Exploring the relationship between career decision-making self-efficacy and implicit beliefs among the Japanese female undergraduates

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Abstract

This study examined whether assessing natural verbal relations for career-related terms in female undergraduates could reflect implicit attitudes or beliefs. Specifically, the study intends to characterize the associations between or differences in the outcomes of the Implicit Relational Assessment Procedure (IRAP), career decision-making self-efficacy (CDMSE), and career-related behaviors. 34 female undergraduates participated in this study and results revealed that CDMSE and D_{IRAP} scores for the "unofficial decision/consistent" condition were significantly and positively correlated. Moreover, CDMSE scores of the participants under the latter stage were significantly higher than they were under the former stage. This study demonstrated the association of implicit attitudes or verbal labeling toward career-related behaviors, especially job hunting, with self-efficacy. Enhancing career-related self-efficacy could change one's implicit attitudes and eventually exert an impact on actual behavior.

【Key Words】Implicit Beliefs, Implicit Relational Assessment Procedure (IRAP), Career decision-making self-efficacy, Career-related behavior

INTRODUCTION

Social involvement among females has been investigated in several countries in relation to fertility rate (Ko, 2016), work–life balance (Ollier-Malaterre & Foucreault, 2017), or economic performance (Lundborg, Plug, & Rasmussen, 2017). Over the past few decades, the workstyles of females in Japan have changed markedly, where their participation rate as a labor force increased by approximately 10.4% from 2002 to 2017 (Japan Gender Equality Bureau Cabinet Office, 2018). Developing career-related behaviors aims to reduce career-related stress, promote job satisfaction, and add meaning to life (Fiori, Bollmann, & Rossier, 2015; Dik et al., 2014) Therefore, enhancing career-related behavior is a global concern regardless of gender.

Currently, females in Japan can select from a number of types of work compared to the constraints of the previous

decades. However, they are experiencing difficulties in incorporating career into life. Moreover, several studies investigated differences in gender or features of female undergraduates in terms of career decision-making, such as under-representation in leadership or low career aspirations (Gregor & O'Brien, 2016; Lennon, 2013).

Career-related cognition, career decision-making self-efficacy (CDMSE), and attitude are pivotal components of the social cognitive context regardless of gender (Lent, Brown, & Hackett, 1994). Several studies investigated the self-efficacy of undergraduates to promote positive engagement in career-related behaviors (e.g., Uffelman et al., 2004; Sullivan & Mahalik, 2000). In addition, van't Riet et al. (2010a,b) and Brawley and Latimer (2007) noted that self-efficacy moderates the reception of verbal support or career support messages.

Although extensive effort is dedicated to understanding how female university students decide their careers, less is known about effective approaches that can be used to support their decision-making in this regard. Several studies conducted meta-analyses on the issue of whether persuasive messages have a significant effect on the promotion of cognitive or behavioral changes (e.g., Siopis, Chey, & Allman-Farinelli, 2014; Head, Noar, Iannarino, & Harrington, 2013; Gallagher & Updegraff, 2011; O'Keefe & Jensen, 2009), including career-related behaviors (Luzzo & Day, 1999; Luzzo, James, & Luna, 1996).

The study aims to clarify whether assessing natural verbal relations for career-related terms in female undergraduates could reflect implicit attitudes or beliefs. Specifically, the study intends to characterize the associations between or differences in the outcomes of the Implicit Relational Assessment Procedure (IRAP), CDMSE, and career-related behaviors.

METHODS

Participants

The study recruited 34 female undergraduates at a women's university in Japan with an age range of 18 to 23 years (M = 20.03, SD = 1.22). The criteria for inclusion were: (a) normal (or corrected-to-normal) vision, (b) aged between 18 and 65 years, (c) full use of both hands, and (d) unemployed at the time of the study. The participants received a pre-paid card worth two thousand yen as compensation for participation.

Measurements

Career-related behaviors. The study applied the stages of change model to assess the degree of career-related behaviors of the participants. According to Prochaska and Velicer (1997), the model describes individual levels of motivation for a target behavior based on cognition or actual behavior, which is typically clas-

sified into five stages. The stages of change in relation to career decision-making behaviors were determined by selecting a stage that was applicable to the participant. Each stage is presented as follows: precontemplation stage ("I have no interest engaging in any career decision-making behaviors"), contemplation stage ("I have an interest engaging in career decision-making behaviors, and I am ready to start within 6 months"), preparation stage ("I'm going to start engaging in career decision-making behaviors within 30 days"), action stage ("I have been engaging in career decision-making behaviors less than 6 months ago"), and maintenance stage ("I have been engaging in career decision-making behaviors more than 6 months ago"). Given the small sample size, the study categorized the participants who responded to the precontemplation, contemplation, and preparation stages as the "former stage," and those who responded to the action and maintenance stages as the "latter stage."

