

Comparative Analysis on Social Support in Japan between 1998 and 2003

SUGANO Tsuyoshi

College of Humanities and Sciences, Nihon University

ソーシャル・サポートから見る経時比較分析: NFRJ'98 と NFRJ'03

菅野 剛

(日本大学文理学部)

Social support variables of National Family Research of Japan 1998 and 2003 data (NFRJ'98 and NFRJ'03) are used in order to analyze the change of the structure of social support in Japanese society. (1) By comparisons of rates of subjective social support, families seem to be getting more important in 2003 than in 1998. (2) The relationship between social stratification such as education, household income and occupation, demographic variables such as gender and age, and social support variables are analyzed. Logistic regression analyses and regression analyses of various social support on social background variables showed that R-squares increased in 2003. (3) Comparisons of Cramer's V coefficients among social support variables in 1998 and in 2003 showed that associations of support from neighbors and from friends/colleagues decreased, whereas associations of support from family and from relatives increased. A slight shift of personal support network to more or less close family members might suggest some evidence of decrease of social integration.

Keywords: Social Integration, MTMM, and Structural Zero.

1. OBJECTIVES

Social support is essential in our daily life. Yamato and Kinoshita (2005) asserts that social support among close family members seems to be more active in recent years, from the results of analyses of increased rates of subjective social support of parents, siblings and children between 1998 and 2003. They pointed out that the destabilization of the employment and increasing social unrest in Japanese society might be the cause of activation of close family support. Based upon these arguments, comparative analysis on the structure of social support in Japanese society between 1998 and 2003 is worth research, as increase or decrease of social support among diverse social categories or social groups is theoretically and empirically related to the problem of social integration.

Social support is important both conceptually and operationally. However, the construct

of social support is vague, and it yields some difficulties on operationalization of social support construct. The concept of social network also holds similar problems. There are several dimensions in social network concept and indices: size, diversity, density, and etc. Whether measurements are constructed in subjective or objective way also makes great difference. In this paper, the focus is on a specific type of dichotomous measurement of subjective social support that is similar to position generators frequently used in social network studies. Social support measurements in this paper might be also conceived as one kind of Multi-Trait Multi-Method (MTMM) data. This yields methodologically interesting field to analyze. It is important to seek effective use of these dichotomous social support measures. There are three analyses in this paper to see the change of social integration in Japan from the view of social support. (1) Comparative analysis of rates of subjective social support in 1998 and 2003. (2) Analyses on the relationship between social background variables and social support to see to the degree of effects of social structure on social support in 1998 and 2003. (3) Comparative analysis on the association structure of social support in 1998 and 2003.

2. DATA AND VARIABLES

2-1 Data

National Family Research of Japan 1998 (NFRJ'98) data and National Family Research of Japan 2003 (NFRJ'03) data conducted by National Family Research Committee of Japan Society of Family Sociology are to be analyzed. NFRJ'98 and NFRJ'03 are national representative survey of Japanese society. Stratified multistage random sampling survey of men and women aged 28-77 years old was carried with self-administered questionnaire during January to February in 1999 for NFRJ'98, and during January to February in 2004 for NFRJ'03. The sample of NFRJ'98 was selected using the Basic Resident Register (33 spots) and Japanese electoral rolls (502 spots) for randomly selected 535 spots. The original sample size was 10,500 and the completion rate was 66.52 %, yielding 6,985 respondents for NFRJ'98 survey. The sample of NFRJ'03 was selected using the Basic Resident Register (30 spots) and Japanese electoral rolls (553 spots) for randomly selected 583 spots. The original sample size was 10,000 and the completion rate was 63 %, yielding 6,302 respondents for NFRJ'03 survey (Inaba 2000; Tanaka 2005).

2-2 Measurements of Social Support Variables

Both NFRJ'98 and NFRJ'03 measure dichotomous subjective social support variables. The questions on social support items are as follows according to NFRJ98 English Questionnaire by Inaba *et al.* (http://www.waseda.jp/assoc-nfroffice/NFRJ98_questionnaire_eng.htm).

"When you need help or person to talk to for the following situations, who or which agency do you depend upon? Please circle responses that apply. (You may circle as many as necessary.)"

(1) When you get depressed or confused with problems

- (2) When you need a quick loan (of about 300,000 yen)
- (3) When you need emergency assistance for sickness or accident
- (4) When you need personal care for situations such as being bedridden

These questions are referred to as 1) advice support, 2) financial support, 3) sickness support, and 4) care support. For each type of support, there are eight multiple answer (MA) dichotomous variables: 1) Your spouse, 2) Your parents, brothers, and/or sisters, 3) Your children, and/or their spouse, 4) Other relatives, 5) Your friends and/or colleagues, 6) Your neighbors, 7) Specialists and/or service agencies, 8) Nobody. These yield 32 dichotomous measurements in NFRJ'98. NFRJ'03 measurements are similar to that of NFRJ'98, but there are some differences. The question (3) is modified as follows:

- (3) When you or your family need emergency assistance for sickness or accident

Multiple answer categories are modified as follows: 1) Your spouse, 2) Your parents, 3) Your spouse's parents, 4) Your brothers, and/or sisters, 5) Your spouse's brothers, and/or sisters, 6) Your children, 7) Your children's spouse, 8) Other relatives, 9) Your friends and/or colleagues, 10) Your neighbors, 11) Specialists and/or service agencies, 12) Nobody. These yield 48 measurements in NFRJ'03.

There are several important differences in measurements between NFRJ'98 and NFRJ'03. (1) NFRJ'03 measures sickness support for both the respondent and family members. (2) 7+1 categories on support sources in NFRJ'98 are changed to more detailed 11+1 categories in NFRJ'03. For the comparative analyses of 1998 and 2003, several detailed variables are combined into one dichotomous variable in 2003 data: parents, siblings, spouse's parents, and spouse's siblings as one dichotomous variable, children and children's spouse as one dichotomous variable. Both original 11 variables and/or combined 8 variables in NFRJ'03 will be used in the following analyses.

2-3 Sums of Social Support Variables

Three types of scales of social support are calculated by sum of dichotomous variables: (1) *Source diversity* of advice support, financial support, sickness support, and care support. Theoretical maximum ranges of these four scales should be from 0 to 7 in 1998, and from 0 to 11 in 2003. (2) *Support multiplexity* of each source of person or agency, such as of spouse, of parents and/or siblings, and of etc. Theoretical maximum ranges of these multiplexities are from 0 to 4. (3) *Amount of social support*, sum of all support items. Although these three types of sums hold some conceptual and operational limitations and problems, these scales are used for tentative analyses in this paper.

2-4 Social Background Variables

Logistic regression analysis of each social support variable, and regression analysis of sum of social support variables on social background variables: gender, age, education, household income and occupation as basic social background variables, are to be conducted.

