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The results show that majority people will compare to their neighbor instead of the average people in the nation (which is often assumed in the macro and finance literature), colleagues or friends (reference groups in income comparison) in both countries. This paper suggests that people may use the routine standards when facing the selection of reference groups in relative standard of living. In addition, this paper tests the influence of reference group itself on the standard of living. The result unveils that those who compare to their neighbor will rate the relative standard of living higher than the others.

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Abstract

This study empirically investigates who is chosen as the reference group in the standard of living comparison and how it is chosen in Japan and the United States. The results show that majority people will compare to their neighbor instead of the average people in the nation (which is often assumed in the macro and finance literature), colleagues or friends (reference groups in income comparison) in both countries. This paper suggests that people may use the routine standards when facing the selection of reference groups in relative standard of living. In addition, this paper tests the influence of reference group itself on the standard of living. The result unveils that those who compare to their neighbor will rate the relative standard of living higher than the others.

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[1] I am grateful to Masao Ogaki, Colin R Mckenzie, Fumio Ohtake, and participants of the 10th Annual Conference of the Association of Behavioral Economics and Finance. This research uses micro data from the Preference Parameters Study of Osaka University's 21st Century COE Program 'Behavioral Macrodynamics Based on Surveys and Experiments' and its Global COE project 'Human Behavior and Socioeconomic Dynamics'. I acknowledge the program/project's contributors: Yoshiro Tsutsui, Fumio Ohtake, and Shinsuke Ikeda. This work was supported by Doctorate Student Grant-in-Aid Program from Keio University.
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1. Introduction

People are inevitable to compare with others for the purpose of measuring their opinions and abilities (Festinger, 1954). Especially when objective measurement doesn't work, reference groups will be used for self-evaluation, self-enhancement, and self-improvement (Guimond, 2006).

Fehr and Schmidt's theoretical model (1999) presumes that people's behavior and subjective well-being are affected by relative payoffs. And the importance of relative payoffs associated with subjective well-being has been observed in many empirical researches (Clark and Oswald, 1996; Clark et al., 2009; Clark and Senik, 2010; Clark et al., 2013; Ferrer-i-Carbonell, 2005; Knight et al., 2009; Mayraz et al., 2009; McBride, 2001; Yamada and Sato, 2013).

What kind of relative indicators has been used in Economics? In general, there are three ways to define the relative indicators in previous literature which are macroeconomic indicators (Abel, 1990; Campbell and Cochrane, 1999; Duesenberry, 1949; Di Tella et al., 2003; Easterlin, 1974; Easterlin, 1995; Easterlin et al., 2010; Gali, 1994), the indicators generated from those who are in the similar socio-economic groups (Clark et al., 1996; Clark et al., 2009; Ferrer-i-Carbonell, 2005; McBride, 2001; Pérez-Asenjo, 2011), and the indicators generated from self-reported reference groups (Clark and Senik, 2010; Clark et al., 2013; Knight et al., 2009; Mayraz et al., 2009; Mangyo and Park 2011; Neumark and Postlewaite, 1998; Yamada and Sato, 2013).

What kind of reference groups has been used in Economics? And which one is more crucial? Here the author defines two types of reference groups: objective reference groups and subjective reference groups.[3] Objective reference groups are the groups which people compare to with given socio-economic characteristics, such as similar age, similar educational attainment, same occupation, in the same organization, etc. Using macroeconomic indicators implicitly assumes that people are taking the whole nation as the reference group. As a result, the nationwide comparison is a kind of objective reference groups as well. Subjective reference groups are the ones which individuals socially interact with indeed.[4] The subjective ones mainly refer to self-reported reference groups in an interview or a survey, such as neighbors, friends, relatives, classmates, etc. Mangyo and Park (2011) mentioned that the reference groups people social contact with frequently are more salient, which suggested that subjective reference groups may be much more essential because these kinds of reference groups are the ones people associate with.

[3] The names of objective and subjective reference groups stemmed from objective and subjective status in psychology introduced by Hyman (1942).

[4] Clark et al. (2009) categorized the reference groups into the one that individuals interact with, and the other which is similar to them.

Why is the study of the reference groups prominent? Firstly, whom do individuals compare to and how do they compare to such peer group in Economics are still shrouded in mystery. Without knowing the peer group, how could we define any variables related to the word 'relative'? Secondly, what Hyman (1942) found suggested that under disparate dimensions, people would compare to diverse peer groups, which implies that the reference groups in income comparison (Clark and Senik, 2010; Clark et al., 2013; Yamada and Sato, 2013) might not be held in standard of living (SOL) comparison. Additionally, SOL is a much more general and overall evaluation of living circumstance. Also, the comparison direction, which refers to the reference group itself, has an impact on happiness (Clark and Senik, 2010).

This is the first study, which will reveal the self-reported reference groups in SOL comparison in Japan and the United States, and test how people will choose such specific reference groups. The results show that the most cited reference group is the neighbor. There are 13.9% Japanese and 16.3% Americans compare to the average people in Japan and the United States. Contrary to what the previous literature found in income comparison, employees are the second and the fourth largest reference groups in Japan and the United States, respectively. Therefore, it is inappropriate and incongruous to use macroeconomics indicators and income's reference groups as the reference groups of SOL. Japanese and females are less likely to do nationwide comparison than Americans and males. The Blinder-Oaxaca decomposition reveals that the significant gap in country and gender of the mean of those who compare nationwide is mainly explained by the coefficients instead of the endowments. Then I apply the routine standards to verify the explanation for the determination of the reference groups. Even from the information accessibility prospect, the SOL of neighbor is much more effortless to observe than that of other work colleagues, the evidence indicates that those who are working for a company and full-time workers are more likely to compare to other workers to neighbors. The routine standards activate because that full-time employees compare to or be compared to other colleagues more often than part-time ones. In addition, the result demonstrates that those who compare to neighbor evaluate their relative standard of living (RSOL) higher than those who compare to classmates, relatives, mama friends, friends, etc.

