
調 査 研 究

Determinants of Attitudes toward Population Aging in Japan

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Introduction

1. Trends in Population Aging

Japan's population, which was 84.1 million in 1950, has reached 125.6 million in 1995, making Japan the seventh 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 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. 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 15.9 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 14.8 percent (Institute of Population Problems 1995, Bureau of Statistics 1996).

The aged population is projected to increase further by the latest series of official population projections for Japan, which was published by the Institute of Population Problems (1992), Ministry of Health and Welfare in September 1992. According to the medium-variant, the total population will increase continuously from 123.6 million in 1990 to 130.4 million in 2011 and decrease continuously thereafter to 125.8 million in 2025 and 95.7 million in 2090. While both the child population and the working-age population will gradually decrease, the aged population will continue to increase from 14.9 million in 1990 to 32.7 million in 2020.

This is a slightly modified version of the paper presented at the WAPOR (World Association for Public Opinion Research) Regional Conference in Tokyo, November 8-9, 1996, ARCADIA ICHIGAYA, Tokyo, jointly hosted by the JAPOR (Japan Association of Public Opinion Research). This paper partly draws on Kojima (1992, 1995). I would like to thank Dr. Sigeki NISHIHARA, the Conference Chairman, for giving me an opportunity to present this paper and Dr. Makoto ATOH for valuable comments. I would like to dedicate this paper to Alain Girard, pioneer in demographic opinion survey, who has recently passed away.

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 12.1 percent in 1990, through 17.0 percent in 2000, to 25.8 percent in 2025, which will probably make Japan the most aged country in the world. It is projected to rise further to the highest level of 28.4 percent in the mid-2040s before starting to decrease. Among the elderly, the proportion of "older old" population (aged 75 and over) will dramatically increase from 4.8 percent in 1990 to 14.5 percent in 2025. It is projected to reach the highest level of 16.4 percent in the mid-2050s. Even higher level of aging is expected for Japan by the 1994 UN population projections (United Nations 1994).

2. 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 aging. 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 the 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.

On the other hand, there was a large influx of foreign workers in the late 1980s due to the labor shortage during the period of "bubble economy" and the appreciation of yen. Some opinion leaders have suggested that the admittance of foreign workers is inevitable or desirable in the long run to cope with the aging of population and the shortage of young workers associated with the continued low fertility since the mid-1970s. After the collapse of the "bubble economy" at the beginning of the 1990s, however, many opinion leaders stopped talking about the admittance of foreign workers because the underemployment and unemployment of Japanese nationals have come to be a more urgent concern.

The Institute of Population Problems (1991) 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". It has conducted the second one in June 1995 (Institute of Population Problems 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 the aging of population and the possible measures to slow it down.

Both surveys asked the respondents to choose one answer among "very good", "good", "hard to say", "bad", and "very bad", to the statement, "In Japan the proportion of the elderly keeps increasing each year while that of the youth keeps decreasing. In thirty years one fourth of the Japanese is expected to be aged 65 and over. What do you think of this?". 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 slow down the aging of population?" among the following choices: "No measures at all", "Facilitation of the entry of young foreigners as immigrants or workers", "Pronatalist measures", "Both the admittance of young immigrants or workers and pronatalist measures", and "Others".

This paper presents the results of multivariate (multinomial logit) analysis of these two data sets to explore the changing determinants of attitudes toward population aging and possible acceptance of alternative population policies to slow it down. This is an extension of the present author's past studies on public attitudes toward population and on the relationship between population policies (Kojima 1989, 1990, 1992 and 1995).

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 (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. There has 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.

Prime Minister's Office of Japan (1991), in its 1990 national opinion survey on foreign worker issues, asked a question on the policy to permit the entry of unskilled workers and found that being males, younger age, being non-agricultural self-employed, managerial and professional occupation are associated with positive attitude toward such a policy. Girard (1971) examined the differentials in attitudes toward the number of immigrants and found that middle and old age, unskilled work and low education are associated with the feeling of excessiveness. Koesoebjono et al. (1991) found no gender differentials in support of restrictive immigration policy in Italy and the Netherlands, but a positive correlation with age in Italy. They also found that the lowly educated and housewives tend to support the policy in the two countries while students tend not to. On the other hand, Espenshade and Hempstead (1996) found that younger and older ages, higher education and urban residence is correlated with higher desired level of immigration.

