

## Influence of the Relationship between Social Support and Independent-Construal of Self on Depression and Anxiety among Japanese Workers

Yukihiko Takagishi<sup>1\*</sup>, Masatsugu Sakata<sup>2</sup>, Fumiko Ueda<sup>3</sup> and Toshinori Kitamura<sup>4</sup>

<sup>1</sup>Kumamoto University Health Care Center, Japan

<sup>2</sup>Yoshida Hospital, Japan

<sup>3</sup>Kumamoto City Child Consultation Center, Japan

<sup>4</sup>Kitamura Mental Health Institute, Japan

### Abstract

**Background:** Independent-interdependent self-construal is one of the constructs related to self-definition. Independent self-construal is defined as having clear boundaries between self and others and giving greater weight to personal goals as opposed to group goals; interpersonal self-construal, on the other hand, refers to maintaining harmonious, cooperative relationships with others. Previous research has shown that self-construals are related to mental health issues.

**Methods:** A set of questionnaires measuring self-construal, social support, depression, and anxiety was collected from 532 people working at two different workplaces to examine the relationship between self-construals and social support. The structural equation model (SEM) was used to examine the relationship between the variables in high and low social support groups.

**Results and Conclusion:** The result of the SEM suggests that independent self-construal mitigated depression and anxiety in the group with more social support. However, there was no reduction effect on depression and anxiety in the group with less social support. In addition, the older the worker, the less likely they were to have anxiety symptoms when in the group with more social support. Self-construal and social support have effects on psychological symptoms via interactions between the two and that the combination of high social support and independent self-construal is a contributing factor for mitigating depression and anxiety.

**Keywords:** Self-Construal; Social Support; Depression And Anxiety; Workplace In Japan

### Introduction

#### Self-construal and occupational stress

Workers' depression and anxiety result from the process of adaptation to workplace structure. It is often caused by workers' perception about their role in the workplace and includes role conflict and role ambiguity [1]. A person's cognition of his or her role in the workplace arises not only from the job title and interpersonal relationship patterns, but also from the feeling of separateness and relation to others. One way to conceptualize self-cognition is to view oneself separated from others or connected to others. This construct is called self-construal which consists of independent self-construal and interdependent self-construal [2]. The former refers to the self separated from others as individuals find their own uniqueness, identify those behaviors that make them stand out, and develop personal skills or attributes that few people share. This process serves as a way to enhance self-esteem and self-evaluation and is typically seen in Western cultures where an independent mind and lifestyle are culturally fostered. The latter refers to the self connected to others as individuals attempt to maintain harmonious, cooperative relationships with others [2]. That is, the definition of the self from the view point of interdependent self-construal varies in any given situations or others present at the time. They also perceive themselves as an important part of social relationships and expect others to see them in the same way. Therefore, people with interdependent self-construal emphasize group goals and cooperative behavior rather than individual success, and their principal goals are to develop self-defining relationships and to maintain close connections with others they are close to. This type of self-construal is commonly seen in Asian cultures [3]. Self-construal has an impact not

only on individuals' cognition but also on the motives of their behavior with corresponding consequences [4-6].

Both independent and interdependent self-construals can coexist within one individual [7,8], and the extent to which individuals prioritize one over the other is relatively consistent throughout time, and it characterizes who they are [9,10]. People who put higher priority on independent self-construal tend to use direct coping strategies that result in the reduction of depression and anxiety [11]. Similarly, Diener et al. reported the correlation between independent tendency and subjective well-being [12]. Additionally, several researchers found indirect influences of independent and interdependent self-construal on outcomes such as depression and happiness in a positive way [13,14]. In light of these literatures, independent self-construal may have positive effects on psychological symptoms including depression and anxiety at least. However, it is obvious that one's self-construal is not only one factor that explains one's mental health as there are also other contributing factors such as group dynamics and office atmosphere which could influence one's cognition [15].

