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Who are the Joneses You are Keeping up with?

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Abstract

This study empirically investigates the choice of subjective reference group in a standard of living comparison and how this group was selected in Japan and the United States.

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1. Introduction

The importance of relative payoffs associated with subjective well-being and behaviors has been addressed in various studies (see also Abel 1990, Chen and Ludvigson 2009, Fehr and Schmidt 1999, Mangyo and Park 2011). However, the identification of reference groups with whom individuals compare themselves to in economics is still shrouded in mystery.

Many studies on macro-finance have used macroeconomic indicators, which implicitly assume that people consider the whole nation as a reference group. Numerous other studies have used indicators generated from those in similar socio-economic groups, which presume that people compare themselves to objective reference groups.[1]

Only a few recent studies have addressed subjective reference groups, and most of them are based on income comparisons (see also Clark and Senik 2010, Goerke and Pannenberg 2015, Yamada and Sato 2013). However, Hyman (1980) suggested that under disparate dimensions people would compare themselves to diverse peer groups, which implies that the reference groups used in income comparisons might not be appropriate for other comparisons.

This is the first study that aims to reveal the direction and determination of subjective reference groups in the standard of living (SOL) comparison in Japan and the United States. SOL is a much more general and overall evaluation of living circumstances, and focuses not only on income but also includes consumption, leisure, etc.

This study is organized as follows. Section 2 describes the data that was used for the empirical analysis. Section 3 describes the direction (compares to whom) and determination (who will or will not compare to whom) of the reference groups. Section 4 concludes and discusses.

2. Data

Data from the 2011 wave of the Japanese and the US surveys from the Preference Parameters Study of Osaka University were used in this study. This panel survey has been conducted in Japan since 2004 by employing two-stage stratified random sampling and in the United States since 2005 by random sampling based on age, gender, and race-ethnicity.

Respondents were asked the following questions: “How does your standard of living compare with that of the people around you?” followed by “With whom did you compare your standard of living?” Respondents were allowed to select only one of the following 13 reference groups: Neighbor; Your own classmates when you were in school; Relatives; Families of your children’s classmates; Worker in your company who is in your age group, has similar academic background, or who started working in the same year; Worker in your company who is assigned to a similar job as yours, regardless of their age, academic background, year in which he or she joined the company; Worker in another company in the same industry who belongs to the same

[1] The objective reference groups are those that people compare to with given socio-economic characteristics, and the subjective reference groups are those that individuals interact with socially.

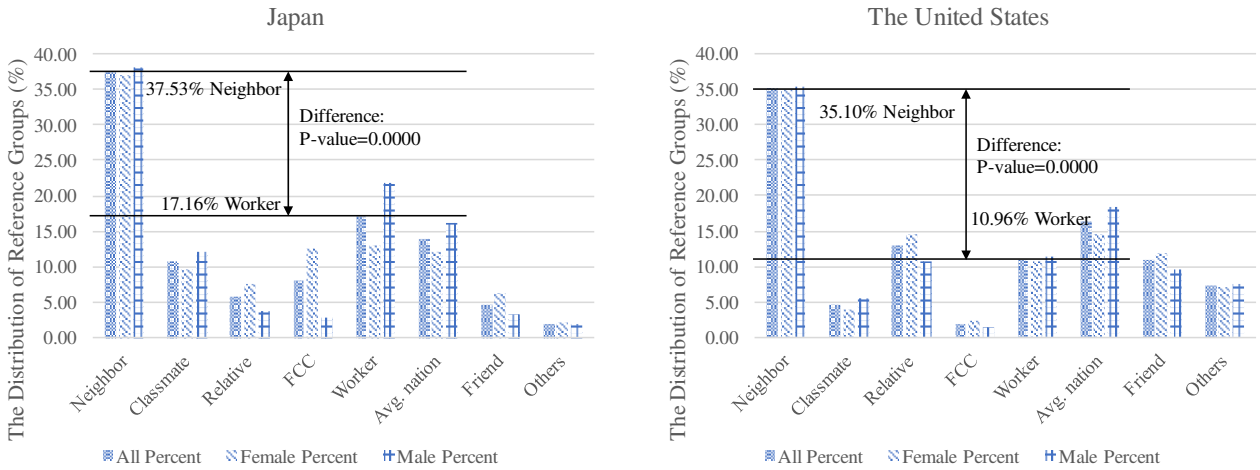
age group, has similar academic background, or who started working in the same year; Worker in another company in the same industry who is assigned to a similar job as yours, regardless of his or her age, academic background, and year in which he or she joined a company; Average person in Japan (in the US); Average person in the world; Friend of acquaintance excluding above choices; Others; I don't know.