Drawing on the above-mentioned results of previous research and partly on the hypotheses of Espenshade and Hempstead (1996), the following five hypotheses can be proposed: the "felt threat", "felt needs", "media influence", "traditionalism" and "anti-government" hypotheses. Among them, the "felt threat", "felt needs", "traditionalism", and "anti-government" hypotheses are respectively relevant to the "labor market competition", "generalized cost-benefit", "isolationism" and "social and political alienation" hypotheses proposed by them.

The "felt threat" hypothesis incorporates an element of the "labor market competition"

hypothesis proposed by Espenshade and Hempstead (1996 : 541-542) which suggests that those who are threatened by the possibility that the immigrants take jobs away from them are less likely to favor a tolerant immigration policy. The "felt threat" hypothesis also assumes that those living in the area facing neighboring countries are less likely to favor a tolerant immigration policy. It is also expanded to include the assumption that those who are threatened by the possible personal and social burden due to the aging of their parents and parents-in-law as well as the increasing older population are less likely to have positive attitudes toward population aging.

On the other hand, the "felt needs" hypothesis may not be directly relevant to the attitudes toward aging but those toward population policy. 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. This can be extended to their calculation for population 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 population policies 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. It also assumes that they are less likely to favor immigration policy, which corresponds to some extent to the "isolationism" hypothesis proposed by Espenshade and Hempstead (1996 : 543) , suggesting that those with an protectionist mentality are more likely to oppose a tolerant immigration 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), suggesting that those alienated from the "mainstream" are least likely to favor a tolerant immigration policy.

The following concrete hypotheses regarding the attitudes toward aging, pronatalist and immigration policies derive from the five hypotheses described above. Being female, young, and married are hypothesized to be associated with negative attitudes toward aging because of their felt threat, 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 aging.

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 pronatalist policy

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 pronatalist policy and negative attitudes toward immigration policy because they tend to be more traditional. Those in self-employment and profession/management are hypothesized to be pro-immigration because of felt needs to cope with the labor shortage in their companies. Females, younger persons, the least educated, manual workers, and inhabitants of Hokkaido and Kyushu Areas (facing Russia or China) are expected to have anti-immigration attitudes because of their felt threat.

The change in the attitude toward aging and possible measures to slow it down 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 and high unemployment. 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

1. 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 two surveys asked more directly, than its 1985 household survey, the opinions towards population aging and population policy measures to slow it down. They asked all the respondents whether aging in the near future was "very good", "good", "hard to say", "bad", or "very bad" and asked those who had a negative opinion about it the possible measures to slow it down. 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 and excluding "DK" (Don't Know) and "UK" (Unknown) from both. The details of these two surveys are found in their reports (Institute of Population Problems 1991 and 1996).

In 1990, 5.0 percent of respondents have positive attitudes toward aging while 42.9 percent have neutral attitude (choosing "hard to say"). Females are a little more likely to have these attitudes than males. Among those who have negative attitudes toward aging (52.1 percent of respondents who are asked about the possible measures to slow it down), 4.5 percent are in favor of immigration policy, 33.0 percent pronatalist policy, 9.3 percent both and 5.3 percent no intervention. Females are less likely to favor immigration policy than males and a little more likely to favor pronatalist policy.

In 1995, 3.4 percent of respondents have positive attitudes toward aging while 38.5 percent have

Table 1 Attitudes toward the Aging of Population and Choice of Possible Measures to Slow It Down (%) : 1990 and 1995

Year Sex	Total (N)	Positive Attitude	Neutral Attitude	Negative Attitude toward Aging			
				Immigra.	Pronatalist	Both	None
<u>1990</u>							
Both	19,142	5.0	42.9	4.5	33.0	9.3	5.3
Male	9,648	5.7	41.4	5.8	31.2	10.5	5.4
Female	9,494	4.3	44.5	3.1	34.9	8.1	5.3
<u>1995</u>							
Both	19,797	3.4	38.5	2.0	44.3	6.7	5.1
Male	9,704	3.7	37.5	2.4	43.3	7.7	5.4
Female	10,093	3.0	39.5	1.6	45.3	5.8	4.8

Note : This tabulation is based on the combination of answers to two questions.

