

How People Rate Their Standard of Living in Japan

What the Data Tell Us

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Abstract

This article investigates how people rate their standard of living in Japan. While there have been disputes as to whether or not Japan is moving toward a hierarchically-oriented society, no empirical evidence of a declining middle class perception is found. Relationships between people's standard-of-living perceptions and income, age, as well as type of dwelling are also analyzed. The results indicate a possible relation between home or residential land ownership and people's perceptions. The high cost of housing in Japan, as well as people's general mistrust of the social welfare system may have contributed to this result.

1 . Introduction

It has long been said that Japan is a country where 90% of its people consider themselves to be in the middle class. Recently, however, there have been disputes as to whether this middle class perception is still prevalent, and some researchers argue that Japan is now moving toward a more hierarchically-oriented society, whereby the "upper, white-collar" class is becoming increasingly inaccessible to a majority of people. What do the data tell us about this subject? Do they support the claim of a dwindling middle class perception amongst people in Japan? And what factors, if any, have impacts on people's perceptions? These are the questions addressed in this paper.

The first step of the analysis is to define precisely the concept of a class, or as some sociologists prefer, of social strata, so that we are on common ground when discussing, for example,

middle class. But this is, by no means, an easy task. Although there is a consensus that, in general, social strata represent groups of people with similar economic and social backgrounds, the actual grouping and evaluation of these groups can prove to be a formidable exercise, mainly due to the myriad social aspects. There is little room for argument when classifying people according to their economic backgrounds, the key factor being income level and/or the amount of financial assets they possess. When assessing social backgrounds, however, things are not so straightforward. Although many would agree that the most important factor shaping a social background is a person's occupation, we cannot discount other factors such as family background, educational background, gender, residential district, etc. Society is a multi-faceted concept, and to combine its various aspects to form strata and to further arrange them in some order, entails, at least to some extent, resorting to one's own value system. In other words, we cannot escape subjectivity when defining a social class.

In order to circumvent this difficulty, this article will focus solely on economic aspects. It is my understanding that nowadays, people in Japan are far more aware of their economic situation than their social status per se. Furthermore, the data, most often cited as the basis for why a middle class perception is so prevalent in Japan, are results of how people rate their standard of living, not of how they rate themselves socially.

This paper is organized as follows: section 2 gives a description of the data; section 3 discusses sampling and non-sampling errors as they pertain to survey data; section 4 describes empirical findings from time series data; an empirical analysis on the latest survey data is contained in section 5, and finally, concluding remarks are given in section 6.

2 . Data

The primary source of data is from a continuing survey on people's lifestyles in Japan, as conducted by the Cabinet Office since 1958. The survey has been done annually except for the years 1997-2001, when it was done bi-annually, and for the years 1974-1976 when it was done twice a year. The question of particular interest for this paper is the one where people's perception of their standard of living is asked. More precisely, survey participants were asked to rate their standard of living in comparison to the "general public", and to determine their living standard with a selection from the following five categories: low, lower-middle, middle, upper-middle, and high. Although the survey did take place for the years 1962 and 1963, the

above question on people's standard-of-living was not asked and therefore the data on these years are missing. The data are available from the website of the Cabinet Office, <http://www.cao.go.jp>.

Secondary sources of data include family income and expenditure survey done by the Statistics Bureau, the Cabinet Office's system of national accounts, and the Japan Real Estate Institute.

3 . Sampling and Non-Sampling Errors

Before examining the data in detail, it must first be noted that most survey data, such as this one, invariably contain errors. Unless the study is a census, every survey contains possible sampling errors, by which the sample chosen may not be an accurate representation of the entire population. For example, the percentage of people with an annual income over 10,000,000 yen may be higher in the sample than in the entire population, and vice versa. This type of error, however, is not the main concern here, since the magnitude of a sampling error can be assessed statistically, and consequently, its level can be controlled through the use of an appropriate sample size. In other words, sampling errors can be suppressed to a desirable level by choosing enough number of people to take part in the survey. The main difficulty, rather, is in the non-sampling errors.