**\*Corresponding author:** Yukihiko Takagishi, Health Care Center, Kumamoto University, 2-40-1 Kurokami, Kumamoto, Japan 860-0862, Tel: +81-96-342-2164; Fax: +81-96-342-2164; E-mail: [takagishi@h9.dion.ne.jp](mailto:takagishi@h9.dion.ne.jp)

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## Self-construal and social support

Social support is one of the most important concepts when dealing with workers' depression and anxiety. It refers to psychological or other support given by others to a person in a stressful situation. Social support has diverse meanings and different measures have been developed for each meaning. It is mainly categorized into two types: structural support and functional support. Structural support is conceptualized as the quality of a social relationship. Functional support refers to the content of the support one receives from others [16]. Both types of support have been determined to result in positive effects on health through distinct mechanisms [17-19]. Since structural support is mainly associated with one's whole social relationships and this study examines at the workplace, we have focused on functional support.

Perceived support is a type of the functional support and refers to a person's perception of support available from family, friends or co-workers when necessary. The perceived support has been confirmed to have buffer effect on stress response [20]. It is assumed that the perceived support would alter one's cognitive evaluation on the stressors which the person is experiencing and would exert its effect under highly stressful situations [17,21]. On the other hand, received support, which is also classified into the functional support, may lead to feelings of burden, frustration, and even guilt [22,23]. However, recently, several literatures have revealed there are interaction among perceived and received support, psychological symptoms, and gender [24,25].

Because social support is obtained through interpersonal interaction and both interdependent and independent self-construals play an important role when interpreting the situation and taking action afterward [2,26], there is an inseparable relationship between social support and self-construals. Cross [27] confirmed that social support can help reduce the occurrence of distress which arises from emotional conflict when one is required to act against self-construal tendencies. On the other hand, another study has reported that self-construals can contribute to anxiety even when the effect of social support is controlled [28]. It should be noted, however, that this result was obtained from a parenting stress study on mothers rearing children and further research needs to be conducted if the result are to be applied to occupational setting. Because working basically needs social support unlike rearing children, social support is essential element for workplace. There may be interaction between self-construals and social support when mental health in the workplace is explored in the context of self-construal.

## Self-construal and workplace culture in Japan

Some researchers believe that Asian cultures, including Japanese culture, are more likely to value interdependent self-construal than Western cultures [3]. Meanwhile, other studies suggested that the independent self-construal can lead to positive mental health regardless of culture background [27, 29]. On the other hand, as Oishi and Diener found, there are certain divergent affective consequences across cultures in terms of the relationship between self-construals and subjective well-being [30]. Group harmony or conformity is often prioritized over individual work performance at typical workplaces in Japan [31]. In that sense, the interdependent self-construal could contribute to maintaining good mental health. However, it is unknown how or whether the independent self-construal can bring positive outcomes at Japanese workplace, as research on this issue has yet to be conducted. Based on these issues, we examined how the effects of independent

self-construal (which works positively) and perceived support (a type of social support which indicates good work environment) influence depression and anxiety in Japanese workplaces in this study.

## Materials and Methods

### Participants

The sample was drawn from Japanese workers between the ages of 19 and 60 at two sources: (1) local public servants and (2) employees at a private dairy company. Questionnaires were distributed on two occasions to both groups (interval of 10 weeks). Out of 645 questionnaires distributed at first wave to first group, 577 were collected (89.5%) and out of 645 distributed at second wave, 526 were collected (81.6%). The total number of usable questionnaires that were completed and collected in the two surveys was 382 pairs. Similarly, the questionnaires were distributed to the second group (interval of 10 weeks). Out of 294 questionnaires distributed at first wave, 190 were collected (64.6%) and out of 294 distributed at second wave, 160 were collected (54.4%). The total number of usable questionnaires that were completed and collected in the two surveys was 150 pairs. Thus, the total number of usable questionnaires from the two groups was 532 (342 males and 100 females, respectively). There were no significant differences in each variable between the local public servants and the private daily company.

