

# The Role of Positive Meta-cognition and Negative Meta-cognition in Employment Stress among College Students

Yunji Kim, and Yooli Jun

**Abstract**— The main objective of this study was to examine the effect of positive meta-cognition and negative meta-cognition on employment stress for Korean college students. Data were collected from 87 Korean college students. Korean college students' positive meta-cognition, negative meta-cognition and employed stress were measured by questionnaire. The major findings of this study are as follows: First, results showed that positive meta-cognition and negative meta-cognition predicted employment stress among a sample of Korean university students. Second, it was shown that positive meta-cognition was a stronger predictor of employment stress than negative meta-cognition. The results of our study suggest that positive meta-cognition can be a better significant predictor of the employment stress than negative meta-cognition.

**Keywords**— Employment stress, positive meta-cognition, negative meta-cognition

## I. INTRODUCTION

**Y**OUTH employment is getting bigger problem in Korean society. According to 2014 International Labour Organization, the number of world whole unemployment tends to be increased about 5,000,000 compared with 2013. Young people continue to be particularly affected by the weak and uneven recovery. It is estimated that some 74.5 million young people (aged 15–24) were unemployed in 2013. That is almost 1 million more than in the year before. Korean youth unemployment rate is 10.2%. It seems not to be serious compared to other countries' unemployment rate such as France (26.9), U.K. (21%), however, if we consider the average employment rate of recipients with working ability of university graduates (including junior college and graduate school) are less than 60%, we get to know it's a big problem of Korea. It means that 4 of 10 university graduates become jobless person straight after graduation.

In addition average university tuition managed by young applicants and their parents is about four thousand dollars for national university and eight thousand dollars for private university per year. Moreover the number of students who took student loan is more than 400000 about 15% of the whole

university students, which is one of the factors to increase employment stress. This kind of social environment not only fosters students who are going into the labor market be anxiety and fearful for finding jobs but also is associated with psychological difficulty with excessive competition.

Kim [1] reported employment stress had the highest percentage of life stress experienced by university students and freshmen are under much pressure for finding employment as well as junior or senior. The higher employment stress is, the more difficulty in university life adjustment[2] is, while the lower subjective well-being and happiness[3]-[4].

Although stress is at the same level, the results can take on different aspects depends on personal resources. The influence of stress varies depends on self-esteem and self-resilience [5], self-efficacy[6], emotional coping strategy[7] and cognitive regulation strategy[8]. Especially, Beer and Moneta [9] found that measures of positive meta-cognition and meta-emotion was a moderate predictor of adaptive coping. Therefore present study examines how individual positive meta-cognition can handle the job-seeking stress.

In detail, the primary questions that we address are as follows:

- 1) Does positive meta-cognition and negative meta-cognition predict employment stress?
- 2) Which type of meta-cognition predicts employment stress for university students more?

### A. Employment Stress

Employment Stress refers to a state of tension or anxiety about the employment after graduation[10]. Most college students tried very hard to build one's career in order to survive employment competitiveness from the early part of college life. Thus, employment stress is not only applying to senior students but also applying to freshman. Employment stress is a long-term stress, not a short-term stress.

The longer the employment competitiveness, the more problem has major influence on college students' mental health. Suh and Lee[11] reported that the unemployed college student shows weak mental health in somatization, obsessive compulsive neurosis, depression, hostility, anxiety in comparison with the employed college student. Park[12] showed that career stress have positive relationship with

Yunji Kim is with the Department of Child Psychology and Education, SungKyunKwan University, South Korea

Yooli Jun is with the Department of Child Psychology and Education, SungKyunKwan University

depression. Also, Shim[8] suggested that employment stress have positive relationships with depression, anxiety, physical symptoms. In conclusion, college students' employment stress is major stress which influences various mental health problems.

### B. Meta-cognition

Meta-cognition is broadly defined as the knowledge and beliefs about one's own cognitive regulation and the capability to actively monitor and reflect upon one's own performance and abilities[13].