What, then, is implied by a non-sampling error? In a survey study, not all people, selected as a sample of the population, choose to cooperate in responding to the survey. According to the Cabinet Office, the latest survey on people's lifestyles in Japan was conducted with 10,000 people chosen randomly from the population, out of which data collectors were able to interview only 7,030 persons, approximately a 70% recovery rate. Of the 2,970 persons that did not participate in the study, 1,288 refused to take part in the interview on their own accord. Other reasons for not being included in the study were: temporary and long-term absence, change of address, unknown address, illness, etc.

People who consciously refuse to take part in the study taint what would otherwise be a representative cross-sampling of the general population, and this is problematic. These non-respondents tend to share certain common traits, which may cause the data to be biased. Typically, it is known that people with high income, as well as low income, have a higher probability of refusing to participate. This suggests that the data will likely be biased towards

the middle rather than being truly representative of all income groups. Unfortunately, there is no way to evaluate the extent of this bias.

To obtain a further understanding of the problem of non-sampling errors, recovery rates of the latest survey conducted in June of 2003, sorted by gender and age, are presented in Table 1. Clearly, there are gender and age differences in recovery rates that cannot be ignored. Looking at age groups, it is at once noticeable that 80% of men, age 70 or older, participated in the study, whereas only 50% of men in their 20s participated, with a similar but less extreme tendency to do so among women. In general, recovery rates rise along with age, so that the viewpoints of older generations may be emphasized to a disproportionate level in the overall results. The recovery rate of women was 74% in all, while only 66.5% of men chosen agreed to contribute. As a result, the ratio of men in the study was 46%, whereas the ratio of men in the entire population studied was approximately 49%.

Table 2 shows how women and men rated their standard of living in the latest survey. As explained before, participants were asked to choose their standard of living from five classes: low, lower-middle, middle, upper-middle, and high. We see from this table that women tend to avoid placing themselves in extreme classes, both the low and the high. Using a χ^2 test, the hypothesis that gender and perception of living standard are independent is rejected at a 1%

Table 1 Recovery Rates of the Latest Survey on People's Lifestyles in Japan

| male | | | | female | | | |
|------------|-------------|-------------|--------------------|------------|-------------|-------------|--------------------|
| age | sample size | # recovered | recovery rate(%) | age | sample size | # recovered | recovery rate(%) |
| 20-29 | 654 | 327 | 50.0 | 20-29 | 718 | 399 | 55.6 |
| 30-39 | 820 | 477 | 58.2 | 30-39 | 929 | 640 | 68.9 |
| 40-49 | 832 | 539 | 64.8 | 40-49 | 870 | 681 | 78.3 |
| 50-59 | 1032 | 687 | 66.6 | 50-59 | 999 | 767 | 76.8 |
| 60-69 | 870 | 663 | 76.2 | 60-69 | 903 | 744 | 82.4 |
| 70 or over | 667 | 547 | 82.0 | 70 or over | 706 | 559 | 79.2 |
| total | 4875 | 3240 | 66.5 | total | 5125 | 3790 | 74.0 |

Source: Survey on People's Lifestyle in Japan, Cabinet Office

Table 2 How People Rate Their Standard of Living

| | high | upper-middle | middle | lower-middle | low | not applicable |
|--------|------|--------------|--------|--------------|-----|----------------|
| male | 1.2 | 9.7 | 52.7 | 27.7 | 6.7 | 2.0 |
| female | 0.7 | 10.3 | 56.1 | 23.9 | 6.0 | 3.0 |

Source: Survey on People's Lifestyle in Japan, Cabinet Office

(%)