Gender: Gender is important in social support because of social structure and socialized

role.

Age: Age is a very important variable in social support not only as direct and intrinsic effect of age itself, but also as life stage effect: Younger people tend to depend on their parents, whereas elder people tend to depend on their children. In order to grasp the non-linear effect of age especially at elderly person, we made four dummy variables to see the effect of five level of respondent's age group: 28-39, 40-49, 50-59, 60-69, and 70-77.

Educational Attainment: Education is important for social support. Educational categories are recoded into years of educational attainment. Respondents' education is asked as follows: "What school did you attend last (whether or not you graduated)?"

1. Junior high school under the new system, or elementary school and its equivalents under the old system (Jinjo ka, Koutou ka, Kokumin shougakkou, and Seinen gakkou)
2. High school under the new system, or junior high school and its equivalents under the old system (Chuugakkou, Koutou jogakkou, Jitsugyou koukou, and Shihan gakkou)
3. Vocational school (Kakusyu senmon gakkou) for high school graduates under the new system
4. Junior college and technical college, or high school and its equivalents under the old system (Koukou, Senmon gakkou, and Koutou shihan gakkou)
5. Four-year university or post-graduate education
6. Other (Specify)

Household Income: Household income also is important for social support as economical resource and support in modern social division of labor system. Household income would matters especially in relation to getting aid from professionals/service agencies.