3. Results

3.1 Direction of Reference Groups

Figure 1 shows that over 35% of the respondents compared their SOL to neighbors in both Japan and the United States. A higher proportion of both males and females in Japan and the United States compared their SOL with that of their neighbors rather than with that of workers or the average person in the nation.[2]

Figure 1 The Distribution of Reference Groups



Notes:
1. "FCC" represents "Families of your children's classmates." "Worker" includes "Worker in your company who is in your age group, has similar academic background, or who started working in the same year," "Worker in your company who is assigned to a similar job as yours, regardless of their age, academic background, year in which he or she joined the company," "Worker in another company in the same industry who belongs to the same age group, has similar academic background, or who started working in the same year," and "Worker in another company in the same industry who is assigned to a similar job as yours, regardless of his or her age, academic background, and year in which he or she joined a company." "Avg. nation" represents "Average person in Japan" for the Japanese survey and "Average person in the US" for the US survey. "Others" includes "Average person in the world," "Others," and "I don't know."
2. The empirical analysis excluded those who had no children but chose "Families of your children's classmates," and those who did not answer the first question, "How does your standard of living compare with that of the people around you?"
3. Number of observations in Japan: 4871 (2599 females and 2272 males), and in the US: 4735 (2600 females and 2135 males)

[2] The most cited reference group is always "neighbor" and the ranking of reference groups of the whole sample does not change much from 2008 to 2012.

3.2 Determination of Reference Groups

Assume that individuals compare themselves to those with whom they interact socially; then the model that determines reference groups will depend on an individual's socio-economic characteristics such as age, gender, marital status, and so on.

$$RG_i = \alpha + \beta \times Country_i + \gamma' \boldsymbol{X_i} \quad (1)$$

where RG_i is the reference group for individual i, $Country_i$ is where individual i lives, and $\boldsymbol{X_i}$ is the vector of socio-economic characteristics.

Table I shows the results of the relative risk ratios for the multinomial logit regression. Japanese are more likely than Americans to compare themselves to workers than to neighbors. Females are less likely than males to compare themselves to the average person in the nation than to neighbors. As age increases, people are more likely to compare themselves to their neighbors. In general, singles are less likely than married individuals to compare themselves to neighbors. Given that all other variables are held constant, if a Japanese increases their number of children by one unit, the relative risk for comparing to "worker," "Avg. nation," and "others" to "neighbor" decreases by a factor of 0.8446, 0.7690, 0.8597, respectively.

In income comparisons, the most cited reference group in European countries is work colleagues, while in Japan it is friends (see also Clark and Senik 2010, Yamada and Sato 2013). To compare with the results of income comparison, variables related to working status were controlled in the model. The results show that those who work for a company and full-time workers are more likely to compare themselves to workers than to neighbors than those who are not. The self-employed are less likely to compare themselves to workers, which is consistent with the income comparison result.