This study project was approved by the Ethical Committee of the Kumamoto University Graduate School of Medical Sciences (equivalent to the Institutional Review Board).

### Measurements

#### Independent and Interdependent construal of self

The Scale for Independent and Interdependent construal of the self (SII) developed by Kiuchi [32] was used to measure the tendency for self-construal. This scale consists of 16 items where each item consists of two different statements such as A and B. The participants rated each pair on a 4-point Likert scale from 1 = "A is characteristic of me" to 4 = "B is characteristic of me." Sentences of A represent a tendency of independent self-construal, and sentences B represent a tendency of interdependent self-construal. This scale is not designed to measure precise degrees of independent and interdependent self-construal, but is designed to clarify one's general tendency which he/she puts the priority on independent or interdependent self-construal. Higher scores of the scale indicate a greater interdependent self-construal tendency. In the present study, the scores were reversed so that a high score represented greater independent self-construal. An example of the A item is "I exhibit my individuality," and an example of the B item is "I respect cooperativeness." The internal consistency of this study was adequate ( $\alpha = .804$ ).

#### Social support

Social support was elicited using the subscale of the Job Strain Questionnaire (JSQ) [33], which consists of 5 items. Example of the items include, "I have a good relationship with my supervisors" which measures functional support. The internal consistency was  $\alpha = .690$  in this study.

#### Depression and anxiety

Symptoms of anxiety and depression were ascertained using 8 and 13 items, respectively, from the anxiety and depression subscales of the Hopkins Symptom Checklist (HSCL) [34], which is a reliable and valid

instrument that performs similarly to a physician interview for anxiety and depression; Depression (13 items; thoughts of ending your life,  $\alpha = .838$ ) and anxiety (8 items; heart pounding or racing,  $\alpha = .858$ ). This study used the Japanese version of the checklist [35].

### Statistical analyses

First, we examined the descriptive statistics and correlations of all the variables. Second, we designed the structured equation model based on the results of the correlation. Next, we conducted simultaneous multiple-group analysis to examine further relationships between social support and self-construal.

The fit of each model with the data was examined in terms of chi-squared, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). According to conventional criteria, a good fit would be indicated by chi-squared/df < 2, GFI > 0.95, AGFI > 0.85, CFI > 0.95, and RMSEA < 0.08 [36]. Akaike Information Criterion (AIC) was used to compare different models. A model with an AIC at least 2 points lower than a second model is regarded as the superior one. All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 16.0 and AMOS 7.0.

### Results

#### Descriptive and bivariate statistics

Descriptive data and correlation coefficients between all the variables are presented in Table 1. As we expected, social support was negatively associated with time 1 and 2 Anxiety and Depression. SII was also negatively associated with time 1 and 2 Anxiety and Depression. This means that an independent self-construal tendency is related to fewer symptoms of anxiety and depression. There are positive correlations between age and SII, and Social support. Additionally, women tended to get higher scores for anxiety and depression compared to men, as seen in previous research [37, 38], (Table 1).

#### Structural Equation Modeling (SEM)

After conducting a correlation analysis, the path diagram was built

based on the self-construal theory with the purpose of investigating the effects of stress reduction in the independent self-construal. All time 1 variables (age, sex, anxiety, depression, self-construal, and social support) were hypothesized to lead to time 2 depression and anxiety. Latent variables were not set in the model. The results of the path coefficients calculated by AMOS are shown in Figure 1. An excellent model fit was obtained (chi-squared = 2.002, GFI = .999, AGFI = .966, CFI = .997, RMSEA = .043, 90 % confidence intervals for RMSEA low = .033, 90 % confidence intervals for RMSEA high = .064, AIC = 72.002). The path coefficients from age, sex, Social support to Anxiety Time 2, and to Depression time 2 were not significant. The path coefficient from Self-construal to Depression time 2 was significant ( $p < .05$ ). Anxiety time 1 was significantly related to Anxiety time 2, and Depression time 1 was also substantially related to Depression time 2.