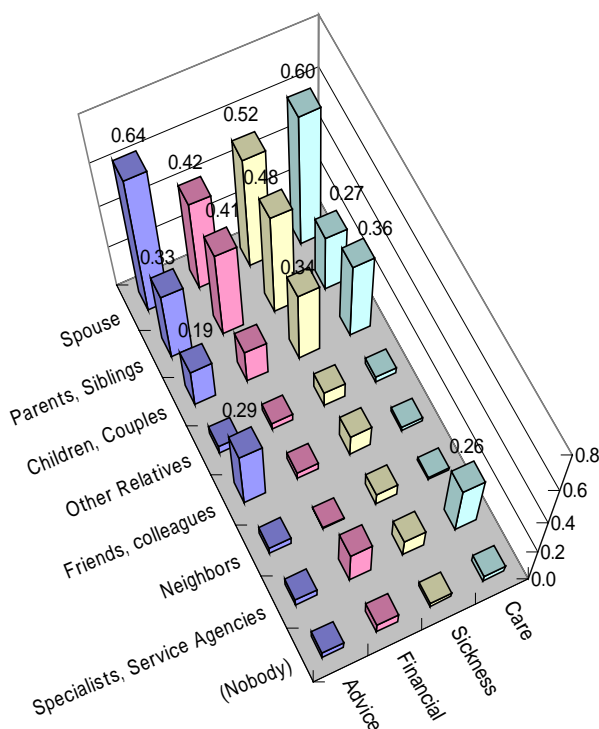


Figure 1: Rates of Expected Support, 1998 Whole Sample

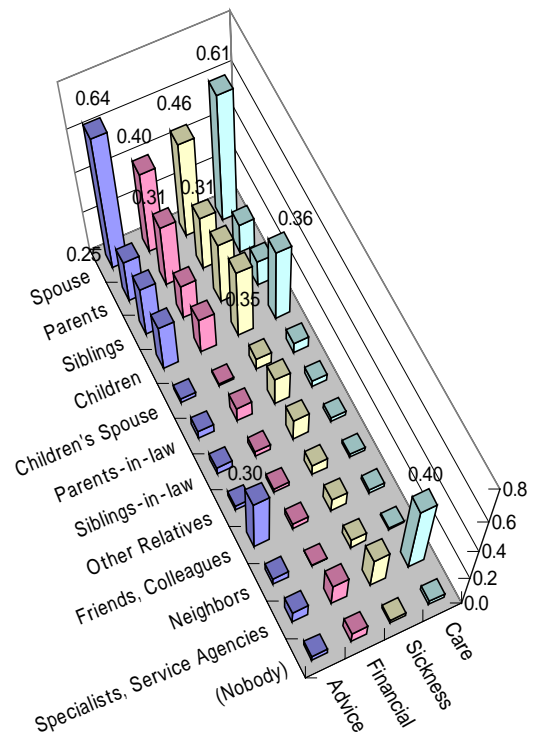


Figure 2: Rates of Expected Support, 2003 Whole Sample

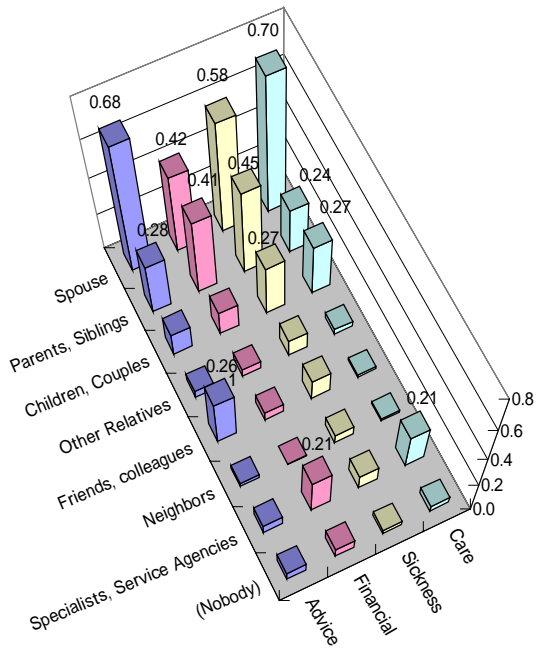


Figure 3: Rates of Expected Support, 1998 Men

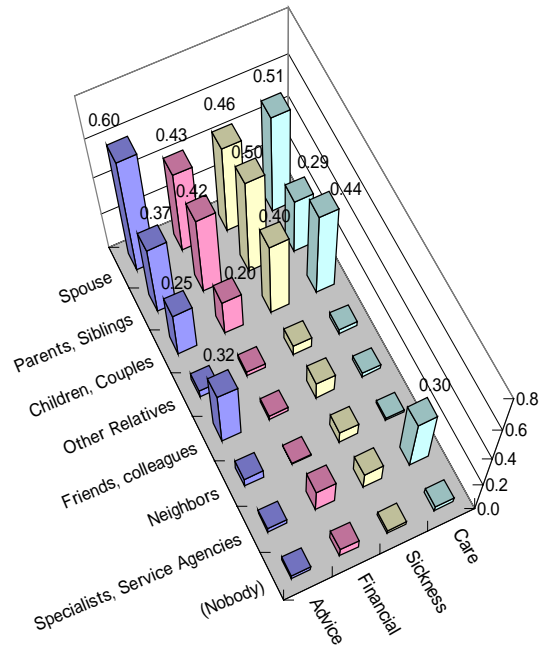


Figure 4: Rates of Expected Support, 1998 Women

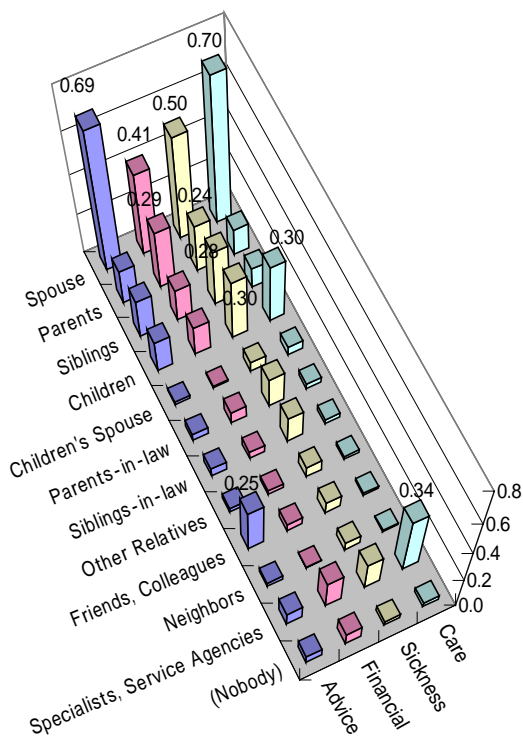


Figure 5: Rates of Expected Support, 2003 Men

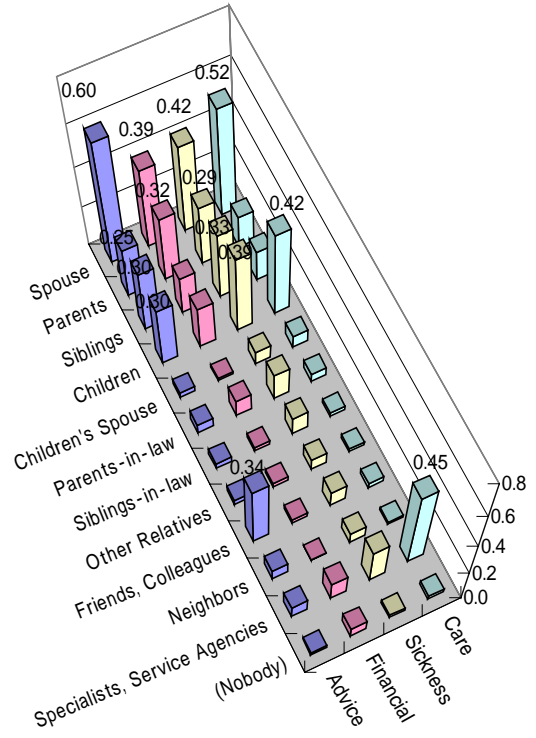


Figure 6: Rates of Expected Support, 2003 Women

Occupation: Respondents' occupations are measured as 6 categories: 1. professional or technical, 2. administrative, 3. office work or business, 4. retail or service, 5. skill, physical, or manual work, 6 agriculture, forestry, or fishing. By recoding variables, we use three dummy variables to see the effects of four categories of occupations: 1. professional / administrative, 2. clerical / sales, 3. blue-collar / agriculture, 4. the unemployed.

3. RATES OF EXPECTED SOCIAL SUPPORT

3-1 Expected Social Support in Whole Sample

Analyses on rates of expected social support in 1998 and 2003 are shown in Figure 1 and 2. The overall distribution patterns of subjective availability of social support are similar between 1998 and 2003. Spouse, parents and/or siblings, and children and/or children's spouse are important as social support, and support from other source categories is not so expected. Spouse is the most expected as latent resource, with rates ranging from 0.40 to 0.64 in 1998, and from 0.40 to 0.64 in 2003. Parents and siblings also are very important. Children and children's spouses are also important with rates ranging from around 0.2 to 0.36. Spouse, parents and siblings and children, namely family of procreation and family of orientation, are shown to be quite important as a core support system for the individuals. Other relatives, parents-in-law, siblings-in-law, and neighbors are not so highly expected as subjectively available resource. On the other hand, friends and colleagues are especially important in advisory and emotional support, with rates of 0.29 in 1998, and 0.30 in 2003 respectively. Professionals and/or service agencies are perceived as important for care support, and are getting more important (0.26 in 1998, 0.40 in 2003). Yamato and Kinoshita (2005) pointed out the start of Japanese public-care insurance system since 2000 was one of the reasons for this change. They also showed rates of expected support of parents and/or siblings, and of children and/or children's spouse increased in 2003. Rates of support of advice, financial, sickness, and care from parents and/or siblings are 0.33, 0.41, 0.48, 0.27 in 1998 (Figure 1), and 0.40, 0.48, 0.55, 0.25 in 2003 respectively (combined values are not shown in Figure 2). Rates of support from children and/or children's spouse are 0.19, 0.16, 0.34, 0.36 in 1998 (Figure 1), and 0.24, 0.19, 0.36, 0.37 in 2003 (combined values are not shown in Figure 2).

3-2 Expected Social Support by Men and Women

There are several gender differences, but the overall similar patterns are seen in Figure 3-6: spouse, parents/siblings, children/children's spouse are especially important for social support in advice, financial, sickness, and care. Men's expected support from their spouse is higher than women's expected support from their spouse (Figure 3, 4). Rates of expected supports for men and women are 0.68 and 0.60 for advice, 0.42 and 0.43 for financial, 0.58 and 0.46 for sickness, 0.70 and 0.51 for care in 1998 (Sugano 2001). These gender differences are similar in 2003 (Figure 5, 6). Women's expected support from their parents and siblings is higher than men's expected support from their parents and siblings. Rates

of expected support for men and women are 0.28 and 0.37 for advice, 0.41 and 0.42 for financial, 0.45 and 0.50 for sickness, 0.24 and 0.29 for care in 1998 (Figure 3, 4). Expected support of women from their children and children's couples is higher than men's expected support from their children and children's couples. Rates of expected support for men and women are 0.12 and 0.25 for advice, 0.13 and 0.20 for financial, 0.27 and 0.40 for sickness, 0.27 and 0.44 for care in 1998 (Figure 3, 4). These gender tendencies are also similar in 2003 (Figure 5, 6). There exist several changes from 1998 to 2003. Men's expected support on sickness from spouse decreased from 0.58 to 0.50. Men's expected support for care from specialists, service agencies increased from 0.21 to 0.34. Women's expected support for care from specialists, service agencies increased from 0.30 to 0.45.

4. SOCIAL DETERMINANTS OF SOCIAL SUPPORT

4-1 Logistic Regression Analyses of Social Support on Social Background Variables

The problem of social support is sometimes perceived as individual and private matter. However, social structure such as social stratification and various social background variables affects individual's social environment and personal social support. Therefore it is important to analyze the degree of determination of social background variables on social support.