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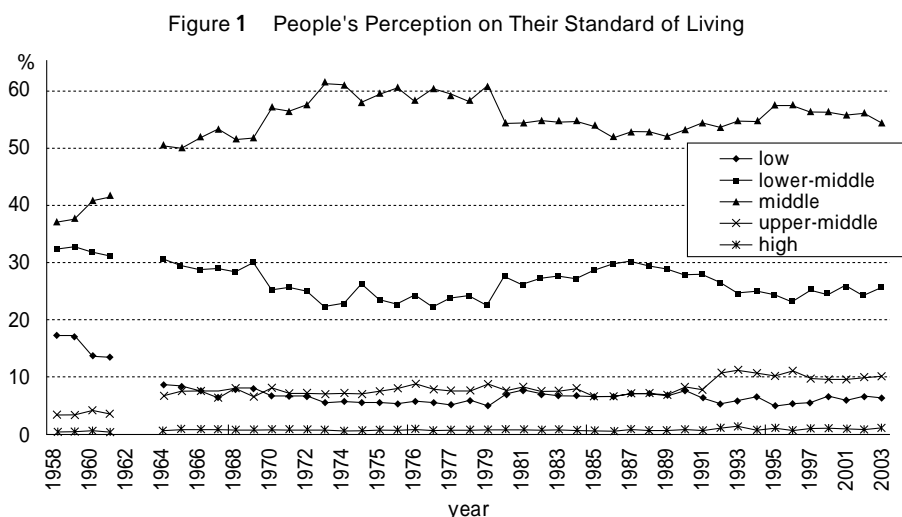
significance level. In other words, there is enough evidence in this data to conclude that men and women differ in the way they rate their standard of living. Since women have a higher participation rate in the study, this could also cause the data to be biased towards the “ middle ”.

Finally, the fact that the study was performed using interviews is another possible source of bias. Many would feel uneasy to admit, in front of a total stranger, that they belong to the lowest class (with regards to standard of living) even if they personally assess their standard of living to be “ low ”. Conversely, modesty is still an unspoken virtue in Japan, and many people are reluctant to admit that they belong to the highest class, albeit their own perception. The facts presented so far all point to the possibility of the data being biased towards the “ middle ”, with an exception of the age effect, a point which will be discussed later. All things considered, we need to proceed with caution when studying survey data, to interpret them with “ a grain of salt ”.

4 . Findings on Time Series Data

4.1 Perceptions over the Last 40 Years

Figure 1 displays a time series graph of how people rated their standard of living during the period of 1958 to 2003. It is a reproduction of Figure 24 in the survey report by the Cabinet



Reproduced from Figure 24 of the Report on the Survey of People's Lifestyle in Japan, Cabinet Office

Office (<http://www8.cao.go.jp/survey/h15/h15-life/images/zu24.gif>) As has been pointed out already, the gap in the graph shows that data were not available for the years 1962 and 1963.

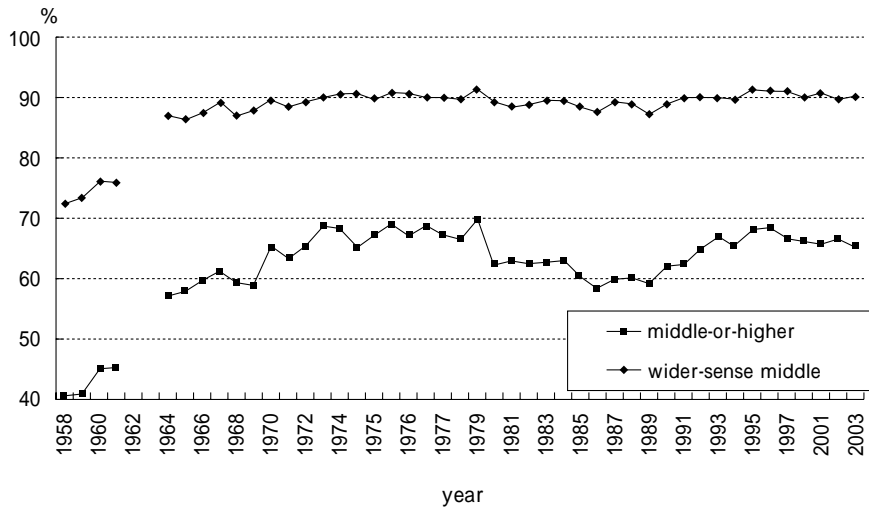
During the period of high economic growth, i.e. the period preceding the oil crisis of 1974, the most notable feature is that percentages of middle class and upper-middle class perception increase steadily while percentages of lower-middle class and low class perception decrease rapidly. It is safe to say that people's perceptions of their living standard improved steadily with economic expansion. Once the economy had reached a stable level of growth, that is, from 1975 onward, there is less fluctuation in the range of how people perceive their standard of living. The previous claim that 90% of Japanese perceive themselves to be a part of the middle class pertains to this period, although the figure clearly indicates that the percentage of people considering themselves to be literally in the middle class actually lies somewhere between 50% and 60%. Furthermore, the percentage of those respondents with a lower-middle class perception is much higher than the percentage of those respondents with an upper-middle class perception, and the same is true for low and high standard of living perceptions. In short, up until the present, the percentage of people rating their standard of living as lower than middle far outweighs that of people rating their living standard to be higher than middle.