#### Simultaneous multiple-group analysis

In order to further examine the influence of social support on the relationship of self-construal, anxiety and depression, we conducted simultaneous multiple-group analysis. Participants were divided into two groups: high social support ( $n = 276$ , male: 177, female: 99) and low social support ( $n = 256$ , male: 165, female: 91) according to the mean score of social support. The result of the one-way analysis of variance showed that there were significant differences between high and low Social support groups in Anxiety time 1, Anxiety time 2, Depression time 1, and Depression time 2 ( $F[1, 530] = 19.025, p < .001$ ;  $F[1, 530] = 13.710, p < .001$ ;  $F[1, 530] = 35.959, p < .001$ ;  $F[1, 530] = 24.877, p < .001$ , respectively). The correlation coefficient, mean, and SD are shown in Table 2.

The model in which parameters were left unaltered showed a better fit than the other model in which every parameter was equalized between two groups (GFI = .996, AGFI = .962, CFI = .991, RMSEA = .071, 90 % confidence intervals for RMSEA low = .051, 90 % confidence intervals for RMSEA high = .093, AIC = 161.029; and GFI = .965, AGFI = .906, CFI = .979, RMSEA = .075, 90 % confidence intervals for RMSEA low = .044, 90 % confidence intervals for RMSEA high = .010, AIC = 175.814, respectively). Figure 2, 3 show path diagrams of the model in which parameters were left unaltered. Hence, the result indicated that there

	1	2	3	4	5	6	7	M	SD
1 sex								42.4	10.7
2 age	-.061							35.9	4.8
3 SII	-.183***	.171***						14.5	2.4
4 Social support	-.009	.117**	-.001					12.3	4.0
5 Anxiety time 1	.102*	-.026	-.270***	-.240***				12.6	4.1
6 Anxiety time 2	.118**	-.081	-.241***	-.185***	.722***			21.8	6.1
7 Depression time 1	.140**	-.039	-.254***	-.342***	.829***	.631***		21.9	6.2
8 Depression time 2	.161***	-.077	-.268***	-.265***	.661***	.798***	.733***		