CDMSE. The study employed the Japanese version of the CDMSE introduced by Urakami (1995). The scale is composed of 30 brief statements related to career decision-making (e.g., "To assess my ability accurately" and "To imagine an ideal job for myself"). The items were rated using a 4-point Likert-type scale ranging from 1 (no confidence) to 4 (complete confidence). Urakami (1995) mentioned that the scale demonstrates high internal consistency (α = .88) and 2-week test–retest reliability (r = .81).

Structure of the career-related IRAP

The IRAP is one of the most well-established methods for assessing implicit attitudes or beliefs (Barnes-Homes, Stewart, & Boles, 2010). A computer-based task poses specific terms that require quick and accurate responses as much as possible. Such responses should be consistent or inconsistent with verbal relations established in experiences. The procedure of the IRAP includes a presentation called "contextual cues," such as "consistent–inconsistent," to measure the strength of verbal relations. The participants engage in two conditions, and the difference in performance in each trial of both conditions represents a feature of one's verbal or cognitive labeling.

The career-related IRAP consists of two types of label stimuli, two types of target stimuli, and response options that represent the specific relations between label and target stimuli (Table 1). One of two label stimuli was presented at the top of a computer screen, whereas one of terms including the target stimuli group was presented at the center. In addition, two response options as contextual cues (consistent and inconsistent) were presented on the lower left- and right-hand corners of the screen. The participants then selected between two response

Table 1　Lists of stimuli for the Career-related Implicit Relatonal Assessment Procedure (IRAP)

Label stimulus 1 **Job Hunting**	Label stimulus 2 **Unofficial Decision**
Response option 1 **Similar**	Response option 2 **Opposite**
Target stimulus group1 **Uncomfortable** **Hurt** **Anxiety** **Fear** **Unpleasant** **Aversive**	Target stimulus group 2 **Comfortable** **Refreshing** **Calmness** **Relief** **Pleasant** **Peaceful**

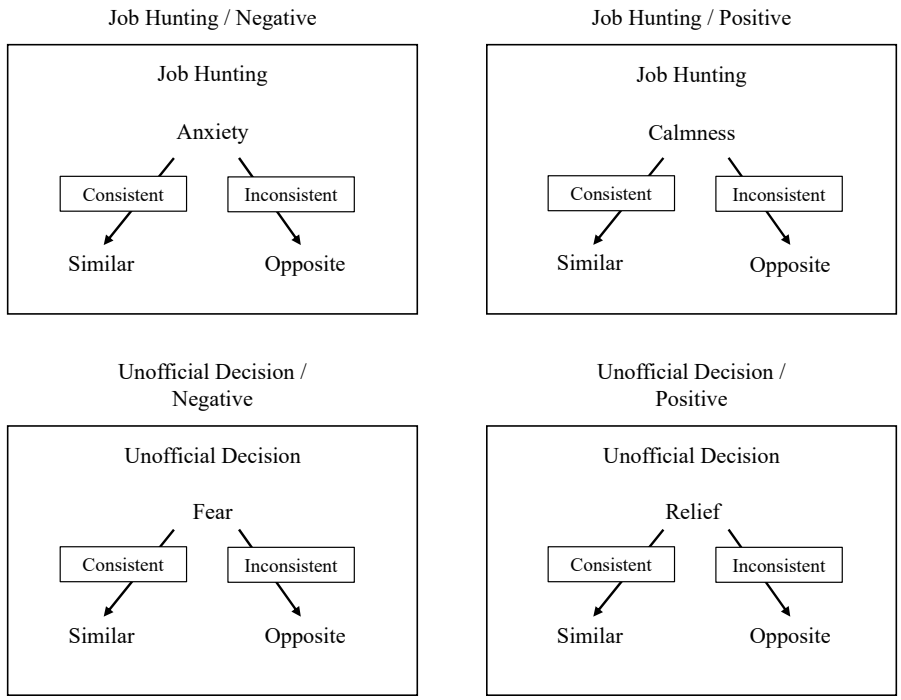

Figure 1　An Example of four Career-related IRAP trial types

The label (“Job Hunting” or “Unofficial Decision”), target term (“Anxiety”, “Calmness”, “Fear”, or “Relief”) and response options (“Similar” and “Opposite”) appear simultaneously on each trial. Arrows with superimposed text boxes indicate which responses are deemed consistent or inconsistent (boxes and arrows do not appear on the screen).

options by pressing “d” or “k” on a keyboard as quickly as possible (Figure 1). The career-related IRAP is composed of two conditions, namely, “consistent trial blocks,” where the participants should respond in accordance with the literal meanings of the presented terms, and “inconsistent trial blocks,” where the par-

ticipants should respond contrary to pre-experimentally established verbal relations. If the response is correct, then the screen becomes blank for 400 ms followed by the next trial. If the response is incorrect, a red-colored X appeared under the target stimulus, and the participants were required to provide the correct response to continue to the next trial.