What, then, is the rationale behind the claim of a 90% middle class perception? To answer this, I have added the percentages of the middle three classes (lower-middle, middle and upper-middle) to create an indicator representing middle class in a wider-sense. In addition, the percentage of people rating their standard of living to be in middle class or higher (middle, upper-middle and high) was also calculated. The middle-or-higher class represents people who find their standard of living satisfactory, or at least acceptable in relation to their social standing. Whether they are satisfied with the absolute level of their living standard itself is another question. The purpose of creating such a statistic is to obtain a simple indicator based on which we can evaluate whether or not people's overall perceptions of their standard of living are improving over time. Both variables are plotted against year in Figure 2.

We see from Figure 2 that a wider-sense of middle class perception reaches the 90% level in the mid 70's, after which there is surprisingly little digression from that level regardless of the fact that Japan's economy has experienced some ups and downs. Furthermore, there is no indication of this percentage falling in recent years, so there is no evidence to support the argument of a dwindling middle class perception amongst the Japanese from this data. We must not forget, however, that among those that perceive themselves to be in a wider-sense middle

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Figure 2 Wider-Sense Middle and Middle-or-Higher percentages



class, the percentage of people rating themselves to be in lower-middle class is about 3 times higher than those rating themselves to be in upper-middle class, so the claim of a 90% middle class perception is a little overrated.

Meanwhile, there is substantial movement in people's perception of a middle-or-higher class. The plot shows a considerable drop of percentage in the 80s, especially in the late 80s when Japan was experiencing an economic boom called the "bubble economy". The percentage thereafter increases following the bursting of Japan's economic bubble in the early 90s and continues to rise until the end of 90s, during a period in which the economy was in fact in recession. Recently, the percentage is falling slowly. In all, since the late 70s, the fluctuations in the percentage of people that are content with their relative living standard (people in middle-or-higher class) do not seem to be in accordance with, or relative to, the economic condition of the country.

4.2 Perceptions and Economic Conditions

To verify whether or not people's perception reflects current economic conditions, the values of correlation coefficients between the percentage of middle-or-higher perception and some leading economic indicators were derived.

In general, the correlation coefficient is a statistic that measures the strength of linear association between two variables. The correlation coefficient takes a value between -1 and 1,

whereby a negative value indicates that as one variable increases, the other has a tendency to decrease, and a positive value indicates that as one variable increases, the other has a tendency to increase as well. The larger the absolute value of the correlation coefficient is, the closer the two variables are to being linearly related.

Table 3 presents values of correlation coefficients between the middle-or-higher perception percentage and various economic indicators during the period 1975 to present. On the microeconomic side, disposable income and net increase in current assets of workers' households were selected. As a measure of macroeconomic conditions, unemployment rate, real GDP and its growth rate, urban land price index of major 6 cities (residential) and its growth rate were chosen. Data on economic indicators were taken from the following sources:

- 1) Real GDP: system of national accounts, the Cabinet Office
- 2) Disposable income, increase in current assets, unemployment rate: family income and expenditure survey, the Statistics Bureau
- 3) Urban land price index of 6 major cities (residential) Japan Real Estate Institute

We see from Table 3 that, apart from the urban land price index and its growth rate, none of the economic variables, not even disposable income, are significantly correlated with middle-or-higher perception. The urban land price index and middle-or-higher perception, as well as the growth rate in urban land price index and middle-or-higher perception are negatively correlated, although the correlation is moderate. This indicates that as price of land goes up, or equivalently, as housing becomes less affordable, people's standard-of-living perception goes down. A possible explanation is that the high cost of housing in Japan, especially in urban areas, is a dominant factor in the people's assessment of their living standard.

