the combination of this attitude and the attitude toward possible policy intervention and a series of six-category variables inserting the choice or non-choice (either the first or the second) of each kind of possible measure. In addition for 1995, the analysis is conducted on the three-category dependent variable for attitude toward family policy (positive, negative and neutral) and five-category dependent variable incorporating the attitude toward fertility decline. Multinomial logit analysis is most suitable for qualitative dependent variables with three or more categories because the log odds (or logit) of three or more contrasts can be estimated simultaneously.

The first panel of Table 3 shows the frequency distributions for independent variables used in the model for the comparative analysis of 1990 and 1995 survey results. Independent variables include sex, age, marital status, education, employment status, occupation, and region (Area). Since the definitions of urban/rural residence are different between the two surveys, it is not included as an independent variable in this model. Only categorical variables are used as independent variables because the CATMOD procedure does not usually allow the direct use of continuous variables and because it is more efficient due to the use of log-linear methods. The dummy coding is used for the ease of interpretation, although the CATMOD procedure uses, by default, the effect coding.

The coefficients are converted to relative odds by exponentiation for the ease of interpretation. The relative odds which is smaller than the unity means that the category has a negative effect on the relative odds compared with the effects of reference category set to the unity (= exp (0)).

RESULTS

Attitudes toward Fertility Decline

The last two panels of Table 3 show the results of multinomial logit analysis for determinants of attitudes toward fertility decline in 1990 and 1995 in the form of relative odds. According to the second panel for 1990, males, older persons, the never-married, those with higher education and inhabitants of Kinki (including Kyoto-Osaka-Kobe Megalopolis) Area are more likely to have positive attitudes toward fertility decline relative to neutral attitude, while inhabitants of Chushikoku Area are less likely, possibly reflecting population density of each Area and thus supporting "felt needs" hypothesis. At the same time, males, older persons, those with higher

education are more likely to have negative attitudes toward fertility decline relative to neutral attitude, in addition to inhabitants of Tohoku and Kanto (including Tokyo Megalopolis) Areas. The effect of education may be partly related to the exposure to mass media. The negative attitudes held by inhabitants of Tohoku Area may reflect their traditional attitudes. On the other hand, single persons, part-time employees, manual workers and inhabitants of Hokkaido Area are less likely to have negative attitudes toward fertility decline relative to neutral attitude. Only marital status seems to have a consistent effect. The results may suggest that males, older persons and those with higher education are less likely to have neutral attitude. These results seem to support both the "felt needs" and "media influence" hypotheses.

According to the third panel for 1995, gender and age have similar effects on neutral attitudes. If it reflects the traditionally defined appropriate behavior by gender and age hierarchy, it supports the "traditionalism" hypothesis. The never-married are also more likely to have positive attitudes and less likely to have negative attitudes toward fertility decline as in 1995, but the widowed and the divorced are not significantly less likely to have negative attitudes and the widowed come to be less likely to have a positive effect possibly through the influence of mass media. Possibly for the same reason, education comes to lose its significant effect on positive attitudes while it retains positive effects on negative attitudes toward fertility decline. The effect of living in Kinki Area is strengthened possibly because of the Great Awaji-Hanshin Earthquake having heavily affected this area just before the 1995 survey, supporting the "felt needs" hypothesis. The effects of other independent variables are generally similar to those in 1990 although the significance level might have changed a little. In sum, the "felt needs," "traditionalism" and "media influence" hypotheses seem to be supported.