Prior to conducting the test trial blocks, the participants engaged in two sessions of practice trial to become familiar with the test setting and to achieve the following: (a) a correct response rate of approximately 80% or above and (b) a median response time of less than 3,000 ms. After the practice, the participants proceeded to the four test trial blocks. Each block contains 24 consistent or inconsistent trials. The four trial types were created by combining each label stimulus and each of the two sets of target terms (Figure 1). The order of the four test trial blocks was counter-balanced across participants. All trials in the IRAP used the Japanese version of IRAP 2010 programs (Kishita, Ohtsuki, Sakai, & Mutou, 2010).

Procedures

The study was designed as follows: First, the participants were informed about the procedure of the experiment. Afterward, written informed consent was obtained. Second, they completed the abovementioned set of questionnaires. Finally, they underwent the career-related IRAP. In total, the experiments lasted for approximately 30 min. All procedures were approved by the Ethical Review Board of Atomi University.

Data processing of career-related IRAP

To estimate the outcome of the career-related IRAP, response latency is defined as the time (ms) between the onset of the trial and a correct response. According to Barnes-Holmes et al. (2010), latency data should be transformed to D_{IRAP} scores, which are derived using the D algorithm developed by Greenbald, Nosek, and Banaji (2003). Specifically, differences in the means of the response latency between consistent and inconsistent trials are divided by the standard deviation of all latencies in the trials. In the present study, the D_{IRAP} scores for each trial type and overall score were used. Positive D_{IRAP} scores indicate the strength of verbal relations under consistent trials. By contrast, negative DIRAP scores indicated the strength of verbal relations under inconsistent trials.

Statistical analysis

Bivariate associations among variables were estimated using Pearson's product–moment correlations. Moreover, the study hypothesized that the CDMSE scores and each D_{IRAP} score would differ between the participants under the former and latter stages. Accordingly, comparisons

Table 2　Correlations between CDMSE scores and each D_{IRAP} scores

	1	2	3	4	5	6
1: CMDSE	—	.14	−.15	.34*	.30	.26
2: D_{IRAP} JH / con		—	.00	.10	.03	.04
3: D_{IRAP} JH / incon			—	−.02	.05	.00
4: D_{IRAP} UD / con				—	.04	−.03
5: D_{IRAP} UD / incon					—	.03
6: D_{IRAP} Overall						—

*p < .05

Table 3　Results of t-test of CDMSE scores and each DIRAP scores

	former stage	latter stage	t-value
CMDSE	73.88	87.82	−2.68*
D_{IRAP} JH / con	.74	−.03	1.65
D_{IRAP} JH / incon	.11	−.72	1.20
D_{IRAP} UD / con	.77	1.38	−.71
D_{IRAP} UD/ incon	−1.07	.52	−1.90+
D_{IRAP} Overall	−.37	166.04	−1.00

*p < .05; + p < .10

were made with a t-test.

Analyses were conducted using IBM SPSS Statistics, Version 25.0.

RESULTS

Table 2 presents the results of the Pearson product–moment correlations. CDMSE and D_{IRAP} scores for the "unofficial decision/consistent" condition were significantly and positively correlated (r = .34, p = .04). Moreover, an independent sample t-test revealed that the CDMSE scores of the participants under the latter stage were significantly higher than they were under the former stage (t = −2.68, p = .01). Similarly, the participants under the latter stage displayed only marginally higher D_{IRAP} scores for the "unofficial decision/inconsistent" condition compared with those under the former stage.

DISCUSSION

The study examined whether natural verbal relations for career-related terms could reflect the implicit attitudes or beliefs of female undergraduates.

The main findings indicated that high scores for CDMSE were associated with more proactive attitudes toward career decision-related behaviors. This result was consistent with those of Prochaska et al. (2015), who proposed that higher self-

efficacy would enhance one's motivation or actual behavior. Another key finding was the significantly positive relationship between CDMSE and D_{IRAP} scores for the "unofficial decision/consistent" condition. According to Barnes-Holmes et al. (2003), positive implicit attitude or verbal connection toward successful career performance could be associated with high levels of self-efficacy. Moreover, the study demonstrated that participants unengaged in career-related behaviors would assess job hunting more negatively.

However, several limitations require a careful consideration of the results. The sample size was relatively small and consisted of only female undergraduates. Therefore, the results should be replicated on a large or diverse sample. Another limitation was the reliance on a single IRAP-based measurement for attitude toward career-related behaviors. This aspect is an interesting avenue for future studies, which should use explicit criteria.