Table 3 Correlation coefficients of middle-or-higher percentage and economic indicators

| | |
|--|---------|
| disposable income (worker's household) | - 0.179 |
| net increase of current assets (worker's household) | 0.037 |
| unemployment rate | 0.065 |
| real GDP | - 0.133 |
| growth rate of real GDP | - 0.276 |
| urban land price index (6 major cities: residential) | - 0.373 |
| growth rate of urban land price index | - 0.610 |

5 . Findings on Cross-Sectional Data

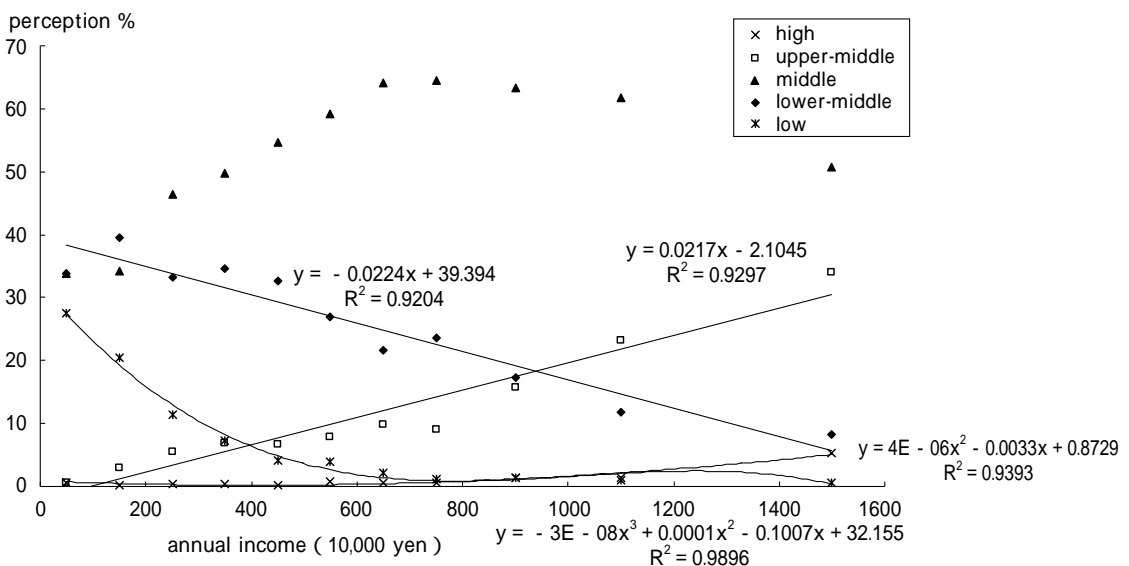
In this Section, data from the most recent survey conducted in June of 2003 are analyzed. In particular, relationships between people's standard-of-living perceptions and annual income, age, and the type of dwelling were reviewed.

5.1 Perceptions and income

Figure 3 shows a scatterplot of people's standard-of-living perceptions versus the annual income of the household. A regression line is added for illustrative purposes, except for middle class perceptions. It can be seen that lower-middle and upper-middle perceptions decrease and increase in an approximate linear fashion with income, while other classes have a non-linear association with income. Some of its features are as follows:

1. Middle class perceptions reach their peak at the annual income level of 7,000,000 yen to 8,000,000 yen. A family income and expenditure survey by the Statistics Bureau, conducted during the same month, states that the mean income of a household is 6,540,000 yen, and the median income, which is the value at 50%, is even lower, between 5,500,000 yen and 6,000,000 yen. This indicates that people are being rather conservative in the assessment of their living standard.