Source : Institute of Population Problems, Public Opinion Surveys on Population Issues (1990 and 1995).

neutral attitude. There are declines in both attitudes from 1990 possibly because of the "1.57 shock". In contrast to the results of the 1990 survey, females are a little less likely to have these attitudes than males.

Among those who have negative attitudes toward aging (58.1 percent of respondents who are asked about the possible measures to slow it down), 2.0 percent are in favor of immigration policy, 44.3 percent pronatalist policy, 6.7 percent both and 5.1 percent no intervention. As in the results of the 1990 survey, females are less likely to favor immigration policy than males and a little more likely to favor pronatalist policy. While the proportion of non-interventionists has remained relatively stable, the percentages of those who favor immigration policy as well as those who favor both immigration and pronatalist policies have been reduced to a half, while the percentage of those who favor pronatalist policy has increased by one third. This can be also due to the "1.57 shock" as well as the economic recession decreasing the labor demand.

2. Method

In order to clarify the change in differentials of opinion towards aging and possible population policy measures at the same time, multinomial logit analysis (the CATMOD procedure in the SAS package) is conducted on this five-category dependent variable. It 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 2 shows the frequency distributions for independent variables used in the model for the comparison 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.

Table 2 Frequency Distribution and Relative Odds for Attitudes toward Aging

Independent Variables	Frequency (%)		Attitudes : 1990		Attitudes : 1995	
	1990 (N) 22,811	1995 (N) 22,497	Positive vs Neutral	Negative vs Neutral	Positive vs Neutral	Positive vs Neutral
<u>Sex</u>						
Male \$	49.4	48.8	1.00	1.00	1.00	1.00
Female	50.6	51.2	0.63***	1.02	0.73	1.00
<u>Age</u>						
20-24 \$	10.0	11.3	1.00	1.00	1.00	1.00
25-29	9.6	9.7	1.30	1.05	0.83	0.92
30-34	9.6	9.7	1.08	0.89	0.68	0.75***
35-39	11.8	9.6	1.60*	0.84*	0.82	0.66***
40-44	13.2	11.4	1.55#	0.84*	0.68	0.96***
45-49	11.6	12.8	2.10**	0.90	0.93	0.78**
50-54	10.0	10.9	2.07**	0.99	0.96	0.90
55-59	9.9	9.3	3.05***	1.03	1.21	0.87
60-64	8.5	8.6	3.39***	1.15	1.04	0.94
65-69	5.9	6.6	3.52***	1.21#	1.29	0.92
<u>Marital Status</u>						
Never-Married	18.9	22.1	1.18	0.76***	1.05	0.65***
Married \$	74.9	71.6	1.00	1.00	1.00	1.00
Widowed	3.5	3.1	0.92	1.09	2.23***	0.99
Divorced	2.7	3.1	1.60*	0.92	1.15	0.92
<u>Education</u>						
Junior High	25.3	19.1	0.99	0.79***	1.04	0.88**
Senior High \$	53.9	56.0	1.00	1.00	1.00	1.00
Junior College	7.0	8.1	0.72	1.13#	0.97	1.15*
University	13.8	16.9	0.88	1.15**	0.97	1.23***
<u>Employment St.</u>						
Self-Employed	20.8	18.6	1.09	1.00	1.45**	0.98
Full-Timer \$	46.7	47.0	1.00	1.00	1.00	1.00
Part-Timer	12.2	12.9	1.17	0.92	1.13	0.94
Non-Employed	20.2	21.4	1.18	0.92	1.20	0.85**
<u>Occupation</u>						
Profes/Manager	16.3	18.3	1.38#	1.12#	1.21	1.02
Clerical \$	40.4	40.6	1.00	1.00	1.00	1.00
Sales	8.2	8.2	1.28	1.06	1.25	0.97
Service	6.8	9.2	1.12	1.01	1.05	0.84*
Manual	15.9	15.3	1.03	0.86*	1.21	0.88#
Agri/Fore/Fish	3.6	2.6	0.99	0.98	0.04	1.15
Others	8.8	5.9	1.31	0.87#	1.06	0.82*
<u>Region</u>						
Hokkaido	3.6	3.6	0.79	0.84#	1.05	1.00
Tohoku	6.2	6.9	1.10	0.92	1.05	0.83**
Kanto	38.3	38.7	0.86	1.10#	1.29#	0.95
Chubu \$	17.7	17.6	1.00	1.00	1.00	1.00
Kinki	13.2	13.6	0.84	0.93	1.53*	0.87*
Chushikoku	9.6	7.6	0.75#	1.02	1.21	1.00
Kyushu	11.5	12.0	1.27#	0.86*	0.96	0.91