Every social support item was analyzed as dependent variable (32 dichotomous variables for 1998, 48 dichotomous variables for 2003) with the same set of independent variables (gender, age, education, household income, and occupation). The pseudo R-squares of results of conducted 80 logistic regression analyses are shown in Figure 7 for 1998 and in Figure 8 for 2003.

Pseudo R-squares of expected support from children are impressive with high value ranging from 0.13 to 0.23 in 1998, and from 0.20 to 0.24 in 2003. Expected support from parents also is highly determined by social background variables with high pseudo R-square around 0.20 in 1998, and around 0.2-0.3 in 2003. Detailed analyses are omitted here, but respondent's age was the most important and strongest variable consistently in logistic regression analyses, whereas other social background variables showed relatively weak effects.

As for other models, pseudo R-squares of advice support from friends and/or colleagues are plausible. However, pseudo R-squares of friends and/or colleagues are slightly decreasing; 0.18 for all, 0.16 for men, 0.20 for women in 1998, and 0.14 for all, 0.13 for men, 0.15 for women in 2003.

Pseudo R-squares of models of spouse are quite small. This shows respondents expect their spouse as most important social support resource, but social background of respondents has nothing to do with the expectation of support from spouses. Other R-squares are very low, which requires other independent variables or application of other method.

It is clear that R-squares of some models tend to be greater in 2003; this might be partially due to more detailed measurements used in NFRJ'03, with smaller divided social categories.

4-2 Regression Analyses of Sum of Social Support on Social Background Variables

Regression analysis of sum of support for each kind of support (source diversity), of sum of sources for each source (support multiplexity for each source of person or agency), and of total amount of social support items, on social background variables such as gender, age, education, household income and occupation, are conducted with whole sample, men, and women in 1998 and 2003 (Figure 7 to 12).

R-square of source diversity is also very low. R-squares are high in regression models on support multiplexity of children and/or children's spouse and of parents and/or siblings. R-squares of support multiplexity of children and/or children's spouse are 0.26 for 1998 and 0.43 for 2003, and of parents and/or siblings are 0.26 for 1998 and 0.29 for 2003 in whole sample. R-squares of regression analyses of support multiplexity from children and/or children's spouse are 0.22 for men and 0.26 for women in 1998, and 0.38 for men and 0.47 for women in 2003. R-squares of analyses of support multiplexity of parents and/or siblings are 0.19 for men and 0.28 for women, and 0.26 for men and 0.30 for women in 2003.

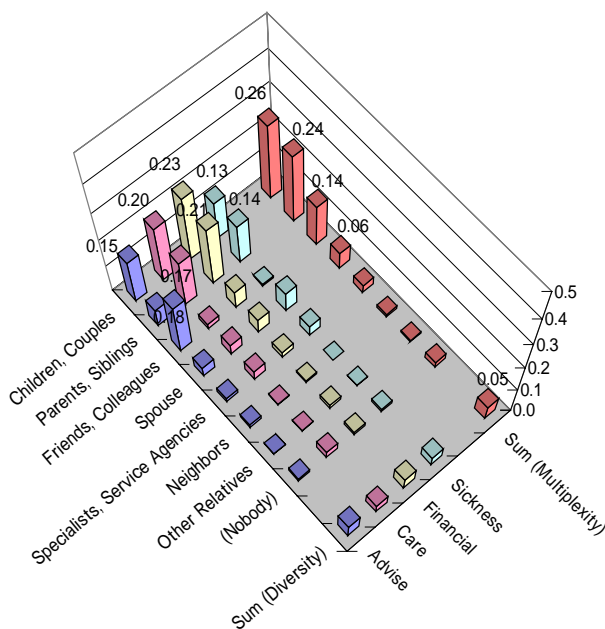


Figure 7: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Gender, Age, Education, Household Income and Occupation, 1998 Whole

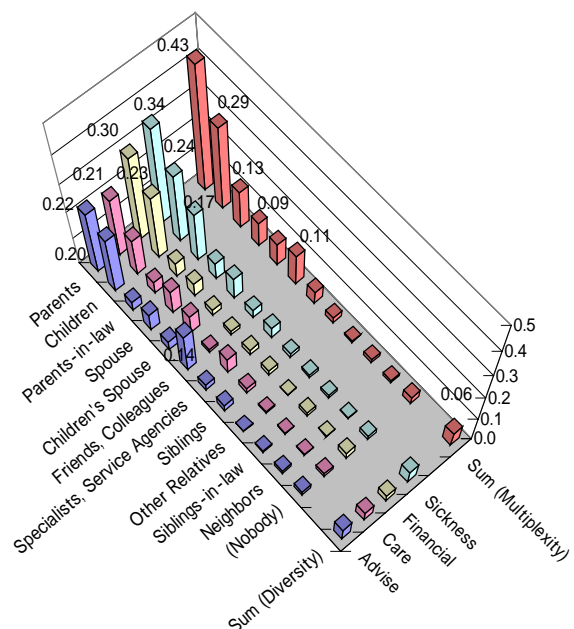


Figure 8: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Gender, Age, Education, Household Income and Occupation, 2003 Whole

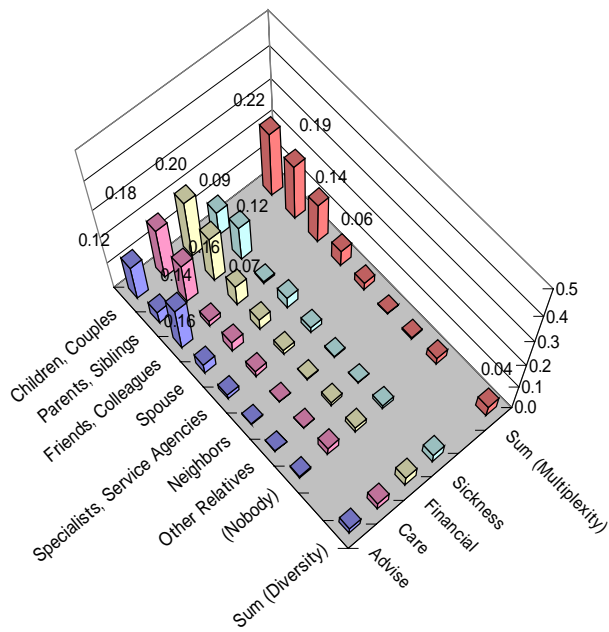


Figure 9: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Age, Education, Household Income and Occupation, 1998 Men