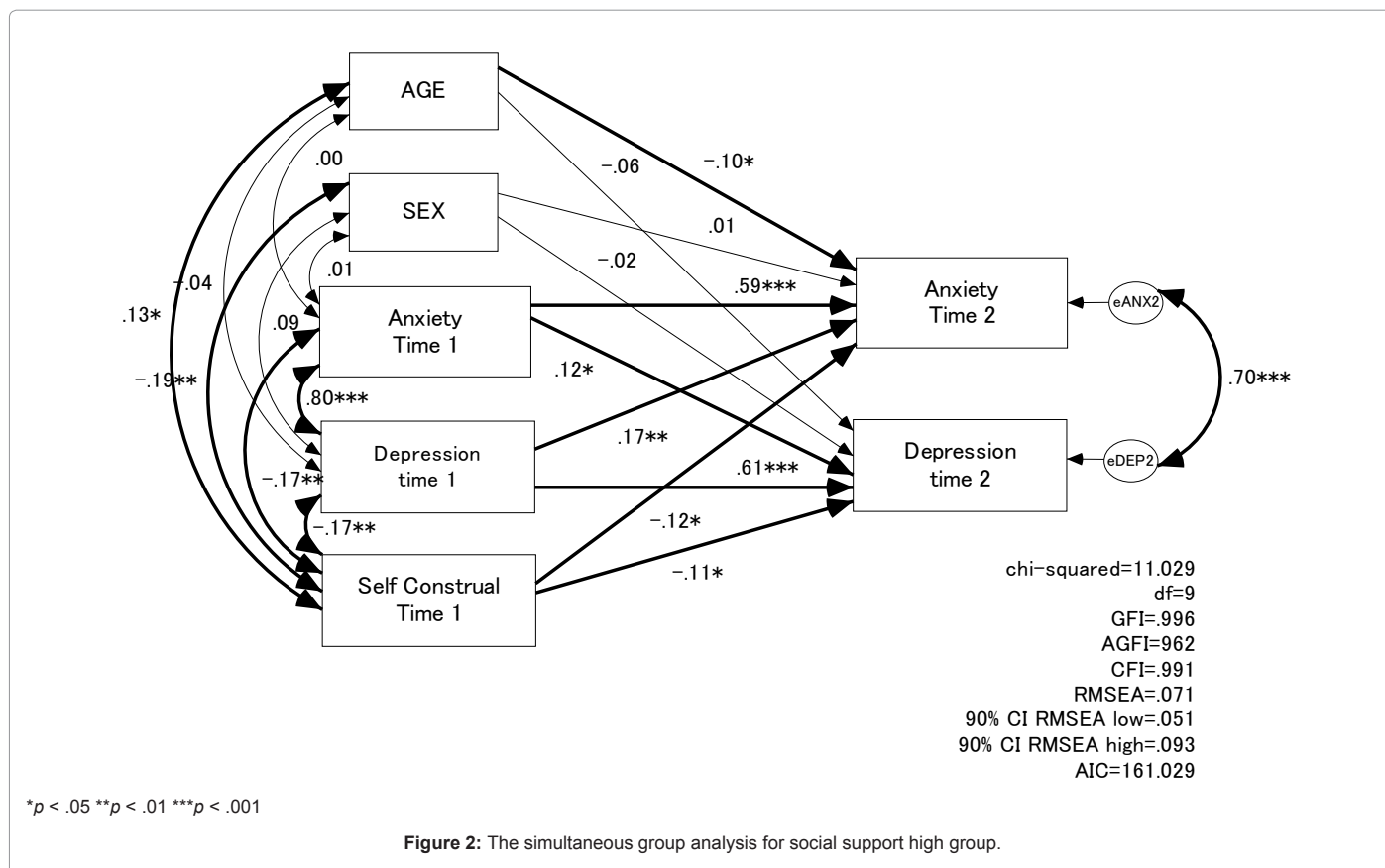
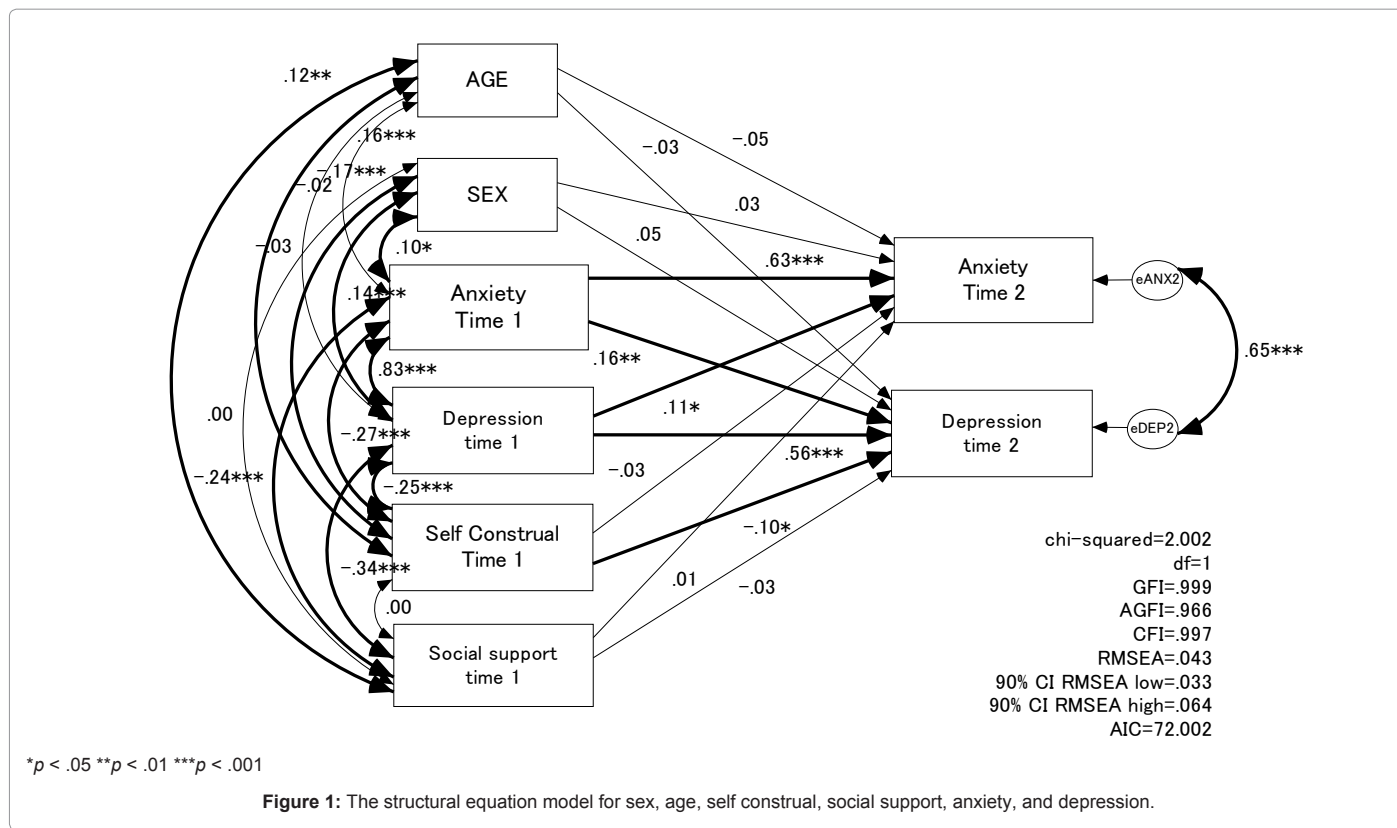
Note. SII: Scale for independent and interdependent construal of the self. sex; male: 1, female: 2  
\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