This study is organized as follows. Section 2 describes the data I used to present empirical result. Section 3 describes the direction (compares to whom) and determination (who will or will not compare to whom) of the reference groups, and interpretation about why people choose their reference groups. Section 4 shows the impact of reference groups on the relative standard of living. Section 5 concludes and discusses.

2. Data

Preference Parameters Study of Osaka University is used in this research. This panel survey has been conducted in Japan since 2004, and in the United States since 2005 by the Institution of Social and Economic Research of Osaka University. They use a random sample drawn from 20-69 years old in the wave of 2004 in Japan and 18-99 years old in the wave of 2005 in the United States. The latest fresh samples were selected in 2009 in both two countries.

The 2011 wave data sets of Japan and the US are used in this paper. There are two main questions in the questionnaire that will be used in the analyses. Taking the Japan 2011 Preference Parameters Study as an example, question 15 asked 'How does your standard of living compare with that of the people around you', followed by the question 'In Q.15, with whom did you compare your standard of living'. The respondents could select one and only one among the following 13 reference groups listed in the questionnaire. (see Appendix 1)

3. Direction and Determination of Reference Groups

3.1 Who are the Joneses in the standard of living comparison?

Table 1 shows the distribution of the reference groups. Over 35% respondents compare SOL to neighbors in Japan and the United States. The average person in the nation is the second major comparison subject in the United States, and the third in Japan. For both males and females in Japan and the United States, majority compare to their neighbor instead of the average person in the nation. There are some obvious distinctions in gender for reference groups. More American and Japanese men compare to classmates and other workers than women, and more American and Japanese women compare to relatives and friends than men. The extraordinary high percentage of 'Mama friend'[5] in Japanese female subsample is mainly due to the Mama Caste (Mama Kasuto in Japanese)[6] experienced by mothers whose children are friends or classmates. Statistically, there is a significant difference in reference groups over gender in Japan and the United States.[7]

Insert Table 1 Here

[5] Here I refer to 'Families of your children's classmates' as 'Mama friend' ('Mama-tomo' in Japanese). Because there is an exceptionally high percentage of Japanese females compare to 'Mama friend', and there exists a Japanese word 'Mama-tomo' to describe such unique and special type of relationship in Japan. For the most family in Japan, mothers are responsible for picking up children, and they become 'mama-tomo' just because their children are friends or in the same class. However, Mama friend is not friends.

[6] 'Mama Caste' refers to a kind of ranking system, which is ranked by household income, children's learning ability, husband's occupation, etc.

[7] The surveys for China urban areas, conducted in 6 cities, were not available until 2009. 2012 China survey provides that only 5.8% Chinese compare with the whole country, and it is insignificant in the distribution of reference groups over gender.

Appendix 1A shows that the most cited reference group is always ‘neighbor’ from 2008 to 2012. Even if individual’s choice varies over years, the distribution’s ranking of reference groups of the whole sample doesn’t change a lot.

3.2 Who will / will not compare to the whole nation or neighbor

Table 2 presents coefficients and marginal effects of Probit regression by taking those who choose to compare nationwide or neighbor as ‘1’, and those who choose the other 12 reference groups as ‘0’.

Insert Table 2 Here

The columns (1) and (2) of Table 2 show that Japanese, females, individuals from rich families and those who haven’t finish high school are less likely to compare to average person in the nation than the Americans, males, the poor and those who have graduated from college or above, respectively. While elderly people are more likely to compare nationwide than those who are less than 35 years old. The columns (3) and (4) of Table 2 show that those who are younger than 35 years old and the single are less likely to compare to neighbors; on the contrary, males, less educated people are more likely to compare to neighbors than females and well-educated people.

To explore the differences for those who will compare to average people in the nation in detail, Table 3 provides the T-test result and Blinder-Oaxaca decomposition based on Probit regression (Appendix 3A and Appendix 3B provide Blinder-Oaxaca decomposition based on linear probability regression in detail). The mean of those who compare to the average people in the nation is 0.1616 for the United States and 0.1377 for Japan with a significant gap of 0.0239. The differences in coefficients account for 104.23% of the gap. Also, the mean of those who compare to the average people in the nation is 0.1694 for males and 0.1314 for females with a significant gap of 0.0381. The differences in coefficients account for 100.18% of the gap. Concurrently, the mean of those who compare to neighbors is 0.3480 and 0.3758 for the United States and Japan, respectively, with a significant difference of 0.0278 and over 100% of the difference is explained by the endowments. While there is no significant gap between males and females.

Insert Table 3 Here

Table 4A shows the results of Multinomial Logit regression with all the same independent variables in Table 2 controlled and the ‘Neighbor’ category omitted. Japanese relative to the Americans, are more likely to compare to workers to neighbors, but less likely to compare to the average person in the nation and others to neighbors. Females are less likely than males to compare to the average person in the nation to neighbors. While Japanese females are less likely

to compare to workers than Japanese males, but American females are more likely than American males. With the age grows, people are more likely to compare to their neighbors. Less educated people are more likely to compare to neighbors to the average person in Japan and the United States, which demonstrate the results in Table 2. In general, singles are less likely to compare to neighbors than married individuals or the ones in any other marital status.

Insert Table 4A Here

Insert Table 4B Here

3.3 How do we choose to whom we compare?

In income comparison, the most cited reference groups are work colleagues in European countries and friends in Japan (Clark and Senik, 2010; Clark et al., 2013; Yamada and Sato, 2013).[8] In previous sections, the results demonstrated that majority Japanese and Americans choose neighbors as reference groups in SOL comparison instead of colleagues or friends. Why is the direction of comparison different? As I have mentioned before, one possible explanation is that the questionnaire is asking about SOL, which is not only focused on income but also implies about the comparison in consumption, leisure, daily life, etc. Under this different comparison dimension, people will choose different reference groups which are consistent with Hyman's finding. Also from the information accessibility prospect, everyday life has provided much opportunity to observe neighbor's SOL than their colleagues or friends.