Note : # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$, \$ reference categories.

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

1. Attitudes toward Aging

The last two panels of Table 2 show the results of multinomial logit analysis for determinants of attitudes toward aging in 1990 and 1995 in the form of relative odds. According to the second panel for 1990, males, older persons, the divorced, those in profession/management and inhabitants of Kyushu Areas are more likely to have positive attitudes toward aging relative to neutral attitude, while inhabitants of Chushikoku Areas are less likely. On the other hand, persons aged 65-69, graduates of two- and four-year colleges, those in profession/management, inhabitants of Kanto Area (including Tokyo Megalopolis) are more likely to have negative attitudes toward aging relative to neutral attitude, while persons aged 35-44, the never-married, the least educated, manual workers, and inhabitants of Hokkaido and Kyushu Areas are less likely. Persons aged 65-69 and those in profession/management are more likely to have both positive and negative attitudes relative to neutral attitude, which means that they are less likely to have neutral attitude. These results seem to support both the "felt threat" and "media influence" hypotheses.

According to the third panel for 1995, the widowed, the self-employed, and inhabitants of Kanto and Kinki (including Kyoto-Osaka-Kobe Megalopolis) Areas are more likely to have positive attitudes relative to neutral attitude. On the other hand, graduates of two- and four-year colleges are more likely to have negative attitudes toward aging relative to neutral attitude while persons aged 30-49, the never-married, the least educated, non-employed (including home-makers and students), service workers, manual workers and those in other occupations, and inhabitants of Tohoku and Kinki Areas are less likely.

In comparison with the results for 1990, it is apparent that the effects of sex and age on positive attitudes lose their significance in 1995, while the positive effects of middle ages on negative attitudes are retained. This may be because males and older persons previously less exposed to the media coverage of low fertility and aging have come to be more exposed while middle-aged persons are too busy to have enough access to mass media. While the negative effect of the never-married on negative attitudes remains significant, the positive effect of the divorced on positive attitudes is replaced by that of the widowed, supporting the "felt threat" hypothesis. The positive effects of educational level on negative attitudes remains the same, supporting the "media influence" hypothesis. While the effects of employment status are not significant in 1990, they are significant in 1995. In sum, both the "felt threat" and "media influence" hypotheses seem to be supported.

2. Attitudes toward Policy

Table 3 shows the results for determinants of choice of possible measures to slow down aging in 1990 and 1995 in the form of relative odds among all the respondents including those who have positive and neutral attitudes. According to the left-hand side panel for 1990, females are less