Attitudes toward Possible Policy Measures

Table 4 shows the results for determinants of attitudes toward possible policy measures to raise fertility in 1990 and 1995 in the form of relative odds among all the respondents including those who have positive and neutral attitudes toward fertility decline. According to the left-hand side panel for 1990, males and those with higher education are more likely to favor non-intervention while those in agriculture are less likely to favor it, suggesting the effects of traditionalism. Similarly to the results regarding the negative attitudes towards fertility decline, males, older persons and those with higher education are more likely to favor policy intervention to raise fertility and single persons, part-time employees, manual workers and inhabitants of Tohoku and Kanto Areas are less likely, reflecting their effects on the negative attitudes toward low fertility which limit the respondents answering the question about policy intervention and tending to favor policy intervention. In addition non-employed persons (including full-time home-makers and students) are less likely to favor intervention possibly because they have less "felt needs" for policy measures which tend to support working mothers. On the other hands, those with junior-college (two-year) education and those in professional and managerial occupations are more likely to have neutral attitude toward policy intervention while inhabitants of Hokkaido Area are less likely, possibly suggesting their informed reservation at least for the first two groups.

According to the second panel for 1995, those in professional and managerial occupations and inhabitants of two major Metropolitan Areas (Kanto and Kinki), in addition to males and those with higher education, are more likely to favor non-intervention, possibly reflecting the anti-government or anti-media sentiments among some of those respondents. Those favoring policy intervention are generally similar to those in 1990, but the inhabitants of Kanto (Tokyo Metropolitan) Area change their attitudes from positive to negative, possibly perhaps because they come to distrust the government that does not live up to their expectation about effective policy intervention in spite of media campaign after the "1.57 shock. There are more significant variables for the neutral attitude toward policy intervention, perhaps reflecting the effects of media campaign having selectively decreased uninformed persons in certain categories. In sum, the "felt needs," "traditionalism," "media influence" and "anti-government" hypotheses seem to be supported.

Table 5a and 5b presents the results gained by separately replacing the positive attitudes by the choice and non-choice of each policy measure in the model for Table 4. Therefore, males, older persons and those with higher education are more likely to favor most policy measures except the restriction of induced abortions while single persons are less likely. The self-employed, part-time workers and the non-employed are generally less likely to favor those family friendly measures which tend to favor full-time working employees probably because they have less felt needs. Manual workers are less likely to favor housing and financial measures perhaps because they are aware that they do no benefit much from these measures, tending to favor white-collar workers. Housing measures are favored in Kanto and Kinki Areas where housing shortage for the family is felt. Financial measures are more favored in Tohoku and Kanto Areas and less favored in Hokkaido Area possibly because of relative cost of raising children. Child care facilities are favored in Tohoku, Kanto and Kyushu Areas probably because of relative shortage. Parental leave measures are less favored in Kanto and Kinki Areas probably because the labor force participation of mothers are lower due to the difficulty in commuting. They are less favored in Hokkaido, Chushikoku and Kyushu Areas possibly because of longer-distance commuting to work place. All these results seem to support the "felt needs" hypothesis.

On the other hands, the results for anti-abortion measures seem to support other hypotheses. Older persons are more likely to support them probably because of their traditional ideas. Non-employed persons favor them possibly because of traditionalism and possibly because of their alienation that can be incorporated in anti-government sentiment. The results for "others" may support the "felt needs" because the never-married are more likely to favor it, but it can support the "media influence" hypothesis because education has a positive effect. It can also support the "anti-government" hypothesis because inhabitants of Kinki Area tend not to favor it. In sum, the "felt needs," "traditionalism," "media influence" and "anti-government" hypotheses seem to be supported.

SUMMARY AND DISCUSSION

In sum, most of the results for determinants of attitudes toward fertility decline and choice of possible measures to cope with it largely support, at least, one of the following four hypotheses: "felt needs," "media influence," "traditionalism," and "anti-government." But there remain some significant effects and their changes that are unexplained by these hypotheses.

Some of these unexplained effects may be related to the magnitude of respondents choosing the neutral answer ("hard to say") as an opinion toward fertility decline and possible policy measures. Therefore, the neutral answer in combination with the neutral answers to other questions should be examined in detail as done by Collomb (1977). The neutral answers can be divided into "well-informed neutral attitude" and "badly informed neutral attitude" ("Don't Know") as Palomba et al. (1989) did.