Then here brings us another question that since it is easier to compare to neighbors than work colleagues towards SOL, why there is more than 10% of Japanese and Americans choose work colleagues as the reference groups for SOL comparison? One explanation is the concept of routines. Betsch et al. (2002) define the routine as:

'option that comes to mind as a solution when the decision maker recognized a particular decision problem'

Instead of considering all the possible alternatives, people will pick up the solution which matches the problem, in terms of the application of the routines as a more efficient way (Betsch et al. 2002; Guimond, 2006). Mussweiler and Rüter (2003) define the routine standard as a checkpoint that has been used frequently spontaneously for social comparison and they show the evidence of the implementation of the routine standard in self-evaluation.

As a result, we compare to or be compared to our work colleagues unintentionally and frequently in the workplace all the time, then people follow this routine in selecting the reference

[8] European Social Survey includes 'Work colleagues/ Family members/ Friends/ Others/ Don't compare/ Not applicable/ Don't know'. Internet-based survey conducted in Japan by Nikkei includes 'family/ neighbors/ friends/ colleagues/ do not care/ others'

group of SOL. Consequently, I assume that those who are working for a company or full-time workers are more likely to compare to the workers than neighbors. Table 4B provides the results based on Multinomial Logit regression (omitted 'neighbor'). With all the independent variables controlled in Table 4A, Panel A of Table 4B verifies the assumption that for those who are working for a company and full-time workers are more likely to compare to workers to those who are not. The self-employed are less likely to compare to the workers, which is consistent with the result in income comparison (Clark and Senik, 2010). Panel B of Table 4B demonstrates that housewives/househusbands and the retired are less likely to compare to workers to neighbors in both Japan and the United States, as well as unemployed Americans. The result is compatible with the routine standards explanation.

4. Reference Groups and Relative Standard of Living

How does your standard of living compare with that of the people around you? More than half of Japanese and Americans will say that "Theirs is about the same as mine" (See Appendix 2). On average, individuals think their own RSOL is lower than their reference groups' (See Table 1).[9]

Have you ever thought that the RSOL will be affected by the reference group you chose? Table 5 shows the result of RSOL based on Ordered Probit regression. The dependent variable, RSOL, equals to 1 when the respondent's RSOL is lower than their reference groups', and equals to 5 when the respondent's RSOL is higher. For individuals from the rich family and those who have finished college or above, they rate their RSOL higher than those who are needy or less educated. Housewives or househusbands and the retired rate higher than those who are not in Japan, while American housewives or househusbands rate lower than those who are not. Both in Japan and the United States, the RSOL of the unemployed will be lower than the others. With social-economics variables controlled, the RSOL of those who compare to their neighbor will be higher than those who compare to the other reference groups ('Others' includes 'Classmate', 'Relative', 'Mama friend', 'Avg. world', 'Friend', 'Others' and 'I don't know'). Therefore, the RSOL will be affected by the reference groups you chose. Even the respondents' RSOL is lower than their reference groups' RSOL on average, those who compare to their neighbor will have slightly higher RSOL in general.

[9] Please note that the RSOL is Ordinal variables.

5. Conclusion and Discussion

This study aimed at revealing the direction of reference groups in the standard of living comparison.

In the data, majority people were comparing with their neighbor, just like the idiom "keeping up with the Joneses". Unlike what previous literature in macroeconomics and finance implicitly assumed that the Joneses are the ordinary people across the country or work colleagues and friends in income comparison, this paper provided the evidence that subjective reference group, the neighbor is what majority people literally compare with. Also, there were the country difference, gender difference and other socio-economic characteristics difference in selecting reference groups. This paper also suggested the application of routine standards in the selection of reference groups in relative standard of living. Finally, this paper showed that the reference group itself has an influence on the relative standard of living.

Just as what the temporal comparison (Albert, 1977) in psychology mentioned, internal habit formation model suggested that individuals would compare to the old themselves as well. Therefore, the reference groups could be widely explored as present objective reference groups, present subjective reference groups, past objective reference groups, past subjective reference groups and the past 'myself', which leaves us a new perspective to solve the economic puzzles.

Chen and Ludvigson (2009) examined two hypotheses about the linear or nonlinear, internal or external habit formation model by analyzing the real per-capita consumption and real asset returns where the habit is from the 'myself' if it's 'internal' or from objective reference groups if 'external'.[10] However, in section 3 of this paper, the empirical results had shown that majority Japanese and Americans compare to their neighbors, hence great interest in applying the consumption from subjective reference groups as the 'external'.

For further research, one possible question to investigate is whether or not the reference group itself affect one's consumption or saving behaviors, just as its influence on happiness and relative standard of living.

[10] Here, the 'internal' refers to the past 'myself', and the 'external' depends on present or past objective reference groups and subjective reference groups.

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Tables

Table 1 The Distribution of Reference Groups and the Mean of Relative Standard of Living

	Japan								
	All			Female			Male		
	Obs.	Percent	RSOL	Obs.	Percent	RSOL	Obs.	Percent	RSOL
Neighbor	1,828	37.53	2.72	963	37.05	2.71	865	38.07	2.74
Classmate	528	10.84	2.66	251	9.66	2.65	277	12.19	2.66
Relative	281	5.77	2.58	195	7.50	2.58	86	3.79	2.58
Mama Friend	392	8.05	2.56	325	12.50	2.55	67	2.95	2.61
Worker	836	17.16	2.72	340	13.08	2.64	496	21.83	2.77
Avg. nation	677	13.90	2.72	312	12.00	2.66	365	16.07	2.76
Friend	232	4.76	2.63	159	6.12	2.62	73	3.21	2.67
Others	97	1.99	2.63	54	2.08	2.69	43	1.89	2.56
Total	4,871	100.00	2.69	2,599	100.00	2.65	2,272	100.00	2.73