Table 3 Relative Odds for Choice of Possible Measures to Slow Down Aging

Independent Variables	1990				1995			
	Immigra.	Pronata.	Both	None	Immigra.	Pronata.	Both	None
	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu	vs Pos/Neu
<u>Sex</u>								
Male \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	0.56***	1.15**	0.84*	1.07	0.75*	1.04	0.79**	1.02
<u>Age</u>								
20-24 \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25-29	1.03	1.10	0.98	1.03	0.64#	0.96	0.79#	0.89
30-34	0.86	0.96	0.80	0.87	0.55*	0.77**	0.72*	0.63**
35-39	0.83	0.90	0.76#	0.61**	1.01	0.65***	0.65**	0.96*
40-44	0.70#	0.92	0.79	0.55***	1.03	0.67***	0.65**	0.63**
45-49	0.89	1.02	0.71*	0.46***	1.10	0.76**	0.64**	0.70*
50-54	0.87	1.09	0.85	0.72#	1.11	0.91	0.58**	0.87
55-59	0.73	1.11	0.90	0.51**	1.01	0.88	0.57**	0.72
60-64	0.74	1.31*	1.04	0.53**	0.93	0.97	0.68*	0.76
65-69	0.65	1.37*	1.01	0.47**	1.15	0.96	0.63*	0.45**
<u>Marital Status</u>								
Never-Married	1.02	0.65***	0.73**	1.13	1.18	0.56***	0.73**	1.01
Married \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Widowed	1.15	1.10	0.74	1.20	0.78	0.89	0.99	0.69
Divorced	0.73	0.80#	1.18	1.13	1.68#	0.83#	1.02	1.03
<u>Education</u>								
Junior High	0.79*	0.83***	0.65***	0.69**	0.75#	0.91#	0.80*	0.85
Senior High \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Junior College	1.06	1.08	1.29*	1.25#	1.17	1.16*	1.06	1.24#
University	1.34**	1.01	1.18	1.59***	1.23	1.15**	1.20*	1.71***
<u>Employment St.</u>								
Self-Employed	1.27*	0.91	1.03	1.25#	1.36#	0.92	0.94	0.97
Full-Timer \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Part-Timer	0.95	0.87*	0.88	0.88	0.95	0.92	0.98	0.93
Non-Employed	1.08	0.93	0.87	0.92	0.89	0.80***	0.91	0.82
<u>Occupation</u>								
Profes/Manager	1.14	1.08	1.17	1.02	0.93	0.95	1.12	1.07
Clerical \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sales	0.83	1.13	1.15	0.78	0.68	0.96	1.11	0.81
Service	0.93	1.10	0.91	0.98	0.52*	0.85*	0.77#	0.83
Manual	0.72*	0.95	0.83	0.77#	0.98	0.82**	1.02	0.93
Agri/Fore/Fish	0.28**	1.32*	0.62*	0.74	0.41	1.11	1.65*	0.97
Others	0.68#	0.92	0.78#	0.54**	0.68	0.79**	0.84	0.90
<u>Region</u>								
Hokkaido	0.48**	0.81#	0.95	0.98	0.86	0.91	1.23	0.90
Tohoku	0.77	0.90	0.87	1.28	0.70	0.83*	0.74#	0.63*
Kanto	0.94	1.09#	1.28**	1.19	1.16	0.90*	1.07	0.98
Chubu \$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Kinki	0.63**	0.89	0.83#	1.48**	0.71	0.81***	0.96	0.98
Chushikoku	0.75#	1.11	0.98	1.05	0.95	1.01	0.88	0.78
Kyushu	0.45***	0.96	0.67**	0.86	0.93	0.91	0.78#	1.03

Note : # p<.10, * p<.05, ** p<.01, *** p<.001, \$ reference categories.

likely to favor immigration policy and both immigration and pronatalist policies relative to those who have positive or neutral attitudes toward aging, while they are more likely to favor pronatalist policy. This is compatible with both the “felt needs” and “felt threat” hypotheses. Among various age groups, middle ages are associated with unfavorable attitudes toward immigration policy (including immigration/pronatalist policies), while older ages with favorable attitudes toward pronatalist policy and younger ages with favorable attitudes toward no intervention. This can lend support to the “traditionalism” and “anti-government” hypotheses. The never-married and the divorced are less likely to favor pronatalist policy and the former are also less likely to favor immigration/pronatalist policies, supporting “felt needs” hypothesis.

Low education is associated with negative effects on all the policy choices, which means that it is associated with positive or neutral attitudes toward aging. High education is associated with favorable attitudes toward immigration policy and no intervention, which is compatible with both the “felt threat” and “anti-government” hypotheses. The self-employed persons tend to be also in favor of both immigration policy and non-intervention, partly supporting “felt needs” hypothesis. Part-timers tend to be against pronatalist policy. Manual workers and farmers tend to have negative attitudes towards immigration policy, while the latter has positive attitudes toward pronatalist policy. This is compatible with “felt threat” and “traditionalism” hypotheses. Those in the “other occupations” are more likely to have positive or neutral attitudes toward aging.