Table I With Whom Did You Compare Your Standard of Living? (Multinomial Logit Regression. Omitted Category: "Neighbor")

	(1) All			(2) Japan			(3) US		
	Worker	Avg. nation	Others	Worker	Avg. nation	Others	Worker	Avg. nation	Others
Country Dummy (US=0, JP=1)	1.6786***	1.1090	0.9927						
	(0.15)	(0.11)	(0.08)						
Female Dummy	1.0725	0.7784*	1.3023**	1.0296	0.8729	1.4564**	1.1751	0.7675	1.1897
	(0.10)	(0.08)	(0.11)	(0.14)	(0.13)	(0.19)	(0.16)	(0.11)	(0.14)
Log (Household Income)	1.1306	0.8996	0.9376	1.0346	0.84580	0.8017	1.2960	1.0457	1.0947
	(0.12)	(0.10)	(0.09)	(0.15)	(0.16)	(0.12)	(0.19)	(0.16)	(0.13)
Number of Children	0.9038*	0.9442	0.9303*	0.8446*	0.7690**	0.8597*	0.9437	1.0477	0.9673
	(0.04)	(0.05)	(0.03)	(0.06)	(0.06)	(0.05)	(0.05)	(0.07)	(0.04)
Working for a Company Dummy	2.4679*	2.1999*	2.5051***	2.6268*	2.9411*	4.2858***	2.0781	1.3233	1.2559
	(0.88)	(0.70)	(0.60)	(1.12)	(1.36)	(1.68)	(1.37)	(0.61)	(0.43)
Self-employed Dummy	0.3527***	0.9234	1.0967	0.3381***	0.7822	1.0955	0.4056**	1.3122	1.1854
	(0.05)	(0.13)	(0.12)	(0.06)	(0.14)	(0.16)	(0.13)	(0.29)	(0.22)
Age Group (omitted: Less than 35 years)									
35-60 years	0.6700**	0.8318	0.3701***	0.5221*	0.5571	0.2283***	0.6680*	0.9807	0.4565***
	(0.10)	(0.16)	(0.05)	(0.13)	(0.17)	(0.06)	(0.14)	(0.24)	(0.08)
Above 60 years	0.4350***	0.9953	0.2406***	0.2518***	0.5513	0.0975***	0.7075	1.6596	0.5018***
	(0.08)	(0.21)	(0.04)	(0.07)	(0.18)	(0.03)	(0.18)	(0.47)	(0.10)
Education (omitted: College or above)									
Not reach high school	1.1985	0.6886	0.7818	1.3047	0.6052	0.7960	1.0467	1.1072	0.9633
	(0.25)	(0.18)	(0.16)	(0.32)	(0.19)	(0.20)	(0.56)	(0.56)	(0.41)
High school	1.0412	0.9594	1.1311	1.0456	0.8371	1.0887	1.0833	1.1752	1.2115
	(0.10)	(0.10)	(0.10)	(0.13)	(0.12)	(0.14)	(0.16)	(0.18)	(0.14)
Marital status (omitted: Single)									
Have a spouse	0.5768***	0.5795**	0.6894**	0.7502	1.0347	0.9335	0.4728***	0.4186***	0.5848**
	(0.09)	(0.10)	(0.10)	(0.18)	(0.30)	(0.22)	(0.10)	(0.10)	(0.11)
Others	0.5736**	0.7803	0.8057	0.6723	1.3779	0.9440	0.5194*	0.5594*	0.7248
	(0.11)	(0.17)	(0.14)	(0.21)	(0.48)	(0.28)	(0.13)	(0.16)	(0.15)
Employment Status (omitted: Part-time)									
Full-time	1.5595***	0.9110	0.8227*	1.6244**	1.0194	0.8525	1.5263**	0.8962	0.8763
	(0.17)	(0.11)	(0.08)	(0.27)	(0.19)	(0.13)	(0.24)	(0.14)	(0.11)
Others	1.3961*	0.8822	0.8831	1.8092**	1.0612	0.9335	0.4129	0.7557	0.9659
	(0.22)	(0.15)	(0.12)	(0.35)	(0.24)	(0.17)	(0.19)	(0.21)	(0.23)
Constant	0.3660*	0.5293	1.5403	0.7810	0.6293	1.6325	0.3297	0.5251	1.8223
	(0.15)	(0.22)	(0.49)	(0.43)	(0.41)	(0.86)	(0.23)	(0.29)	(0.77)
Observations	4575			2594			1981		
Pseudo R^2	0.0424			0.0569			0.0334		