	The Unites States								
	All			Female			Male		
	Obs.	Percent	RSOL	Obs.	Percent	RSOL	Obs.	Percent	RSOL
Neighbor	1,662	35.10	2.84	907	34.88	2.80	755	35.36	2.90
Classmate	219	4.63	2.69	100	3.85	2.77	119	5.57	2.62
Relative	611	12.90	2.72	380	14.62	2.69	231	10.82	2.76
Mama Friend	94	1.99	2.85	64	2.46	2.86	30	1.41	2.83
Worker	519	10.96	2.92	278	10.69	2.87	241	11.29	2.98
Avg. nation	771	16.28	2.80	377	14.50	2.71	394	18.45	2.89
Friend	514	10.86	2.75	308	11.85	2.73	206	9.65	2.78
Others	345	7.29	2.80	186	7.15	2.81	159	7.45	2.79
Total	4,735	100.00	2.81	2,600	100.00	2.77	2,135	100.00	2.86

Notes:

1. ‘Mama Friend’ 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’. ‘Others’ includes ‘Average person in the world’, ‘Others’ and ‘I don’t know’.
2. ‘Avg. nation’ represents ‘Average person in Japan’ of the Japan survey and ‘Average person in the US’ of the US survey.
3. ‘RSOL’ represents relative standard of living, by taking the mean of the question ‘how does your standard of living compare with that of the people around you’ (Here the value has been recoded as 1 represents ‘Theirs is much higher than mine’ and 5 represents ‘Theirs is much lower than mine’) for each reference groups.
4. Excluding those who have no children but chose ‘Families of your children’s classmates’, and those who didn’t answer the previous question about ‘how does your standard of living compare with that of the people around you’.

Table 2 Who will Compare to the Average Person in the Nation and Neighbors (Probit Regression)

	Avg. nation		Neighbor	
	(1) Coef.	(2) Margins	(3) Coef.	(4) Margins
Country Dummy (US=0, Japan=1)	-0.0892***	-0.0204***	-0.0172	-0.0064
	(0.02)	(0.00)	(0.02)	(0.01)
Female Dummy	-0.1745***	-0.0399***	-0.0170***	-0.0063***
	(0.02)	(0.00)	(0.00)	(0.00)
Log of Household Income	-0.1037***	-0.0237***	-0.0103	-0.0038
	(0.01)	(0.00)	(0.04)	(0.02)
Age Group (omitted: Less than 35 y/o)				
35-60 y/o	0.1811***	0.0415***	0.4205***	0.1566***
	(0.02)	(0.00)	(0.08)	(0.03)
Above 60 y/o	0.3572***	0.0818***	0.6885**	0.2565**
	(0.05)	(0.01)	(0.28)	(0.10)
Education (omitted: College or above)				
Not reach high school	-0.1697***	-0.0373**	0.2202**	0.0843**
	(0.06)	(0.02)	(0.10)	(0.04)
High school	-0.0574	-0.0134	0.0089	0.0033
	(0.11)	(0.03)	(0.06)	(0.02)
Marital status (omitted: Single)				
Have a spouse	-0.0313	-0.0072	0.3324***	0.1187***
	(0.02)	(0.00)	(0.01)	(0.00)
Others	0.0284	0.0067	0.1898***	0.0656***
	(0.04)	(0.01)	(0.02)	(0.01)
Constant	-0.9223***		-1.0780***	
	(0.10)		(0.24)	
Observations	8346		8346	
Pseudo R^2	0.0137		0.0354	

* p < 0.1, ** p < 0.05, *** p < 0.01.
Standard errors in parentheses are clustered by country.

Table 3 T-test and Blinder-Oaxaca Decomposition (Probit Regression)

Avg. Nation

	US - Japan comparison			Male - Female comparison		
	US	Japan	Difference	Male	Female	Difference
Mean:	0.1616	0.1377	0.0239***	0.1694	0.1314	0.0381***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)
Observations:	4017	4329		3901	4445	
Blinder-Oaxaca:	endowments	coefficients	interaction	endowments	coefficients	interaction
	37.44%	104.23%	-41.67%	-12.98%	100.18%	12.80%

Neighbor

	US - Japan comparison			Male - Female comparison		
	US	Japan	Difference	Male	Female	Difference
Mean:	0.3480	0.3758	-0.0278***	0.3648	0.3604	0.0044
	(0.00)	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)
Observations:	4017	4329		3901	4445	
Blinder-Oaxaca:	endowments	coefficients	interaction	endowments	coefficients	interaction
	136.57%	16.81%	-53.38%	-14.25%	236.65%	-122.40%

* p < 0.1, ** p < 0.05, *** p < 0.01.

Notes:

1. T-test for the mean.
2. Independent variables of Blinder-Oaxaca decomposition are based on Table 2.

Table 4A With Whom Did You Compare Your Standard of Living? (Multinomial Logit Regression. Omitted Category: 'Neighbor')