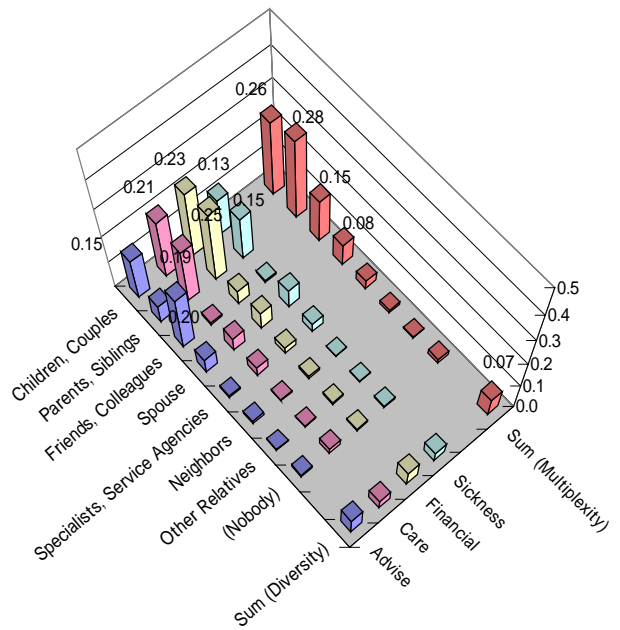


Figure 10: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Age, Education, Household Income and Occupation, 1998 Women

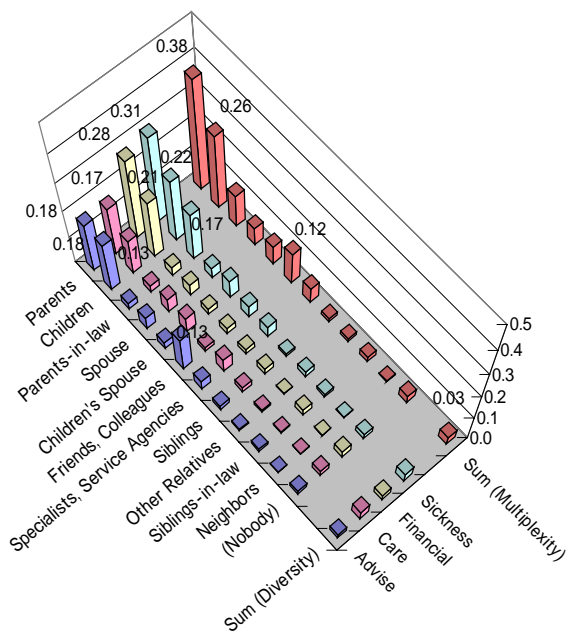


Figure 11: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Age, Education, Household Income and Occupation, 2003 Men

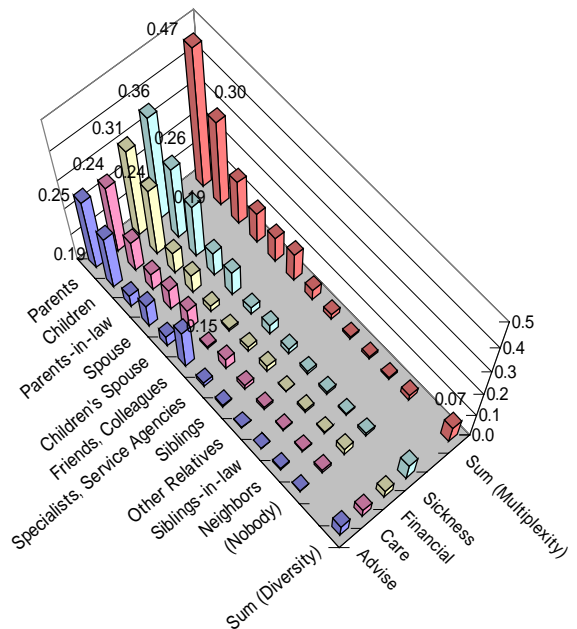


Figure 12: R-squares of Regression Analyses and Pseudo R-squares of Logistic Regression Analyses of Social Support on Age, Education, Household Income and Occupation, 2003 Women

Source multiplexities of other social categories are not determined by social background variables. These results show that percentages of explained variance of regression models by age, education, household income and occupation increased in 2003. Higher R-square in 2003 might be partially due to modified detailed measurements in NFRJ'03. But, if the increase or decrease of size of effect of social structure is true, it is very interesting.

As for the total amount of social support, R-squares are quite low; 0.05 for all, 0.04 for men, 0.07 for women in 1998, and 0.06 for all, 0.07 for women and 0.07 for men in 2003.

5. ASSOCIATION AMONG SOCIAL SUPPORT VARIABLES

5-1 Overall Patterns and Some Gender Differences

In order to analyze associations among social support of men and women, Cramer's V coefficients are calculated in Figure 13 and 14 for 1998, and in Figure 15 and 16 for 2003. Positive values show positive relationship between social support variables, with higher in the value, the stronger in the association. It is clearly seen in diagonals that associations among the same support sources are quite strong: e.g. six associations of one and any other kind of support from spouse are strong (from 0.41 to 0.68, values are not shown) in Figure 13. It is also seen that signs of associations tend to be the same in associations within each support source: e.g. sixteen associations among support from parents/siblings and from spouse are all negative (from -0.21 to -0.03, values are not shown) in Figure 13. These characteristics are commonly seen in MTMM data. However, some social support variables along life-stages are in the relation of trade-off each other, which is not typical in MTMM data. For example, associations between support from parents and from children are negative.

As seen in the figures, overall patterns of associations are somewhat similar between men and women. However, there are some gender differences consistently seen in both of 1998 and 2003 as follows. Associations among support from spouse and parents/siblings tend to be negative in men (from -0.21 to -0.03 in 1998, from -0.21 to 0.09 in 2003), and are both positive and negative in women (from -0.20 to 0.13 in 1998, from -0.24 to 0.15 in 2003). Men's dependence on their spouses makes withdrawal of support from their parents/siblings, but not necessarily in women. Associations among support from spouse and children/couples tend to be positive in men (from -0.06 to 0.13 in 1998, from -0.04 to 0.12 in 2003), and are both negative and positive in women (from -0.19 to 0.02 in 1998, from -0.13 to 0.12 in 2003).

Associations among support from spouse and friends/colleagues are negative in men (from -0.18 to -0.01 in 1998, from -0.14 to 0.01 in 2003), and tend to be negative in women (from -0.13 to 0.07 in 1998, from -0.10 to 0.05 in 2003). Men's dependence on their spouses decreases support from their friends/colleagues, while this is not always the case in women.

Associations among support from children/couples and other relatives are stronger in men than in women (from -0.02 to 0.12 for men, from -0.01 to 0.08 for women in 1998, from 0.04 to 0.17 for men, from -0.01 to 0.09 for women in 2003). Similarly, associations among support from children/couples and neighbors show slightly positive relationship in men, but no in

women (from -0.02 to 0.12 for men, from -0.00 to 0.08 for women in 1998, from 0.01 to 0.09 for men, from -0.03 to 0.06 for women in 2003). Associations among support from spouse and neighbors are negligible in men (from -0.01 to 0.04 in 1998, from -0.04 to 0.03 in 2003), and in women (from -0.01 to 0.11 in 1998, from -0.01 to 0.06 in 2003).