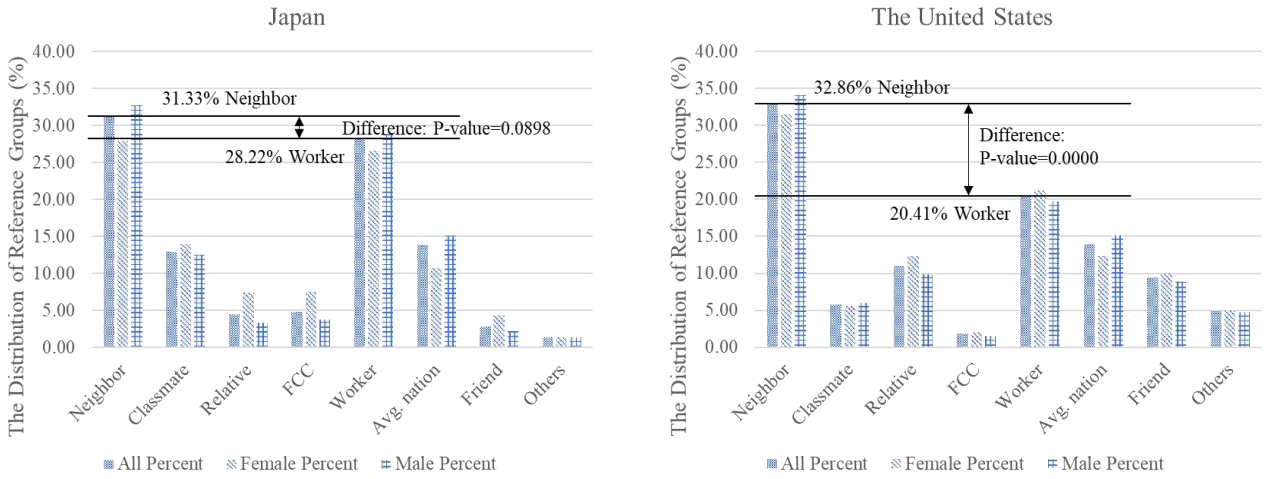
* p < 0.1, ** p < 0.05, *** p < 0.01. Coefficients are shown as Relative Risk Ratios. Robust standard errors in parentheses.

Notes:

1. "Others" includes "Classmate," "Relative," "FCC," "Friend," and "Others" in Figure 1.

Figure 2 shows that among full-time workers, the reference group for 31.33% of Japanese is neighbors, while for 28.22% it is workers. Similarly, the reference group for 32.86% of Americans is neighbors, while for 20.41% it is workers. The differences are significant but smaller than the results presented in Figure 1.[3]

Figure 2 The Distribution of Reference Groups for Full-time workers



Notes:
1. Includes only full-time workers
2. Number of observations in Japan: 1770 (502 females and 1268 males), and in the US: 1678 (775 females and 903 males)

4. Conclusion and Discussion

The results show that most people compare themselves to their neighbors instead of the average person in the nation (a frequent assumption in macro and finance literature), or work colleagues and friends (reference groups in income comparison). There were country, gender, and other socio-economic characteristic differences in the determination of reference groups.

This study provides a new perspective to solve the equity premium puzzle, the Easterlin Paradox, and other economic puzzles by applying relative consumption of the subjective reference groups.

[3] One possible interpretation could be the application of "routine standard" in the reference group selection. Mussweiler and Rüter (2003) define "routine standard" as a checkpoint that has been used frequently and spontaneously for social comparisons. This implies that comparisons to other workers are unintentional and frequent in the workplace, and this is routinely used in selecting the reference group for SOL comparisons.

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