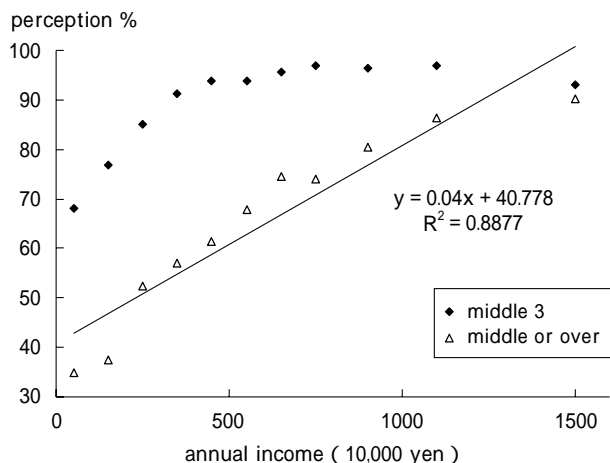
Figure 3 Perceptions versus Income Level



2. Even at the highest annual income level of 12,000,000 yen per year or higher, 50% percent of the people still perceive their standard of living to be middle class.
3. A rough regression analysis between perception and income level shows that with an increase of 1,000,000 yen in annual income, there is an approximately 2% decrease in lower-middle perceptions, and a 2% increase in upper-middle perceptions.
4. A decrease in low-class perceptions is very steep at the lowest three income levels, with annual income under 1,000,000 yen, income between 1,000,000 yen and 2,000,000 yen, and income between 2,000,000 yen and 3,000,000 yen. Thereafter, the rate of decrease drops considerably. Note that 46.5% of the people with annual income between 2,000,000 and 3,000,000 yen consider their standard of living to be middle class, although according to the family income and expenditure survey, only about 10% of all households make less than 3,000,000 yen per year.
5. An increase in high-class perceptions is very moderate, even in the higher income classes. In fact, only 5.4% of the people with the highest annual income claimed that their standard of living was high.

Figure 4 shows percentages of wider-sense middle class perceptions (middle 3 classes) and of middle-or-higher perceptions (upper 3 classes) plotted against annual income levels. Even at the lowest annual income level of 1,000,000 yen per year or lower, 68% of the people consider themselves to be in a wider-sense middle class. Furthermore, over 50% of the people

Figure 4 Perceptions versus Income Level



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with annual income between 2,000,000 yen and 3,000,000 yen consider their standard of living to be middle-or-higher, although they belong to the third lowest income level. A rough regression between perception and income indicates that as annual income increases by 1,000,000 yen, middle-or-higher perceptions increase by approximately 4%. It can also be inferred from Figure 4 that the structure of people's perceptions in the lowest two income levels as well as the highest income level may be different from the rest.

To summarize the empirical findings of Figures 3 and 4, people with higher incomes tend to assess their standard of living conservatively, while a majority of people with lower incomes still consider themselves to be middle class. Whether this is a result of a group mentality or a reflection of the relative homogeneity of the social condition in Japan is a subject for further study.

5.2 Perceptions and age

Table 4 presents people's standard-of-living perceptions sorted by age. It shows that standard-of-living perceptions of people 70 years or older are more dispersed than the other age groups in the data, regardless of gender. A plausible explanation is that financial assets, which are essentially an accumulation of incomes over the past years, show more disparity in this age group than income accumulation in younger age groups. At the same time, it is somewhat puzzling that, among people in their 20s, the percentages of high and upper-middle percep-

Table 4 Perceptions versus Age

male

| age | high | upper-middle | middle | lower-middle | low | not applicable |
|------------|------|--------------|--------|--------------|-----|----------------|
| 20 - 29 | 2.1 | 8 | 57.5 | 24.2 | 5.2 | 3.1 |
| 30 - 39 | 0.8 | 6.7 | 55.8 | 29.1 | 5.9 | 1.7 |
| 40 - 49 | 0.9 | 10.8 | 54.7 | 26.9 | 4.6 | 2 |
| 50 - 59 | 0.7 | 10.8 | 50.5 | 29.5 | 7 | 1.5 |
| 60 - 69 | 0.9 | 9.8 | 51.7 | 27.6 | 8 | 2 |
| 70 or over | 2.4 | 10.8 | 49 | 27.4 | 8.2 | 2.2 |