**Table 1:** Pearson correlations, means, and standard deviations of all the variables.

	1	2	3	4	5	6	7	M (ss high / ss low)	SD (ss high / ss low)
1 sex	-								
2 age	-.162**	-.029						(43.2 / 40.7)	(11.1 / 10.4)
3 SII	-.183***	.219***						(35.9 / 35.9)	(4.6 / 5.0)
4 Anxiety time 1	.170**	.018	-.357***					(11.5 / 13.0)	(3.5 / 4.4)
5 Anxiety time 2	.174**	-.007	-.248***	.695***				(11.9 / 13.3)	(3.5 / 4.7)
6 Depression time 1	.200**	-.019	-.343***	.836***	.591***			(20.3 / 23.4)	(5.4 / 6.5)
7 Depression time 2	.236***	-.041	-.330***	.664***	.774***	.719***		(20.6 / 23.3)	(5.4 / 6.7)

Note. SII: Scale for independent and interdependent construal of the self. ss: social support. sex; male: 1, female: 2  
\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

**Table 2:** Pearson correlations, means, and standard deviations of sex, age, Self construal, Anxiety, and Depression for the social support high group (above the diagonal) and the social support low group (below the diagonal).



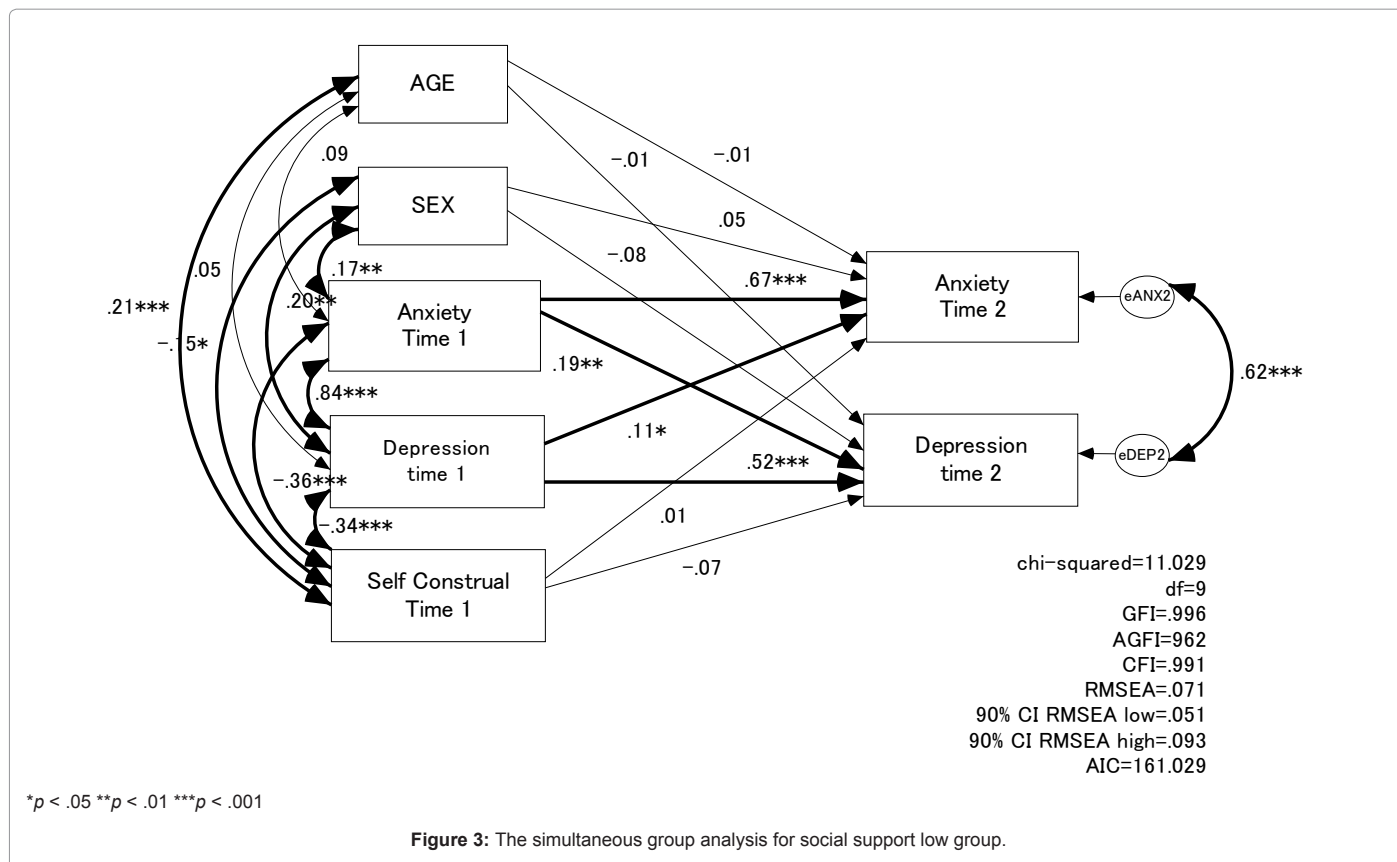


Figure 3: The simultaneous group analysis for social support low group.

was heterogeneity within the same path diagram between the high and low Social support groups. Although causal paths from Anxiety time 1 to Anxiety time 2, and from Depression time 1 to Depression time 2 were significant in both groups, the causal path from Self Construal time 1 to Anxiety time 2 was significant at only for the Social support high group. In addition, the path from age to Anxiety time 2 was also significant for the Social support high group (Figures 1,2).