It is also better to analyze distinction between the level of agreement ("very good" and "good") or disagreement ("very bad" and "bad") with the statement on aging. In this regard, the use of multinomial logit model may or may not be more suitable than ordered probit model which Espenshade and Hempstead (1996) has used. Multinomial logit model assumes that each choice is discrete, but the intensity of agreement may suggest otherwise. However, the intensity of agreement, including "hard to say" between "good" and "bad", may not be ordinal (as assumed by ordered probit model), if the neutral answer is chosen instead of "Don't Know" by some respondents.

The 1995 survey additionally asked an opinion about another set of statements on family policy for child and elderly care. In one of them respondents were asked to choose one answer among "totally agree," "somewhat agree," "hard to say," "somewhat disagree," and "totally disagree" to the statement, "Child bearing and rearing are societal issues in the sense that they build up the next generation to support the society and thus the national and local governments has to take active support measures to reduce the burden of parents and families." The answer could be used to cross-check with the answer for pronatalist policy as an extension of this study.

REFERENCES

- Avramov, Dragana, Marc Callens, and Robert Cliquet. 1995. "Belgium: A Family-Friendly Climate as the Valorization of Individuality." Pp.81-101 in *Population, Family, and Welfare: A Comparative Survey of European Attitudes*, Volume I edited by Hein Moors and Rossella Palomba. Oxford, Clarendon Press.
- Blanchet, Didier. 1988. "Immigration et regulation de la structure par age d'une population." *Population* 43(2):304-308.
- Bureau of Statistics (Japan). 1996. *Results of Sample Tabulation for 1995 Census*. Tokyo: Bureau of Statistics (in Japanese).
- Collomb, Philippe. 1977. "Les non-reponses aux questions d'opinion sur la politique de population." *Population* 32(4/5):835-866.
- Girard, Alan. 1971. "Attitudes des francais a l'egard de l'immigration etrangere: enquete d'opinion." *Population* 26(5):827-875.

- Girard, Alain, Henri Bastide et Louis Roussel. 1976. "Presentation des resultats detaillés d'une enquete aupres du public sur l'acueil reserve a diverses sortes de mesures susceptibles d'agir sur la fecondite." INED (ed.), *Natalite et politique demographique*. Paris: PUF, pp.57-162.
- Espensshade, Thomas J. 1994. "Can Immigration Slow U.S. Population Aging?" *Journal of Policy Analysis and Management* 13(4):759-768.
- Espensshade, Thomas J., and Katherine Hempstead. 1996. "Contemporary American Attitudes Toward U.S. Immigration." *International Migration Review* 30(2):535-570.
- Institute of Population Problems. 1978. *Report of the Seventh National Fertility Survey in 1977*. Tokyo: Institute of Population Problems (in Japanese).
- Institute of Population Problems. 1979. *Report of Surveys on Inhabitants' Attitudes toward Long-Term Demographic Change and Environment*. Tokyo: Institute of Population Problems (in Japanese).
- Institute of Population Problems. 1986. *Demographic Survey on Changes in Family Life Course and Household Structure*. Tokyo: Institute of Population Problems.
- Institute of Population Problems. 1991. *The Public Opinion Survey on Population Issues in Japan*, Tokyo: Institute of Population Problems (in Japanese).
- Institute of Population Problems. 1992. *Population Projections for Japan, September 1992*. Tokyo: Institute of Population Problems (in Japanese).
- Institute of Population Problems. 1995. *Latest Demographic Statistics 1995*. Tokyo: Institute of Population Problems (in Japanese).
- Institute of Population Problems. 1996. *The Second Public Opinion Survey on Population in Japan*, Tokyo: Institute of Population Problems (in Japanese).
- Koesoebjono, Santo, Corrado Bonifazi and Hein Moors. 1991. "Attitudes towards Migrants and Migration Policy." Pp.55-81 in *People, Policy and Perspectives: A Comparative Survey on Population Policy Acceptance in Italy and the Netherlands* edited by Hein Moors and Rossella Palomba. Rome: Istituto Di Ricerche Sulla Popolazione.
- Kojima, Hiroshi. 1989. "The Effectiveness of Pronatalist Policies." *Jinko Mondai Kenkyu [Journal of Population Problems]* 45(2):15-34 (in Japanese).
- Kojima, Hiroshi. 1990. "Relationship between Pronatalist Policy and Immigration Policy." *Jinko Mondai Kenkyu [Journal of Population Problems]* 46(3):49-55 (in Japanese).
- Kojima, Hiroshi. 1992. "Attitudes toward Fertility Trends and Policy in Japan." *Jinkogaku Kenkyu [Journal of Population Studies]* 15:19-30.
- Kojima, Hiroshi. 1995. "Aging in Japan: Population Policy Implications", *Korea Journal of Population and Development*, Vol.24, No.2, pp.197-214.
- Kojima, Hiroshi. 1996. "Determinants of Attitudes toward Population Aging in Japan." *Jinko Mondai Kenkyu [Journal of Population Problems]* 52(2):1-16.
- Kojima, Hiroshi. 2000. "Aging in Japan: Policy Implications." Vern L. Bengtson, Kyong-Dong Kim, George C. Myers and Ki-Soo Eun (eds.), *Aging in East and West: Families, States, and the Elderly*. New York: Springer, pp.95-120.
- Lesthaeghe, R., H. Page and J. Surkyn. 1988. "Are Immigrants Substitute for