	(1) All			(2) Japan			(3) US		
	Worker Coef.	Avg. nation Coef.	Others Coef.	Worker Coef.	Avg. nation Coef.	Others Coef.	Worker Coef.	Avg. nation Coef.	Others Coef.
Country Dummy (US=0, Japan=1)	0.4876***	-0.1217**	-0.1016***						
	(0.00)	(0.06)	(0.03)						
Female Dummy	-0.2958	-0.2498***	0.3034**	-0.5360***	-0.2051***	0.4654***	0.0720***	-0.2624***	0.1616***
	(0.29)	(0.03)	(0.15)	(0.03)	(0.04)	(0.02)	(0.01)	(0.00)	(0.01)
Log of Household Income	0.4152***	-0.1414**	-0.0419	0.2771***	-0.1985	-0.1667***	0.5663***	-0.0746*	0.0459
	(0.13)	(0.06)	(0.10)	(0.08)	(0.21)	(0.03)	(0.01)	(0.04)	(0.08)
Age Group (omitted: Less than 35 y/o)									
35-60 y/o	-0.4364***	-0.2544	-0.9678***	-0.6059	-0.5262	-1.2855	-0.4489*	-0.1534	-0.8504***
	(0.05)	(0.16)	(0.19)	(0.49)	(0.60)	(0.96)	(0.24)	(0.12)	(0.25)
Above 60 y/o	-1.5023***	-0.2413	-1.3894***	-1.8817***	-0.7115	-2.0424**	-1.2575***	0.1143***	-0.8981***
	(0.28)	(0.39)	(0.54)	(0.20)	(0.44)	(0.82)	(0.21)	(0.04)	(0.12)
Education (omitted: College or above)									
Not reach high school	-0.2285**	-0.4605***	-0.3135	-0.1281	-0.6162***	-0.5204*	-0.4853	-0.2024**	0.1640
	(0.11)	(0.17)	(0.29)	(0.14)	(0.15)	(0.28)	(1.00)	(0.09)	(0.27)
High school	-0.0744**	-0.0953	0.0691	-0.0256	-0.3493***	-0.0130**	-0.0582**	0.1302	0.1319
	(0.03)	(0.24)	(0.07)	(0.08)	(0.04)	(0.01)	(0.03)	(0.13)	(0.12)
Marital status (omitted: Single)									
Have a spouse	-0.7867***	-0.4318***	-0.5023***	-0.7928	-0.5355*	-0.5461***	-0.8523***	-0.3952***	-0.5066***
	(0.03)	(0.06)	(0.01)	(0.53)	(0.29)	(0.07)	(0.25)	(0.11)	(0.05)
Others	-0.5378***	-0.2021***	-0.3012***	-0.4516**	-0.1771**	-0.3984**	-0.6923***	-0.2843***	-0.3419**
	(0.13)	(0.06)	(0.00)	(0.23)	(0.07)	(0.16)	(0.10)	(0.01)	(0.17)
Constant	-0.2471	0.1640	1.2673***	0.7640***	0.7106***	1.7802***	-0.6909***	-0.2682	0.9451***
	(0.42)	(0.48)	(0.39)	(0.10)	(0.01)	(0.67)	(0.02)	(0.29)	(0.25)
Observations	8346			4329			4017		
Pseudo R^2	0.041			0.054			0.031		

* p < 0.1, ** p < 0.05, *** p < 0.01.

Standard errors in parentheses are clustered by country for specification (1), clustered by the female dummy for specifications (2) and (3).

Note:

1. 'Others' category of reference groups including 'Classmate', 'Relative', 'Mama Friend', 'Friend' and 'Others' of Table 1.

Table 4B With Whom Did You Compare Your Standard of Living? (Multinomial Logit Regression. Omitted Category: 'Neighbor')

	(1) All			(2) Japan			(3) US		
	Worker Coef.	Avg. nation Coef.	Others Coef.	Worker Coef.	Avg. nation Coef.	Others Coef.	Worker Coef.	Avg. nation Coef.	Others Coef.
Panel A:									
Working for a Company Dummy	1.0266***	0.8459**	0.9759*	1.1130**	1.2362***	1.4451***	0.8122	0.3137	0.3419***
	(0.13)	(0.42)	(0.50)	(0.48)	(0.18)	(0.50)	(1.00)	(0.84)	(0.03)
Self-employed Dummy	-1.0297***	-0.1206	0.0897***	-1.0716*	-0.2883**	0.0759	-0.9013***	0.2198	0.1818***
	(0.06)	(0.22)	(0.03)	(0.57)	(0.12)	(0.28)	(0.06)	(0.21)	(0.01)
Employment Status (omitted: Part-time)									
Full-time	0.4493***	-0.0920***	-0.1963***	0.4659***	-0.0065	-0.1929***	0.4391***	-0.0836	-0.1217***
	(0.01)	(0.03)	(0.04)	(0.00)	(0.01)	(0.05)	(0.02)	(0.19)	(0.04)
Others	0.3530	-0.0809	-0.1195***	0.6072***	0.1116	-0.0748	-0.9193***	-0.2337***	-0.0542
	(0.37)	(0.17)	(0.01)	(0.02)	(0.07)	(0.10)	(0.21)	(0.02)	(0.27)
Observations	4713			2686			2027		
Pseudo R2	0.042			0.054			0.033		
Panel B:									
Working for a Company Dummy	1.1766***	0.4752***	0.0952	1.1486***	0.5263***	0.1848***	1.1263***	0.2864***	-0.1648
	(0.01)	(0.09)	(0.14)	(0.17)	(0.03)	(0.05)	(0.17)	(0.07)	(0.10)
Housewives/ Househusbands Dummy	-1.5086***	0.1819***	0.2804	-1.3124***	0.1216***	0.4160***	-14.6979***	0.3465**	-0.1715
	(0.31)	(0.06)	(0.20)	(0.08)	(0.04)	(0.07)	(1.21)	(0.16)	(0.25)
Retired Dummy	-0.4150	0.4351***	0.2816*	-0.1020***	0.4175***	0.2401	-1.0305***	0.2147	-0.0855
	(0.42)	(0.06)	(0.14)	(0.00)	(0.13)	(0.51)	(0.29)	(0.26)	(0.36)
Unemployed Dummy	-0.4732**	0.5389***	0.2778***	-0.3619	0.3787***	0.0822	-0.8061***	0.5121	0.1940
	(0.18)	(0.10)	(0.09)	(0.41)	(0.09)	(0.51)	(0.01)	(0.31)	(0.44)
Observations	7170			3994			3176		
Pseudo R2	0.058			0.071			0.047		

* p < 0.1, ** p < 0.05, *** p < 0.01.

Standard errors in parentheses are clustered by country for specification (1), clustered by the female dummy for specifications (2) and (3).

Note:

1. 'Others' category of reference groups including 'Classmate', 'Relative', 'Mama Friend', 'Friend' and 'Others' of Table 1.