Associations among support from professionals/service agencies and other relatives tend to be positive in men (from -0.01 to 0.12 in 1998, from -0.02 to 0.09 in 2003), and negligible in women (from 0.00 to 0.07 in 1998, from -0.04 to 0.11 in 2003). Positive associations among support from professionals/service agencies and from neighbors decreased in men (from -0.02 to 0.17 in 1998, from -0.02 to 0.09 in 2003), and increased in women (from -0.02 to 0.11 in 1998, from 0.00 to 0.15 in 2003). Positive associations among support from professionals/service agencies and children/couples increased in men (from -0.12 to 0.11 in 1998, from -0.08 to 0.16 in 2003, both with one exception of negative correlation between professionals/service agencies' and children' financial support), and also in women (from -0.14 to 0.06 in 1998, from -0.09 to 0.11 in 2003).

5-2 Increase and Decrease of Association of Support between 1998 and 2003

Although overall patterns of figures are more or less similar among 1998 and 2003, there are some increase and decrease in Cramer's V coefficients. Associations of other relatives with spouse increased in both men and in women (four of the largest increases are +0.06, +0.06, +0.05, +0.05 for men, +0.06, +0.06, +0.06, +0.06 for women), and associations among other relatives and children/couples increased in men (four of the largest increases are +0.09, +0.08, +0.07, +0.07). Associations of other relatives with parents/siblings increased in both men and in women (four of the largest increases are +0.18, +0.15, +0.15, +0.14 for men, +0.12, +0.09, +0.08, +0.07 for women). Associations among children/couples and professionals/service agencies slightly increased in men (four of the largest increases are +0.14, +0.09, +0.07, +0.05). It seems that support networks of spouse, parents/siblings, children/couples, and other relatives are formed more closely.

Associations among friends/colleagues and parents/siblings decreased both in men and in women (four of the largest decreases are -0.06, -0.06, -0.06, -0.05 for men, -0.11, -0.09, -0.09, -0.07 for women).

Associations among friends/colleagues and other relatives decreased in men (four of the largest decreases are -0.08, -0.06, -0.06, -0.06). These decreases might suggest that relative decline of importance of friendship in a personal support networks.

Associations of neighbors with children/couples decreased in both men and in women (four of the largest decreases are -0.08, -0.07, -0.07, -0.06 for men, -0.09, -0.07, -0.06, -0.04 for women). Associations among neighbors and professionals/service agencies slightly decreased in men (four of the largest decreases are -0.09, -0.08, -0.06, -0.06). Associations of neighbors with friends/colleagues decreased in women (four of the largest decreases are -0.10, -0.09, -0.09, -0.06). Associations of neighbors with spouse decreased in women (four decreases are -0.06, -0.05, -0.05, -0.04). Associations of neighbors with parents/siblings