- Births?" *IPD Working Paper* 1988-3.
- Moors, Hein, and Rossella Palomba (eds.). 1995. *Population, Family, and Welfare: A Comparative Survey of European Attitudes*, Volume I. Oxford, Clarendon Press.
- National Institute for Public Opinion Survey (Japan). 1950. *Report of Public Opinion Survey on Population Issues*. Tokyo: NIPOS (in Japanese).
- Palomba, R. A., A. Menniti, and A. Mussino. 1989. "Attitudes toward Demographic Trends and Population Policy." *European Journal of Population* 4(4):297-313.
- Prime Minister's Office (Japan). 1991. *Public Opinion Survey on Foreign Worker Issues*. Tokyo: Prime Minister's Office (in Japanese).
- Steinmann, Gunter. 1991. "Immigration as a Remedy for Birth Dearth: The Case of West Germany." Pp.337-357 in *Future Demographic Trends in Europe and North America: What Can We Assume Today?*, edited by Wolfgang Lutz. London: Academic Press.

Table 1 Attitudes toward Fertility Decline and Possible Policy to Raise It (%)

Year Sex	Total (N)	Positive Attitude	Neutral Attitude	Negative Attitude toward Fertility Decline			
				Subtotal	Anti-Inter	Indifferent	Pro-Inter
<u>1990</u>							
Both	22811	9.1	43.6	40.2	1.5	4.9	30.6
Male	11280	12.0	41.3	40.2	1.8	4.5	31.1
Female	11531	6.4	46.0	40.3	1.2	5.3	30.1
<u>1995</u>							
Both	22497	5.2	46.8	42.2	1.6	4.4	34.2
Male	10971	6.5	44.9	42.7	1.9	4.1	34.8
Female	11526	3.9	48.5	41.8	1.2	4.7	33.7