Table 5 How Does Your Standard of Living Compare with That of the People Around You (Ordered Probit Regression)

	(1) All Coef.	(2) Japan Coef.	(3) US Coef.
Country Dummy (US=0, Japan=1)	-0.2198***		
	(0.02)		
Female Dummy	-0.0500**	-0.0645***	-0.0227***
	(0.02)	(0.01)	(0.00)
Log of Household Income	0.6908***	0.9156***	0.5479***
	(0.17)	(0.04)	(0.01)
Working for a Company Dummy	-0.0087	0.0573	-0.0780
	(0.06)	(0.13)	(0.08)
Housewives/Househusbands Dummy	0.1073	0.1907*	-0.1443***
	(0.11)	(0.11)	(0.05)
Retired Dummy	0.0982*	0.1721***	0.0520
	(0.05)	(0.06)	(0.13)
Unemployed Dummy	-0.3225***	-0.3093***	-0.3684***
	(0.03)	(0.07)	(0.02)
Age Group (omitted: Less than 35 y/o)			
35-60 y/o	-0.0814***	-0.0546***	-0.0719***
	(0.01)	(0.02)	(0.01)
Above 60 y/o	0.0609	0.2230***	-0.0676***
	(0.14)	(0.04)	(0.02)
Education (omitted: College or above)			
Not reach high school	-0.1278	-0.2232**	0.0059
	(0.10)	(0.11)	(0.13)
High school	-0.1505***	-0.2027***	-0.1247***
	(0.03)	(0.02)	(0.01)
Marital status (omitted: Single)			
Have a spouse	-0.0062	0.0668	-0.0286
	(0.04)	(0.05)	(0.05)
Others	-0.1343**	-0.0256	-0.1595***
	(0.06)	(0.27)	(0.06)
Reference Groups (omitted: Neighbor)			
Worker	-0.0155***	-0.0116	0.0034
	(0.00)	(0.02)	(0.04)
Avg. nation	0.0030	0.0243	-0.0068
	(0.02)	(0.02)	(0.03)
Others	-0.1647***	-0.1300***	-0.1766***
	(0.02)	(0.02)	(0.03)
Constant - Cut 1	-1.0294***	-0.4999***	-1.1238***
	(0.17)	(0.09)	(0.08)
Constant - Cut 2	0.2078	0.9181***	-0.0857*
	(0.35)	(0.01)	(0.05)
Constant - Cut 3	1.8393***	2.6174***	1.4898***
	(0.41)	(0.03)	(0.09)
Constant - Cut 4	3.1170***	4.2273***	2.6301***
	(0.61)	(0.06)	(0.03)
Observations	7170	3994	3176
Pseudo R^2	0.058	0.068	0.050

* p < 0.1, ** p < 0.05, *** p < 0.01.

Standard errors in parentheses are clustered by country for specification (1), clustered by the female dummy for specifications (2) and (3).

Note:

1. 'Others' category of reference groups including 'Classmate', 'Relative', 'Mama Friend', 'Friend' and 'Others' of Table 1.

Appendixes

Appendix 1 Main Questions in the Survey

Q15. How does your standard of living compare with that of the people around you? (X ONE Box)	
1	Theirs is much lower than mine
2	Theirs is somewhat lower than mine
3	Theirs is about the same as mine
4	Theirs is somewhat higher than mine
5	Theirs is much higher than mine

In Q.15, with whom did you compare your standard of living? (X ONE Box)		Abbreviation	Categories in Table 1
1	Neighbor	Neighbor	Neighbor
2	Your own classmates when you were in school	Classmate	Classmate
3	Relatives	Relative	Relative
4	Families of your children's classmates	Mama Friend	Mama Friend
5	Worker in your company who is in your age group, has similar academic background, or who started working in the same year	Worker-SA	Worker
6	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-SJ	Worker
7	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	Worker-AA	Worker
8	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	Worker-AJ	Worker
9	Average person in Japan / in the US	Avg. nation	Avg. nation
10	Average person in the world	Avg. world	Others
11	Friend of acquaintance excluding above choices	Friend	Friend
12	Others(Specify):	Others	Others
13	I don't know	I don't know	Others

Appendix 1A The Distribution of Reference Groups from 2008 to 2012

	Japan									
	2008		2009		2010		2011		2012	
	Obs.	Percent	Obs.	Percent	Obs.	Percent	Obs.	Percent	Obs.	Percent
Neighbor	1,313	48.72	2,672	43.79	2,151	40.50	1,828	37.53	1,851	40.61
Classmate	189	7.01	546	8.95	520	9.79	528	10.84	460	10.09
Relative	130	4.82	269	4.41	262	4.93	281	5.77	232	5.09
Mama Friend	186	6.90	426	6.98	415	7.81	392	8.05	362	7.94
Worker-SA	123	4.56	303	4.97	319	6.01	258	5.30	266	5.84
Worker-SJ	209	7.76	477	7.82	421	7.93	446	9.16	376	8.25
Worker-AA	29	1.08	70	1.15	59	1.11	54	1.11	40	0.88
Worker-AJ	45	1.67	101	1.66	97	1.83	78	1.60	66	1.45
Avg. nation	285	10.58	749	12.27	702	13.22	677	13.90	589	12.92
Avg. world	1	0.04	5	0.08	12	0.23	9	0.18	15	0.33
Friend	116	4.30	278	4.56	251	4.73	232	4.76	213	4.67
Others	17	0.63	43	0.70	27	0.51	25	0.51	25	0.55
I don't know	52	1.93	163	2.67	75	1.41	63	1.29	63	1.38
Total	2,695	100.00	6,102	100.00	5,311	100.00	4,871	100.00	4,558	100.00

	The Unites States									
	2008		2009		2010		2011		2012	
	Obs.	Percent	Obs.	Percent	Obs.	Percent	Obs.	Percent	Obs.	Percent
Neighbor	1,383	47.46	3,994	43.09	2,750	42.26	1,662	35.10	1,138	36.63
Classmate	99	3.40	334	3.60	219	3.37	219	4.63	102	3.28
Relative	219	7.52	758	8.18	637	9.79	611	12.90	394	12.68
Mama Friend	64	2.20	177	1.91	84	1.29	94	1.99	53	1.71
Worker-SA	146	5.01	518	5.59	362	5.56	269	5.68	185	5.95
Worker-SJ	97	3.33	368	3.97	239	3.67	189	3.99	123	3.96
Worker-AA	26	0.89	142	1.53	54	0.83	35	0.74	30	0.97
Worker-AJ	27	0.93	67	0.72	33	0.51	26	0.55	15	0.48
Avg. nation	513	17.60	1847	19.93	1206	18.53	771	16.28	517	16.64
Avg. world	56	1.92	135	1.46	98	1.51	82	1.73	44	1.42
Friend	261	8.96	776	8.37	489	7.51	514	10.86	299	9.62
Others	23	0.79	152	1.64	110	1.69	67	1.41	35	1.13
I don't know	0	0.00	0	0.00	226	3.47	196	4.14	172	5.54
Total	2,914	100.00	9,268	100.00	6,507	100.00	4,735	100.00	3,107	100.00

Note:
1. Excluding those who have no children but chose ‘Families of your children’s classmates’, and those who didn’t answer the previous question about ‘how does your standard of living compare with that of the people around you’.