## Discussion

The purpose of this study was to examine the relationships among self-construal, social support, and depression and anxiety. According to the results of the correlation analyses, social support was found to be negatively correlated with depression and anxiety, and therefore it was expected to have a buffer effect on these symptoms. However, as a result of SEM, it turned out that the independent self-construal was a significant contributing factor for lessening symptoms for depression and anxiety, but social support was not. This fact is consistent with the result of Shi and Katsurada's study [28]. The simultaneous multiple-group analyses, however, indicated that the effect of reduced depression and anxiety for the independent self-construal applied only to the high social support group, but not to the low social support group. As the result implies, having one's own ideas or opinions and expressing them accordingly are important attributes for achieving goals at workplace. Since people with independent self-construal do not worry about what other people think of them, they do not often feel there are difficulties in interpersonal relationships [28]. It should be noted, however, that workers come across situations where their opinions do not necessarily lead to business or personal achievement as their authority granted by the company is limited influenced by fluctuations in business. Under such situations, even if one's assignment does not directly result in

success, a supportive work environment where appreciates workers' ideas and opinions are appreciated can mitigate potential depression and anxiety. Though people with high tendency for independent self-construal are goal-oriented and tend to have interpersonal relationships for achieving their goals, they nonetheless seek to build relationships with others [2]. Hence, perceived support in which one's activeness and independence are acknowledged and fostered would exert its effect on independent minded workers, compared with enacted support in which individuals are given direct support. The fact highlights not only the importance of interpersonal relationships in the workplace for maintaining good mental health, but also the importance of improvement in job performance among workers. Not being able to have a good relationship at workplace where different people have different opinions and values can jeopardize workers with unique ideas or opinions.

Age was found to be a predictor for reducing anxiety among the social support high group. In other words, the older the workers become, the less they will have anxiety. On the other hand, the same effect was not seen among the social support low group. It is likely that young workers with little work experience may feel anxious more or less when engaged in new tasks, but they will accustom themselves to work with age and experience. However, this could happen only when they perceive themselves as receiving necessary support in times of trouble. If they do not have enough social support, they cannot help thinking about their work performance, asking themselves questions like "I wonder if my performance is OK." despite having enough work experience. Thus, this can be the reason for that age was not a predictor for reducing anxiety for the social support low group. This interpretation on the age issue needs to be further clarified through qualitative research.

The result indicated that women have less independent self-construal than men. That is to say, women are more interdependent self-construal-oriented and therefore they have a stronger tendency to conform to others than men. Although a lot of women have entered the job market in Japan, there still exist a majority of workplaces where male workers outnumber female workers, as also seen in the population of this study in which the number of males are double that of females. As previous studies indicate [37,38], men reported milder depression and anxiety than women. It can be understood from the view point of social roles or social desirability [39,40]. High male occupancy rate of job market in Japan and social desirability formed by the male-dominated society both may have played a role in the gender differences seen in present study and this can be taken as one of the many characteristics of workplaces in Japan. People with high tendency for interdependent self-construal are more easily influenced by negative feelings, but not by positive feelings [41]. The fact that they have difficulty with taking positive approaches means that their attitudes towards accepting social support can be affected as well. Therefore, the ways to provide such people with social support need to be explored with careful consideration.

Although this study found that self-construals and social support influenced depression and anxiety through their interactions among Japanese workers, we should point out some limitations. First, participants were drawn from only two companies. As a result, the sample does not necessarily represent typical Japanese workers and the results obtained from this study are not generalizable to other population. Second, we have pointed out the effect of perceived support on depression and anxiety in this study. There are various forms of social support and some are said to be exacerbating [42]. Further studies on matching between types of social support and of self-construals are required for clarification. Finally, studies on relationships between coping strategies and occupational stress are important issues that need further research [11]. Therefore, the concept of coping strategy should be included in studies on interactions between self-construal and social support in future research.

In conclusion, the present study demonstrated that self-construal and social support have effects on stress responses via interactions between the two and that the combination of high social support and independent self-construal is a contributing factor for mitigating depression and anxiety. As a result, it leads to maintaining good mental health. In other words, working environments in modern Japan require the both independent mindedness characterized by Western cultures and the social support as a form of social conformity emphasized in Asian cultures.

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