Inhabitants of Hokkaido Area are less likely to favor immigration or pronatalist policies while those in Kanto Area are more likely to favor pronatalist policy and immigration/pronatalist policies, which is partly compatible with both the “felt threat” and “felt needs” hypotheses. Inhabitants of Kinki Area are more likely to favor no intervention (less likely to favor immigration or pronatalist policies) while those in Chushikoku and Kyushu Areas are less likely to favor immigration policy, which is partly compatible with both the “anti-government” and “felt threat” hypotheses.

According to the right-hand side panel for 1995, the effects of sex are similar with 1990 except that females are no more likely to favor pronatalist policy compared with males. This is possibly because males have been affected by mass media regarding the needs for pronatalist measures due to the “1.57 shock”.

The effects of age are somewhat different from 1990. Younger adults aged 25-34 are less likely to favor immigration policy, which is not found in 1990, supporting the “felt threat” hypothesis. This may be because some of them are exposed to the possible competition with foreign workers in the labor market during the economic recession. The youngest age group has relatively favorable attitudes toward immigration/pronatalist policies possibly because many of them are students and more informed through mass media as well. Those aged 30-49 are less likely to favor pronatalist policy, which is not found in 1990. This may be because those in the child-bearing ages have come to distrust government policies through their experience.

The effects of marital status are similar with 1990. The exception is that the divorced persons are more likely to favor immigration policy, possibly because they are thinking of the possibility of remarriage with a foreigner now that there are much more intermarriage than five years before.

before.

The effects of education are also similar with 1990 except that those with high education are more likely to favor pronatalist policy possibly because of “media influence” regarding the “1.57 shock”. Among employment status groups, the self-employed persons are still more likely to favor immigration policy probably because some of them have “felt needs” for employing foreign workers, but they are no more non-interventionist. The non-employed persons replace the part-timers in negative attitudes toward pronatalist policy, possibly because some of them do not have any “felt needs” for pronatalist policy which tends to help female full-time workers these days.

The effects of occupational groups are somewhat different from 1990. Service workers come to be less likely to favor immigration policy while manual workers, those in agriculture and “others” lose this tendency. Service and manual workers now have unfavorable attitudes toward pronatalist policy, while those in agriculture lose this tendency. The attitude of those in agriculture toward immigration/pronatalist policies is reversed from positive to negative possibly because they are facing the aging and feminization of work force as well as the increase in intermarriage among farm heirs due to their marriage squeeze. There are no more significant differences in the attitudes toward no intervention.

The regional differences in the attitudes toward immigration policy are attenuated possibly because of the dispersal of foreign workers during the recession. The effects of living in Kanto Area on the choice of pronatalist policy is reversed from positive to negative and the negative effect of living in Hokkaido Area disappears, while the significant and negative effects of living in Tohoku and Kinki Areas newly appear. The negative effect of living in Tohoku Area on pronatalist policy, together with its newly significant negative effects on immigration/pronatalist policies and no intervention, is probably the reflection of its negative effects on negative attitudes toward aging found in Table 2. Living in Kanto Area also loses its significant and positive effect on immigration/pronatalist policies, while living in Kinki Area loses its negative effect. Living in Kinki Area also loses its positive effect on no intervention, possibly because their inhabitants’ anti-government feelings have been weakened after the 1995 big earthquake in the area.

There seems to be possible acceptance of alternative population policies to slow down aging among Japanese with certain demographic, socioeconomic and regional characteristics, but the potential acceptance seems to be affected by various changes at the macro-societal level as implied by some of the five hypotheses mentioned above.

Summary and Discussion

In sum, most of the results for determinants of attitudes toward population aging and choice of possible measures to slow it down largely support, at least, one of the following five hypotheses: “felt needs”, “felt threat”, “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 aging. 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.