Appendix 2 Descriptive Statistics

	Japan		US	
	Obs.	Percent	Obs.	Percent
Avg. Nation Dummy				
0	4,194	86.10	3,964	83.72
1	677	13.90	771	16.28
Total	4,871	100.00	4,735	100.00
Neighbor Dummy				
0	3,043	62.47	3,073	64.90
1	1,828	37.53	1,662	35.10
Total	4,871	100.00	4,735	100.00
Reference Groups in Table 4 and Table 5				
Neighbor	1,828	37.53	1,662	35.10
Worker	836	17.16	519	10.96
Avg. nation	677	13.90	771	16.28
Others	1,530	31.41	1,783	37.66
Total	4,871	100.00	4,735	100.00
How does your standard of living compare with that of the people around you? (Recoded)				
1. Theirs is much higher than mine	255	5.21	388	7.56
2. Theirs is somewhat higher than mine	1,563	31.94	1,175	22.89
3. Theirs is about the same as mine	2,552	52.15	2,725	53.08
4. Theirs is somewhat lower than mine	507	10.36	727	14.16
5. Theirs is much lower than mine	17	0.35	119	2.32
Total	4,894	100.00	5,134	100.00
Female Dummy				
0. Male	2,300	46.62	2,373	44.85
1. Female	2,634	53.38	2,918	55.15
Total	4,934	100.00	5,291	100.00
Age Group				
(0,35)	482	9.77	861	16.33
[35,60)	2,738	55.49	2,463	46.72
[60,+)	1,714	34.74	1,948	36.95
Total	4,934	100.00	5,272	100.00
Educational Attainment				
Not reach high school	489	10.04	249	4.76
High school	3,155	64.76	3,054	58.39
College or above	1,228	25.21	1,927	36.85
Total	4,872	100.00	5,230	100.00
Marital Status				
Have a spouse	3,941	80.10	3,131	60.11
Single (never married)	576	11.71	1,106	21.23
Others (currently unattached, having divorced or separated, or an unattached widow or widower)	403	8.19	972	18.66
Total	4,920	100.00	5,209	100.00
Employment Status				
Full-time	1,781	56.15	1,714	53.61
Part-time (Part-time or Student part-time)	778	24.53	1,027	32.12
Others (Temporary work, Contract worker or others)	613	19.33	456	14.26
Total	3,172	100.00	3,197	100.00
Working for a Company Dummy[1]				
0	1,297	28.82	1,145	28.04
1	3,203	71.18	2,938	71.96
Total	4,500	100.00	4,083	100.00

Appendix 2 *(Continued)*

	Japan		US	
	Obs.	Percent	Obs.	Percent
Self-employed Dummy				
0. (Employee of private company or nonprofit, Government employee, or Manager or private company or nonprofit)	2,463	79.94	2,758	86.73
1. (Self-employed or Employee of family business)	618	20.06	422	13.27
Total	3,081	100.00	3,180	100.00
Housewives/ Househusbands Dummy				
0	3,876	86.13	3,958	96.94
1	624	13.87	125	3.06
Total	4,500	100.00	4,083	100.00
Retired Dummy				
0	4,208	93.51	3,423	83.84
1	292	6.49	660	16.16
Total	4,500	100.00	4,083	100.00
Unemployed Dummy				
0	4,402	97.82	3,904	95.62
1	98	2.18	179	4.38
Total	4,500	100.00	4,083	100.00
Approximately how much was the annual earned income before taxes and with bonuses included of your entire household for 2011[2]				
Less than ¥1,000,000	97	2.19		
¥1,000,000 to less than ¥2,000,000	227	5.13		
¥2,000,000 to less than ¥4,000,000	1,114	25.20		
¥4,000,000 to less than ¥6,000,000	1,024	23.16		
¥6,000,000 to less than ¥8,000,000	872	19.72		
¥8,000,000 to less than ¥10,000,000	469	10.61		
¥10,000,000 to less than ¥12,000,000	271	6.13		
¥12,000,000 to less than ¥14,000,000	139	3.14		
¥14,000,000 to less than ¥16,000,000	93	2.10		
¥16,000,000 to less than ¥18,000,000	34	0.77		
¥18,000,000 to less than ¥20,000,000	29	0.66		
¥20,000,000 or more	52	1.18		
Total	4,421	100.00		
Less than $10,000			386	8.47
$10,000 to less than $20,000			472	10.35
$20,000 to less than $40,000			902	19.79
$40,000 to less than $60,000			734	16.10
$60,000 to less than $80,000			615	13.49
$80,000 to less than $100,000			515	11.30
$100,000 to less than $120,000			354	7.76
$120,000 to less than $140,000			207	4.54
$140,000 to less than $160,000			129	2.83
$160,000 to less than $180,000			83	1.82
$180,000 to less than $200,000			44	0.97
$200,000 or more			118	2.59
Total			4,559	100.00

Notes:

1. 'Working for a Company Dummy' equals 1 if the respondent's occupation is 'Office and administrative support', 'Sales and related occupations', 'Managerial occupations', 'Specialist/Technical Experts', 'Service occupations', or 'Industrial occupations'; equals 0 if the occupation is 'Farming, fishing, and forestry', 'Housewife/Husehusband', 'Student', 'Retired', 'Unemployed' or 'Others'.
2. Household income is taken as log in the analysis.