Table 2 First and Second Choices of Possible Measures to Raise Fertility

Year Sex	Total (N)	Possible Measures Chosen by Interventionists					
		Housing	Financial	Care Facil	Par Leave	Anti-Abor	Others
<u>First Choice</u>							
<u>1990</u>							
	22811	8.9	16.2	2.0	2.1	0.4	0.4
Male	11280	10.1	16.6	1.6	1.4	0.4	0.5
Female	11531	7.7	15.9	2.4	2.7	0.5	0.3
<u>1995</u>							
	22497	9.2	17.1	2.9	4.0	0.4	0.4
Male	10971	10.8	17.8	2.1	3.1	0.4	0.5
Female	11526	7.7	16.4	3.7	5.0	0.5	0.3
<u>Second Choice</u>							
<u>1990</u>							
	22811	4.7	5.2	3.8	3.8	0.7	0.2
Male	11280	5.3	5.5	3.1	3.3	0.7	0.2
Female	10678	4.5	5.2	4.9	4.7	0.8	0.2
<u>1995</u>							
	22497	5.4	6.7	6.0	6.0	0.5	0.2
Male	10971	6.1	7.4	5.0	5.4	0.5	0.2
Female	11526	4.8	6.1	7.0	6.5	0.5	0.1

Table 3 Frequency Distribution and Relative Odds for Attitudes toward Fertility Dec

Indep Variable Category	Frequency (%)		1990		1995	
	1990 N=22811	1995 N=22497	Positive Neutral	Negative Neutral	Positive Neutral	Negative Neutral
Sex						
Male	49.4	46.8	1.00	1.00	1.00	1.00
Female	50.6	51.2	0.51***	0.93 #	0.54***	0.92 #
Age						
20-24	10.0	11.3	1.00	1.00	1.00	1.00
25-29	9.6	9.7	1.06	0.96	1.12	1.04
30-34	9.6	9.7	1.08	1.10	0.80	0.91
35-39	11.8	9.6	1.14	1.19 *	0.92	0.88
40-44	13.2	11.4	1.41 *	1.33***	1.04	0.96
45-49	11.6	12.8	1.92***	1.54***	1.34#	1.15#
50-54	10.0	10.9	1.83***	1.71***	1.70**	1.37***
55-59	9.9	9.3	1.83***	1.87***	1.83***	1.39***
60-64	8.5	8.6	2.15***	2.65***	1.69**	1.63***
65-69	5.9	6.6	1.55*	2.67***	1.66*	1.77***
Marital St.						
Never-Mar	18.9	22.1	1.35**	0.71***	1.37**	0.64***
Married	74.9	71.6	1.00	1.00	1.00	1.00
Widowed	3.5	3.1	1.02	0.73**	0.54*	0.91
Divorced	2.7	3.1	1.26	0.78*	1.10	0.92
Education						
Junior Hi	25.3	19.1	0.76***	0.72***	0.87	0.80***
Senior Hi	53.9	56.0	1.00	1.00	1.00	1.00
Junior Col	7.0	8.1	1.42***	1.19**	0.88	1.13*
University	13.8	16.9	1.54***	1.18**	1.06	1.24***
Emp Status						
Self-Emp	20.8	18.6	0.90	0.97	1.17	0.95
Full-Timer	46.7	47.0	1.00	1.00	1.00	1.00
Part-Time	12.2	12.9	0.94	0.89*	1.17	0.93
Non-Emp	20.2	21.4	1.00	0.92	1.24	0.89*
Occupation						
Pro/Man	16.3	18.3	1.02	1.07	1.10	1.12 #
Clerical	40.4	40.6	1.00	1.00	1.00	1.00
Sales	8.2	8.2	1.05	1.07	0.80	0.92
Service	6.8	9.2	1.16	0.90	0.91	0.85*
Manual	15.9	15.3	1.02	0.86*	0.89	0.84**
Agri/Fo/F	3.6	2.6	1.12	1.06	1.07	1.10
Others	8.8	5.9	1.09	0.89	0.99	0.82*
Region						
Hokkaido	3.6	3.6	0.79	0.82*	1.12	0.91
Tohoku	6.2	6.9	0.88	1.21*	0.86	1.05
Kanto	38.3	38.7	1.02	1.12*	1.16	0.95
Chubu	17.7	17.6	1.00	1.00	1.00	1.00
Kinki	13.2	13.6	1.18 #	1.01	1.51***	0.94
Chushi	9.6	7.6	0.77*	0.99	1.16	0.96
Kyushu	11.5	12.0	0.97	1.05	0.93	1.04