Still, it may be better to compare the results of the two models as an extension of this study. In addition, the use of latent variable model can be another future direction for analyzing simultaneously the determinants of attitudes toward population aging and the determinants of choice of possible measures to slow it down.

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Abstract

Determinants of Attitudes toward Population Aging in Japan

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This study presents the results of multinomial logit analysis of data from the National Opinion Surveys on Population Issues conducted by the Institute of Population Problems in June 1990 and 1995 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 in this study: "felt needs", "felt threat", "media influence", "traditionalism" and "anti-government".

The cross-tabular analysis of 1990 survey data shows that 5.0% of respondents have positive attitudes toward aging while 42.9% have neutral attitude. In 1995, however, 3.4% of respondents have positive attitudes toward aging while 38.5% have neutral attitude. These declines may be due to the "1.57 shock" associated with the media coverage of the record-low total fertility rate in the latter half of 1990, which is consistent with the "media influence" hypothesis.

Among those who have negative attitudes toward aging in 1990 (52.1% of respondents who are asked about the possible measures to slow it down), 4.5% are in favor of immigration policy, 33.0% pronatalist policy, 9.3% both and 5.3% no intervention. In 1995 the proportion of non-interventionists has remained relatively stable, but the percentages of those who favor immigration policy and those who favor both immigration and pronatalist policies have been reduced to a half, while the percentage of those who favor pronatalist policy has increased by one third. This can be due to the "1.57 shock" and the economic recession decreasing the labor demand, which is consistent with the "media influence" and "felt threat" hypotheses.

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.

日本における人口高齢化に対する態度の規定要因

小 島 宏

本研究は将来の日本について推計されている人口高齢化に対する態度とそれを緩和するための人口政策の受容可能性を検討するため、人口問題研究所により1990年と1995年の6月に実施された全国調査「人口問題意識に関する調査」のデータに多項ロジット分析を適用した結果を示す。本研究では「必要感」、「脅威感」、「マスコミ影響」、「伝統主義」、「反政府」の五つの仮説が検証される。

1990年調査結果のクロス表分析によれば、回答者の5.0%が高齢化に対して肯定的態度をもち、42.9%が中立的態度をもっている。しかし、1995年には回答者の3.4%が高齢化に対して肯定的態度をもち、38.5%が中立的態度をもっている。これらの割合の減少が「1.57ショック」（1990年後半における記録的に低い合計特殊出生率の報道に伴う世論の盛り上がり）によるものだとすれば、「マスコミ影響」仮説が支持される。

1990年において高齢化に対して否定的態度をもつ者（それを緩和するための対策について尋ねられた52.1%の回答者）のうちで4.5%が移入政策を支持し、33.0%が出生促進政策、9.3%が両者、5.3%が非介入政策を支持している。1995年には非介入政策支持者の割合は比較的安定しているが、移入政策支持者の割合と移入政策と出生促進政策の両者の支持者の割合は半減し、出生促進政策支持者の割合は三分の一増加した。これは「1.57ショック」と労働需要減少を伴う不況によるものである可能性があり、「マスコミ影響」仮説と「脅威感」仮説と整合的である。

1990年調査結果に基づく、高齢化に対する態度を表す3区分の従属変数の規定要因に関する多項ロジット分析によれば、35～69歳の者、離別者、専門管理職者、九州居住者は高齢化に対して（中立的態度との比較で）肯定的態度をもつ可能性が高く、女子、中四国地方居住者はその可能性が低い。また、65～69歳の者、短大・大卒者、専門管理職者、関東地方居住者は高齢化に対して（中立的態度との比較で）否定的態度をもつ可能性が高く、35～44歳の者、未婚者、中卒者、現業労働・「その他」職業の者、北海道・九州居住者はその可能性が低い。これらの結果と1990年から1995年にかけての変化は「脅威感」仮説と「マスコミ影響」仮説を支持しているようである。

他方、1990年調査結果に基づく、高齢化に対する態度と対策の選択の両者を表す5区分の従属変数の規定要因に関する多項ロジット分析の結果は、少なくとも部分的に五つの仮説と整合的である。しかし、一部の有意な効果やその変化はいずれの仮説によっても説明されないまま残っている。