In summary, the study demonstrated the association of implicit attitudes or verbal labeling toward career-related behaviors, especially job hunting, with self-efficacy. Hence, enhancing career-related self-efficacy could change one's implicit attitudes and eventually exert an impact on actual behavior.

REFERENCES

Barnes-Holmes, D., Barnes-Holmes, Y., Stewart, I., & Bowles, S. (2010). A sketch of the implicit relational assessment procedure (IRAP) and the relational elaboration and coherence (REC) model. The Psychological Record, 60, 527-542.

Brawley, L. R., & Latimer, A. E. (2007). Physical activity guides for Canadians: messaging strategies, realistic expectations for change, and evaluation. Canadian Journal of Public Health, 98, 170-184.

Dik, B. J., Duffy, R. D., Allan, B. A., O'Donnell, M. B., Shim, Y., & Steger, M. F. (2014). Purpose and meaning in career Development Applications. The Counseling Psychologist. (Published Online)

Fiori, M. Bollmann, G. & Rossier, J. (2015). Exploring the path through which career adaptability increases job satisfaction lowers job stress: The role of affect. Journal of Vocational Behavior, 91, 113-121.

Gallagher, K. M., Updegraff, J. A. (2012). Health message framing effects on attitudes, intentions, and behavior: a meta-analytic review. Annals of Behavioral Medicine, 43, 101-116.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. Journal of Personality and Social

Psychology, 85(2), 197-216.

Gregor, M. A. & O'Brien, K. M. (2016). Understanding career aspirations among young women: Improving instrumentation. Journal of Career Assessment, 24, 559-572.

Head, K. J., Seth, M., Noar, S. M., Iannarino, N. T., & Harrington, N. G. (2013). Efficacy of text messaging-based interventions for health promotion: A meta-analysis. Social Science & Medicine, 97, 41-48.

Kishita, N., Ohtsuki, T., Sakai, M., & Muto, T. (2010). Behavioral assessment methodology for cognitive defusion : Testing the utility of the Implicit Relational Assessment Procedure. Japanese Journal of Behavior Therapy, 38, 237-246.

Ko, C. (2016). Gender-role expectations and fertility rates in EU member states. Sociology and Anthropology, 4, 980-986.

Japan Gender Equality Bureau Cabinet Office. (2018). https://www.gender.go.jp/

Lennon, T. (2013). Benchmarking women's leadership in the United States.

Denver: Colorado Women's College.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. Journal of Vocational Behavior, 45, 79-122.

Lundborg, P., Plug, E. & Rasmussen, A. W. (2017). Can Women Have Children and a Career? IV Evidence from IVF Treatments. American Economic Review, 107, 1611-1637.

Luzzo, D. & Day, M. A. (1999). Effects of Strong Interest Inventory feedback on career decision making self-efficacy and social cognitive career beliefs. Journal of Career Assessment, 7, 1-17.

Luzzo, D. A., James, T., & Luna, M. (1996). Effects of attributional retraining on the career beliefs and career exploration behavior of college students. Journal of Counseling Psychology, 43, 415-422.

Sullivan, K. & Mahalik, J. R. (2000). Increasing career self-efficacy for women: Evaluating a group intervention. Journal of Counseling and Development, 78, 54-62.

O'Keefe, D. J., & Jensen, J. D. (2009). The relative persuasiveness of gain-framed and loss-framed messages for encouraging disease detection behaviors: A meta-analytic review. Journal of Communication, 59(2), 296-316.

Ollier-Malaterre, A. & Foucreault, A. (2017). Cross-national work-Life research: Cultural and structural impacts for individuals and organizations. Journal of Management, 43, 111-136.

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health behavior change. American Journal

of Health Promotion, 12, 38-48.

Siopis, G., Chey, T., & Allman-Farinelli, M. (2015). A systematic review and meta-analysis of interventions for weight management using text messaging. Journal of Human Nutrition and Dietetics, 28, 1-15.

Uffelman, R. A., Subich, L. M., Diegelman, N. M., Wagner, K. S., & Bardash, R. J. (2004). Effect of mode of interest assessment on clients' career decision self-efficacy. Journal of Career Assessment, 12, 366-380.

Urakami, M. (1995). Career decision-making self-efficacy and career indecision in women's junior college students. Japanese Journal of Career Education, 16, 40-45. (In Japanese)

van't Riet, J., Ruiter, R. A. C., Smerecnik, C., & de Vries, H. (2010a). Examining the influence of self-efficacy on message-framing effects: Reducing salt consumption in the general population. Basic and Applied Social Psychology, 32, 165-172.

van 't Riet, J., Ruiter, R. A. C., Werrij, M. Q., & de Vries, H. (2010b). Self-efficacy moderates message-framing effects: The case of skin-cancer detection. Psychology & Health, 25, 339-349.