female

| age | high | upper-middle | middle | lower-middle | low | not applicable |
|------------|------|--------------|--------|--------------|-----|----------------|
| 20 - 29 | 0.8 | 14.8 | 56.9 | 20.6 | 4.3 | 2.8 |
| 30 - 39 | 0.8 | 8.9 | 59.1 | 25.2 | 4.5 | 1.6 |
| 40 - 49 | 0 | 11.3 | 59.5 | 22.9 | 4.1 | 2.2 |
| 50 - 59 | 0.8 | 9.4 | 54.8 | 25.8 | 6.3 | 3 |
| 60 - 69 | 0.8 | 8.9 | 56.3 | 24.2 | 6.9 | 3 |
| 70 or over | 1.3 | 10.9 | 49.6 | 22.7 | 10 | 5.5 |

Source: Survey on People's Lifestyle in Japan, Cabinet Office

(%)

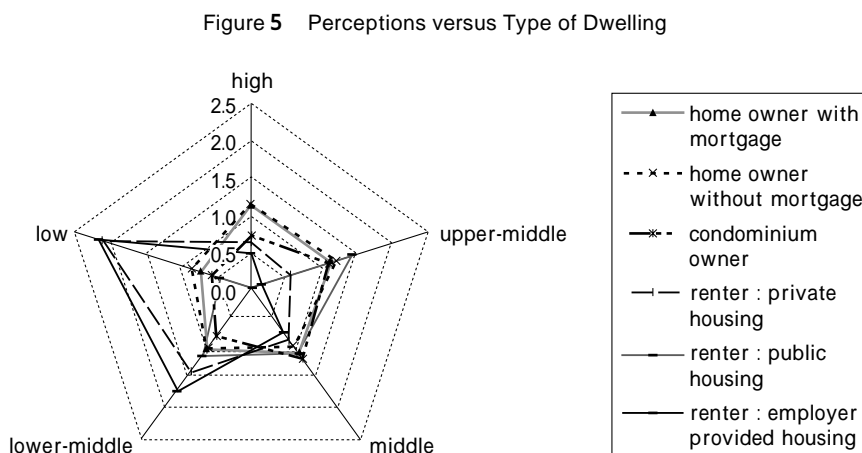
tions surpass those of people in their 30s for both sexes. The existence of the so-called “ parasite singles ”, i.e. young adults living with their parents and enjoying their parents’ economic power, may have contributed to this phenomenon.

Japan is now the most rapidly aging society in the world, with the ratio of people 65 years or older accelerating at an unprecedented speed. Coupled with high participation rates of older age groups in the survey, it is conceivable that, in the near future, the survey data on people’s standard-of-living perceptions will show an even higher dispersion and a decrease in middle class perceptions, even without major changes in the current social structure.

5.3 Perceptions and Type of Dwelling

I will now analyze the relation between the dwelling-type and people’s standard-of-living perceptions. The data used are people’s perceptions as sorted according to the following six types of dwellings: home owner without mortgage, home owner with mortgage, condominium owner, renter of private housing, renter of public housing, and renter of employer provided housing. Using this data, a coefficient of specialization was calculated for each combination of dwelling-type and standard-of-living perception, and results are displayed in the Figure 5 spider-web graph.

For this case, the coefficient of specialization is the ratio of the standard-of-living perception for each dwelling type to the overall standard-of-living perception. For example, 11.2% of the homeowners without mortgage rated themselves as upper-middle class, whereas the percentage of upper-middle class respondents in the whole sample was 10%. The coefficient of special-



ization is therefore $11.2/10=1.12$. When the value of the coefficient of specialization exceeds 1, the related dwelling-type (in this case, home owner without mortgage) is said to specialize in that category (upper-middle perception) One possible source of complication is the existence of people who refuse to rate their standard-of-living (not applicable) Because the percentage of refusal differs by dwelling-type, leaving it as is could very well cause a possible bias in the results. To cope with this situation, the values were adjusted to indicate percentages only within the group of people who rated their standard of living.