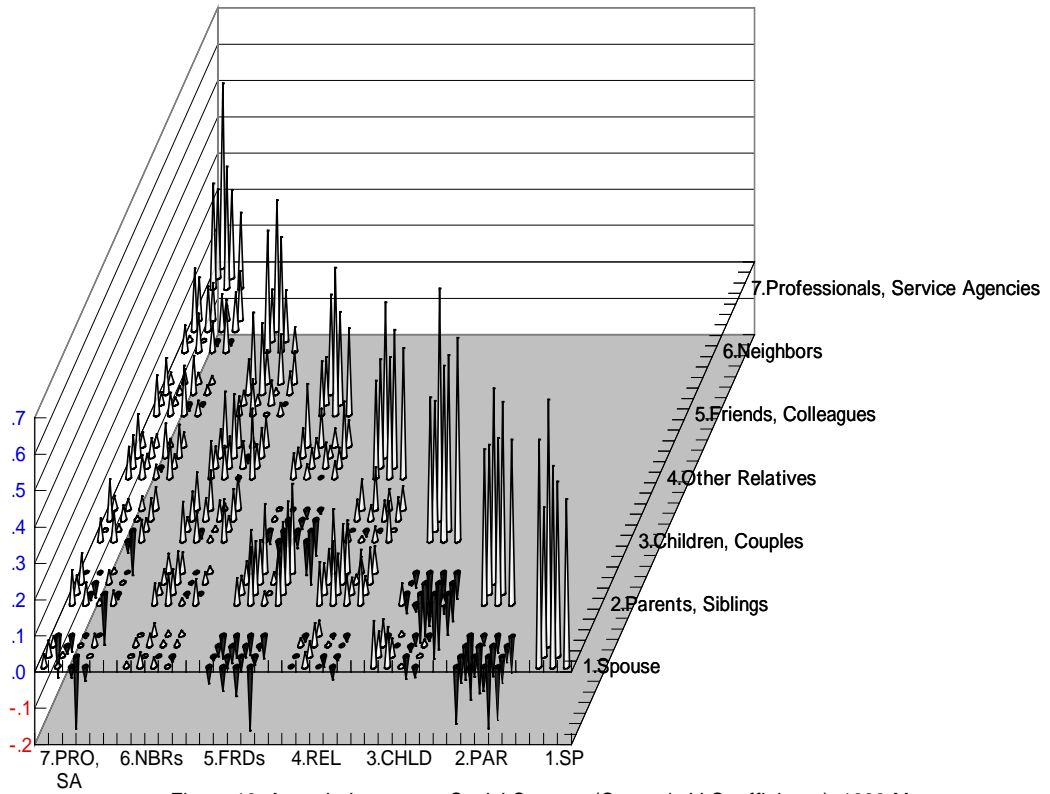


Figure 13: Association among Social Support (Cramer's V Coefficients), 1998 Men

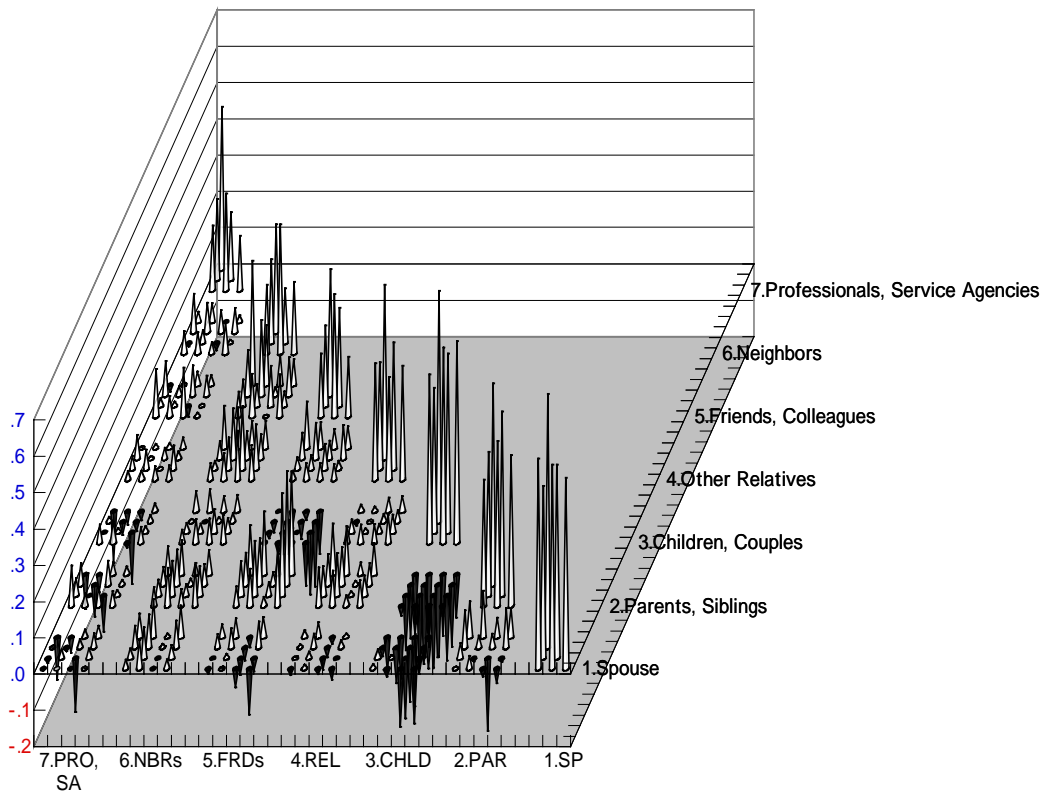


Figure 14: Association among Social Support (Cramer's V Coefficients), 1998 Women

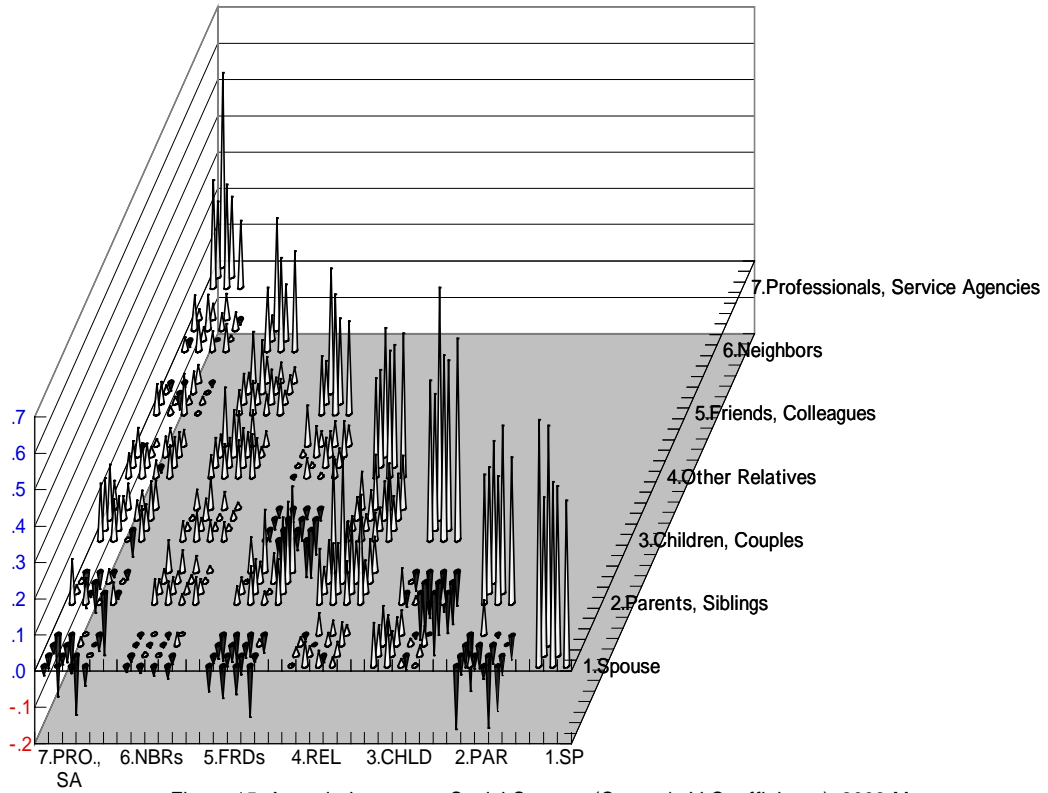


Figure 15: Association among Social Support (Cramer's V Coefficients), 2003 Men

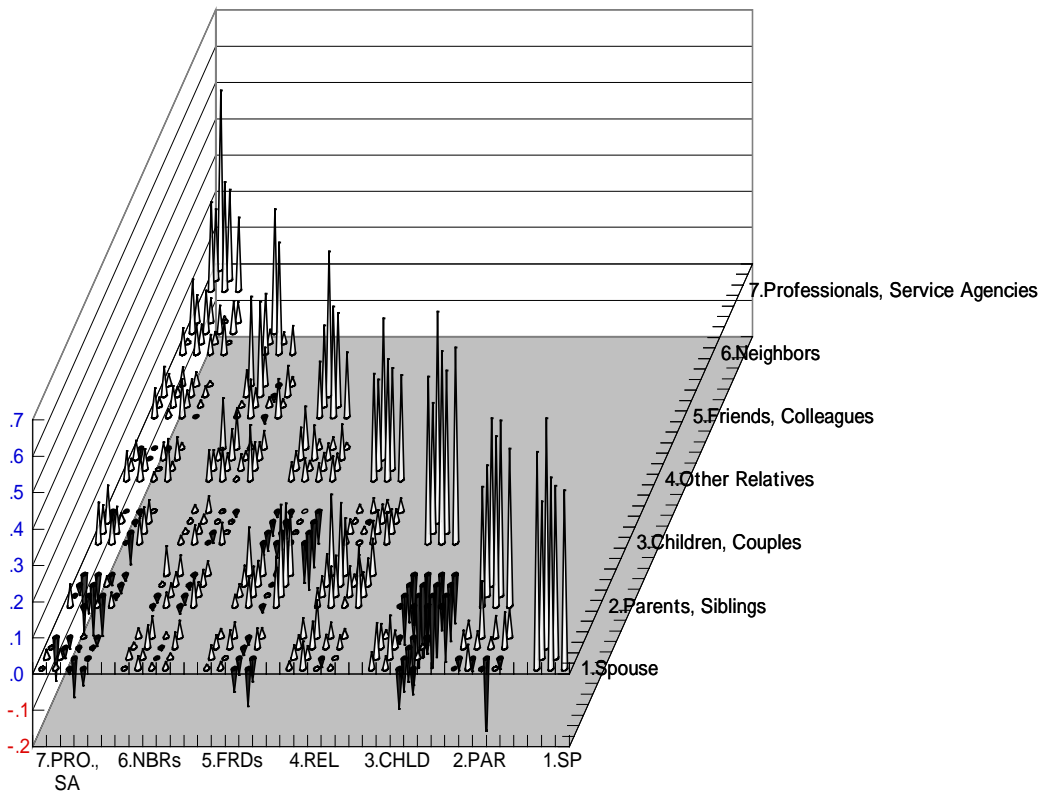


Figure 16: Association among Social Support (Cramer's V Coefficients), 2003 Women

decreased in women (four decreases are -0.07, -0.07, -0.06, -0.06). Because subjective social support from neighbors is not diminishing as seen in the previous analyses of rates, it seems that social support from neighbors is losing connection with support from spouse, parents/siblings, children/couples, and friends/colleagues.