Note: # $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 Determinants of Attitudes toward Fertility Decline and Possible Measures to Raise It

Indep Variable Category	1990				1995			
	Positive A Neutral At	Non-inter Neutral At	Intervent Neutral At	Neutral Int Neutral At	Positive A Neutral At	Non-inter Neutral At	Intervent Neutral At	Neutral Int Neutral At
Sex								
Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	0.51***	0.50***	0.92#	1.03	0.54***	0.66**	0.92#	0.99
Age								
20-24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25-29	1.06	0.66	1.05	0.82	1.12	1.28	1.05	0.83
30-34	1.09	0.85	1.18#	0.84	0.80	0.90	0.94	0.66*
35-39	1.14	0.87	1.26*	0.96	0.92	0.79	0.94	0.60**
40-44	1.41*	0.66	1.47***	0.83	1.04	0.81	0.98	0.77
45-49	1.91***	0.79	1.68***	0.87	1.33#	0.65	1.16#	0.99
50-54	1.83***	1.00	1.84***	0.94	1.70**	1.07	1.40***	0.94
55-59	1.83***	0.92	2.02***	1.01	1.82**	0.89	1.41***	0.86
60-64	2.14***	1.40	2.95***	1.08	1.69**	0.94	1.68***	0.86
65-69	1.55*	1.07	3.04***	1.25	1.65*	0.90	1.83***	0.89
Marital St.								
Never-Mar	1.35***	1.02	0.65***	0.82	1.37**	0.93	0.57***	0.97
Married	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Widowed	1.01	0.55	0.65***	1.04	0.54*	0.95	0.84#	1.09
Divorced	1.26	1.00	0.76*	0.79	1.10	0.65	0.90	1.06
Education								
Junior Hi	0.76***	1.06	0.68***	0.92	0.87	0.66#	0.79***	0.96
Senior Hi	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Junior Col	1.42**	2.12***	1.12#	1.41**	0.88	1.23	1.14*	1.07
University	1.54***	1.88***	1.14*	1.10	1.06	1.97***	1.23***	1.10
Emp Statu								
Self-Emp	0.90	1.09	0.92	1.14	1.18	0.89	0.96	0.79#
Full-Timer	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Part-Time	0.94	1.07	0.86*	0.96	1.17	0.97	0.94	0.87
Non-Emp	1.01	1.10	0.86*	1.23	1.24#	1.57#	0.86*	0.93
Occupatio								
Pro/Man	1.02	1.30	1.04	1.29#	1.10	1.47#	1.10	1.04
Clerical	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sales	1.05	0.81	1.09	0.92	0.80	1.55	0.93	0.67*
Service	1.15	1.00	0.88	1.00	0.91	1.03	0.83*	0.98
Manual	1.02	0.85	0.83**	1.02	0.89	1.45	0.81**	0.90
Agri/Fo/F	1.13	0.39#	1.06	1.36	1.06	0.66	1.04	1.57#
Others	1.09	0.85	0.87	0.99	0.99	1.34	0.73***	1.04
Region								
Hokkaido	0.79	0.71	0.86	0.60*	1.12	0.98	0.89	1.15
Tohoku	0.89	1.37	1.25**	0.95	0.86	0.79	1.06	0.96
Kanto	1.02	1.14	1.17**	0.85	1.16	1.40#	0.92#	1.10
Chubu	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Kinki	1.18#	1.22	1.01	0.98	1.51***	1.57*	0.91	1.02
Chushi	0.77*	0.80	1.00	1.09	1.16	1.20	0.96	0.96
Kyushu	0.96	1.12	1.04	1.00	0.94	1.21	1.00	1.28#