It is clear from Figure 5 that homeowners specialize in high and upper-middle category, whereas renters specialize in low and lower-middle category. In other words, homeowners tend to rate their standard-of-living higher than renters, with very little difference whether they are repaying a home loan or not. This finding is in accordance with the result of Section 4.2, where it was seen that price of land for residential use was correlated with people's perceptions of their living standard. The reason, as stated before, can be attributed to the high cost of housing in Japan. It can also be a result of people's general mistrust of the social welfare system, or a combination of both. For example, after retirement, renters whose only income is a pension continue to be faced with the burdens of a high monthly rental payment and the possibility of being evicted for a number of reasons. This prospect alone could cause the renters concern and eventually lead him or her to lower their self-evaluation of their current living standard, unless they have confidence in either the pension or the general welfare system.

Renters of employer-provided housing paint a somewhat peculiar picture. Although none of them perceived themselves to be in the highest class, the percentage of upper-middle perceptions in this category is much higher than for any of the other dwelling types. This phenomenon is not difficult to explain. Employer-provided housing is a form of benefit given by major corporations that can afford them. Employees of such companies are usually well paid and confident about their living standard, the only drawback being that they are not homeowners.

Although there seems to be a strong relation between dwelling-type and standard-of-living perceptions as seen above, this might just be a consequence of the effect of income on both factors. People with higher income have higher standard-of-living perception, and are more capable of purchasing homes. In fact, results from the family income and expenditure survey reveals that dwelling-type and income are related. For the year 2003, mean disposable income

for homeowners was 485,436 yen per month, whereas renters of private sector housing had a monthly disposable income of 373,955 yen, renters of public sector housing 318,940 yen, and those with employer-provided housing had a monthly disposable income of 486,123 yen. It should be noted that homeowners with a mortgage had the highest mean disposable income of 536,293 yen.

In order to separate the impact of income from the impact of dwelling-type, and to evaluate their effects on people's standard-of-living perceptions independently, more detailed data for analysis are necessary. Namely, data on each individual's income, dwelling-type, and standard-of-living perception would be essential for such a study. Unfortunately, for this survey, only aggregated data are available and, for the purposes of privacy protection, the general public cannot access individual data. Thus, for now, the finding that dwelling-type affects people's perceptions of their living standard is, I must admit, at best inconclusive.

6 . Concluding Remarks

This article reviewed features of people's perceptions of their standard-of-living in Japan. No empirical evidence supporting the hypothesis of decreasing middle class perceptions was found. At the same time, both a possible bias in the data towards the "middle" and the fact that far more people consider themselves as lower-middle than upper-middle are reasons to believe that the claim that 90% of Japanese people hold a middle class perception is rather overrated. We have also seen that since Japan has entered the period of stable economic growth, people's standard-of-living perceptions do not necessarily move in accordance with the economic condition of the country. Alarming, people's perceptions do not seem to be improving in recent years. With the arrival of a rapidly aging society, the percentage of middle class perceptions may decline in the near future, not necessarily due to a change in social structure but rather due to a dramatic change in population demographics.

Both time series data and cross-sectional data indicate a possible relation between home or residential land ownership and people's perceptions of their living standard. The high cost of housing in Japan, as well as people's general mistrust of the social welfare system may have contributed to this result, although further investigation is necessary to verify this conjecture.

Much work remains to be done to fully understand how people's standard-of-living perceptions are formulated. A multivariate analysis of individual data, provided they are obtainable,

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could prove fruitful in both identifying the factors essential to just how people formulate their standard-of-living perceptions and explicating the relationship between each factor and people's perceptions of their living standard. For simplicity, I have, in this article, excluded social aspects from the discussion. There is no doubt, however, that factors such as occupation, education, family background etc. also contribute in forming people's perceptions of their living standards. To investigate the social aspects as well as to analyze the impact of a rapidly aging society are subjects worthy of future research.

This paper, in amended form, was presented on my behalf in Strausbourg, France, at the workshop on " L'évolution du rapport salarial en France et au Japon " by professor Shinya Morita, on March 25, 2004.

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