6. CONCLUSION AND DISCUSSION

6-1 Social Support and Social Integration in Japanese Society

Rates of expected support from various sources showed people are more and more dependent on their spouse, parents and/or siblings, children and/or children's spouse, both in men and women, while rates of expected support from friends and/or colleagues and neighbors do not increase.

Logistic regression analyses on dichotomous social support variables and regression analyses on sum of social support variables showed (1) age has the largest effect, (2) R-squares are higher in women, (3) R-squares are increasing in 2003. Peoples' core social support seems to be more and more determined by social structure, namely gender, age, education, household income, and occupation.

From the results of analyses on association among social support variables, there are some tendencies of correlation structure in social support in recent Japanese society. (1) The degree of associations of support from neighbor and friends/colleagues is decreasing. (2) The degree of associations of family and other relatives seems to be increasing. These might suggest the emergence of rather closed relationship in social support. These findings lead us to rethink about social integration, as Japanese society is thought as quite socially integrated.

6-2 Limitations of Analyses

However the results should be understood cautiously because the degree of correlations among social support variables are dependent on how detailed they are measured (seven items for 1998, eleven items for 2003), and on the way how dichotomous variables are combined for the purpose of comparison between 1998 and 2003. For example "parents and/or siblings" in 1998 might mean (1) "parents" and/or "siblings", (2) "parents", "siblings" and/or "parents-in-law", or (3) "parents", "siblings", "parents-in-law" and/or "siblings-in-law" in 2003. Thus far we applied most inclusive category (3) for tentative analysis. Another limitation is slight difference of wordings of questionnaires on sickness support in 1998 and 2003.

Other important limitation of the measurements is its subjectivity and objectivity. Subjectively expected social support does not always mean its availability in real social world. For example, there are 536 respondents who never get married yet in 2003 data. Although the size is very little, 9 to 25 out of 536 respondents who never get married expect subjective social support from "spouse."

Table 1: Association between Support of Spouse: 2003 Whole Sample

	Advice	Financial	Sickness	Care
Advice				
Financial	0.48			
Sickness	0.52	0.47		
Care	0.64	0.43	0.62	

N=6189

Values shown are Cramer's V coefficients.

Table 2: Association between Support of Spouse: 2003 Divided Sample

	Advice	Financial	Sickness	Care
Advice		0.75	0.84	0.63
Financial	0.32		0.77	0.58
Sickness	0.35	0.36		0.65
Care	0.43	0.27	0.50	

Upper triangular matrix: respondents WITHOUT spouse, N=1164

Lower triangular matrix: respondents WITH spouse, N=5023

Values shown are Cramer's V coefficients.

6-3 The Problem of Structural Zero

There is another serious problem in measuring social support. There are 1,190 respondents who do not have their spouse in 2003 data, who automatically lack social support from their spouse. Having spouse is a very important factor because it correlates with existence of parents-in-law, children, children's spouse, siblings-in-law and other relatives that are important as social support resources.

Ishihara (2000) pointed out the problem of confusion of lack of social support, and of non-existence of focal person or source. Sugano (2001) pointed out and showed that these structural zeros make correlations among social support variables spuriously greater. Table 1 shows calculation of Cramer's V coefficients among social support for whole sample, and Table 2 shows associations of two sub samples: respondents with spouse, and respondents without spouse. It is clear that Cramer's V coefficients are exaggerated in the sample of respondents without spouse. The calculation of upper triangular matrix is actually impossible if all respondents without spouse do not expect any social support from their "spouse." However some respondents do expect subjective social support from their non-existent spouse as described above. Similar problem occurs on parents, parents-in-law, siblings, and etc., but in our analyses, structural zero with spouse turned out to be the most influential case (results are omitted). These limitations and problems should be overcome by further development of research.

Bibliography

- Inaba,A. , 2000, "Sampuringu to Deta no Kihon Tokusei," (in Japanese) National Family Research Committee of Japan Society of Family Sociology (Ed.), *National Family Research of Japan 1998 (NFR 98) No.1*, pp. 10-17.
- Inaba,A., K.Hirao, K.Masaoka, J.Nishimura, S.Tanaka and Y.Kamo. NFRJ'98 English Questionnaire(http://www.waseda.jp/assoc-nfroffice/NFRJ98_questionnaire_eng.htm).
- Ishihara,K. , 2000, "Shinzoku Naigai no Enjo kankei," (in Japanese) National Family Research Committee of Japan Society of Family Sociology (Ed.), *National Family Research of Japan 1998 (NFR 98) No.1*, pp.93-100.
- National Family Research Committee of Japan Society of Family Sociology 2003, *National Family Research of Japan 2003 (NFRJ'03) Codebook*.
- Sugano,T., 2001, "Shakai kaiso to Sosharu Sapoto no Kanren ni tsuite no Bunseki," (The relationship between Social Stratification and Social Support, in Japanese) in Ishihara,K. and T.Okubo (Eds.) *National Family Research of Japan 1998 (NFR 98) No.2-6*, pp.10-17, National Family Research Committee of Japan Society of Family Sociology.
- Tanaka,S.,2005, "Sampuringu to Deta no Kihon Tokusei," (in Japanese) in National Family Research Committee of Japan Society of Family Sociology (Ed.), *Dai 2 kai Kazoku ni tsuite no Zenkoku Chosa (NFRJ03)*,pp.23-36
- Yamato,R. and E.Kinoshita, 2005, "Enjo nettowaku to Kaigo," (in Japanese) in National Family Research Committee of Japan Society of Family Sociology (Ed.), *Dai 2 kai Kazoku ni tsuite no Zenkoku Chosa (NFRJ03)*,pp.157-173.

Acknowledgement: The author would like to thank the Social Science Japan Data Archive (SSJDA), the Institute of Social Science, University of Tokyo for data access of National Family Research of Japan 1998 (NFRJ'98) conducted by National Family Research Committee of Japan Society of Family Sociology. I am also grateful for helpful comments from Professor Akihide Inaba on first draft of this paper.