Appendix 3A Blinder-Oaxaca Decomposition (Linear Probability Regression. Dependent Variable: Avg. Nation Dummy)

	US - Japan comparison		
	US	Japan	Difference
Mean:	0.1616***	0.1377***	0.0239***
	(0.00)	(0.00)	(0.00)
	(1) endowments	(2) coefficients	(3) interaction
Overall:	0.0087***	0.0248***	-0.0096***
	(0.00)	(0.00)	(0.00)
Details:			
Female Dummy	-0.0005***	-0.0077***	-0.0002***
	(0.00)	(0.00)	(0.00)
Log of Household Income	0.0015***	0.0019***	-0.0001***
	(0.00)	(0.00)	(0.00)
[35,60)	-0.0023***	0.0059***	-0.0008***
	(0.00)	(0.00)	(0.00)
[60,+)	-0.0001***	0.0101***	-0.0000***
	(0.00)	(0.00)	(0.00)
Not reach high school	0.0031***	0.0022***	-0.0012***
	(0.00)	(0.00)	(0.00)
High school	0.0029***	0.0335***	-0.0036***
	(0.00)	(0.00)	(0.00)
Have a spouse	0.0023***	0.0059***	-0.0015***
	(0.00)	(0.00)	(0.00)
Other marital status	0.0019***	-0.0017***	-0.0021***
	(0.00)	(0.00)	(0.00)
Constant		-0.0253***	
		(0.00)	
Observations	8346		

	Male - Female comparison		
	Male	Female	Difference
Mean:	0.1694***	0.1314***	0.0381***
	(0.01)	(0.01)	(0.00)
	(1) endowments	(2) coefficients	(3) interaction
Overall:	-0.0047	0.0381***	0.0047
	(0.00)	(0.01)	(0.00)
Details:			
Country Dummy (US=0, Japan=1)	-0.0004**	-0.0005	-0.0000
	(0.00)	(0.01)	(0.00)
Log of Household Income	-0.0020	0.0066	0.0004
	(0.00)	(0.03)	(0.00)
[35,60)	-0.0001	0.0091**	-0.0001
	(0.00)	(0.00)	(0.00)
[60,+)	-0.0002	0.0140***	-0.0001
	(0.00)	(0.00)	(0.00)
Not reach high school	0.0001	-0.0054**	-0.0011***
	(0.00)	(0.00)	(0.00)
High school	-0.0013	-0.0260***	0.0059
	(0.00)	(0.01)	(0.00)
Have a spouse	-0.0001	-0.0066	-0.0003
	(0.00)	(0.02)	(0.00)
Other marital status	-0.0008	-0.0002	0.0001
	(0.00)	(0.00)	(0.00)
Constant		0.0470	
		(0.05)	
Observations	8346		

* p < 0.1, ** p < 0.05, *** p < 0.01.
Standard errors in parentheses are clustered by country.
Notes:
1. Independent variables of Blinder-Oaxaca decomposition are based on Table 2.

Appendix 3B Blinder-Oaxaca Decomposition (Linear Probability Regression. Dependent Variable: Neighbor Dummy)

	US - Japan comparison		
	US	Japan	Difference
Mean:	0.3480***	0.3758***	-0.0278***
	(0.00)	(0.00)	(0.00)
	(1)	(2)	(3)
	endowments	coefficients	interaction
Overall:	-0.0372***	-0.0052***	0.0146***
	(0.00)	(0.00)	(0.00)
Details:			
Female Dummy	-0.0001***	-0.0013***	-0.0000***
	(0.00)	(0.00)	(0.00)
Log of Household Income	-0.0010***	-0.0512***	0.0022***
	(0.00)	(0.00)	(0.00)
[35,60)	-0.0110***	-0.0169***	0.0022***
	(0.00)	(0.00)	(0.00)
[60,+)	-0.0006***	-0.0668***	0.0003***
	(0.00)	(0.00)	(0.00)
Not reach high school	-0.0055***	-0.0094***	0.0053***
	(0.00)	(0.00)	(0.00)
High school	-0.0015***	-0.0264***	0.0028***
	(0.00)	(0.00)	(0.00)
Have a spouse	-0.0227***	0.0032***	-0.0008***
	(0.00)	(0.00)	(0.00)
Other marital status	0.0052***	0.0021***	0.0027***
	(0.00)	(0.00)	(0.00)
Constant		0.1614***	
		(0.00)	
Observations	8346		

	Male - Female comparison		
	Male	Female	Difference
Mean:	0.3648***	0.3604***	0.0044
	(0.02)	(0.01)	(0.01)
	(1)	(2)	(3)
	endowments	coefficients	interaction
Overall:	-0.0006	0.0100***	-0.0050
	(0.01)	(0.00)	(0.00)
Details:			
Country Dummy (US=0, Japan=1)	-0.0000	-0.0011	-0.0000
	(0.00)	(0.00)	(0.00)
Log of Household Income	-0.0002	-0.0005	-0.0000
	(0.00)	(0.05)	(0.00)
[35,60)	-0.0002	0.0596**	-0.0004
	(0.00)	(0.03)	(0.00)
[60,+)	-0.0006	0.0222	-0.0002
	(0.01)	(0.02)	(0.00)
Not reach high school	0.0015***	-0.0033	-0.0007
	(0.00)	(0.00)	(0.00)
High school	0.0002	0.0088	-0.0020
	(0.00)	(0.01)	(0.00)
Have a spouse	0.0041***	-0.0211	-0.0010
	(0.00)	(0.02)	(0.00)
Other marital status	-0.0053***	0.0013	-0.0007
	(0.00)	(0.01)	(0.00)
Constant		-0.0559**	
		(0.02)	
Observations	8346		

* p < 0.1, ** p < 0.05, *** p < 0.01.
Standard errors in parentheses are clustered by country.
Notes:
1. Independent variables of Blinder-Oaxaca decomposition are based on Table 2.