A wealth of studies have found that meta-cognition, which controls individual cognition, is related to emotions such as depression, anxiety and fear [14]-[15]-[16]-[17]-[18]. The study of meta-cognition has mainly been related to the Self-Regulatory Executive Function (S-REF) model. S-REF model states that psychological dysfunction is maintained by maladaptive meta-cognitions that foster dysfunctional use of attention, rumination and worry, adoption of maladaptive coping strategies, which conjointly constitute a cognitive-attentional syndrome (CAS) [19]-[20]

Though many metacognitive studies have been applied in the field of clinical psychology, most recently the study of meta-cognition has come to the fore in the field of positive psychology [21]. Beer and Moneta[21] kernel theory of adaptive meta-cognition and meta-emotion proposes that absence of positive aspects in maladaptive meta-cognition theory is not a sufficient asset for an individual to succeed when tackling a problematic situation. In particular, successful resolution requires metacognitive beliefs that help to regulate S-REF activity based on the strategic demands of the situation, the meta-emotions of interest and curiosity in one's own primary emotional responses to challenges, and metacognitive beliefs of an agentic type that support identification of feasible and flexible goal restructuring.

In Korea, although negative meta-cognition was already shown that it has the relationship with depression, anxiety, and stress [22]-[12], the links between positive meta-cognition and psychological variables had not been identified yet. Therefore, it is necessary to find out the relationship of positive meta-cognition with other psychological variables.

### C. Stress & Meta-cognition

From an interactive perspective which regards stress as a result from interaction between environmental factor and human, there are many studies on the relationship between meta-cognition and stress. In this view, whether one event can be a stress or not depends on how individuals who experience the event perceive and interpret that event. Lazarus and Folkman[23] emphasized that individual cognitive appraisal depends on psychological situations. Some events can or cannot be a stressful event according to individual cognitive appraisal. Self-assessment of the degree of one's stressful experiences is called perceived stress. Prior research concerning the relationship between meta-cognition and

perceived stress has covered only negative meta-cognition (e.g. meta-cognition about anxiety). Previous researches found positive relationships between perceived stress and all sub factor of negative meta-cognition, moreover negative emotions such as depression and anxiety increased as perceived stress increased [12]-[24]. The study examined the relationship between perceived stress and problematic drinking [2] found that the higher perceived stress is the higher meta-cognition about anxiety is. In addition to negative meta-cognition, previous researches reported significant relation between positive meta-cognition and perceived stress. Beer and Moneta[9] confirmed that positive meta-cognition predicted less perceived stress. There are many previous researches deal with negative meta-cognition and perceived stress, however there is no research examine the relation between positive meta-cognition and perceived stress in Korea yet.

## II. METHOD

### A. Participants

Eighty seven Korean college students (40 men and 47 women) were recruited through the universities and colleges across South Korea. 87 students were selected using a convenience sampling method. Measures were collected using an online data collection format (Google-doc) for three weeks. The data collection took place at the middle of the second semester (November). In this sample, the participants' ages ranged from 20 to 29 years old, with a mean age of 23.66 (SD = 1.91) years. Most of the participants were from the college of social sciences (58.6%), third and fourth year (34.5%).

### B. Measures

Positive meta-cognitions and positive meta-emotions questionnaire (PMCEQ).

PMCEQ [21], originally developed by Beer and Moneta [21], was carefully translated into Korean and back translated by the researchers. Translated questionnaire were modified to ensure the facial validity through a review of two graduate students and professor. Items representing metacognitive beliefs about cognitive and emotional processes when facing challenging situations were derived from Beer and Moneta[21]. A total of 18 items ( $\alpha = .858$ ) were phrased in the form of statements to which participants could express their level of agreement on a 4-point scale: 1 (Do not agree), 2 (Agree slightly), 3 (Agree moderately), and 4 (Agree strongly). Items covered e following three dimensions: Confidence in extinguishing perseverative thoughts and emotions (e.g., "In times of 'feeling in the dumps' it's hard for me to regulate my low mood."), Confidence in Interpreting Own Emotions as Cues, Restraining from Immediate Reaction, and Mind Setting for Problem Solving (e.g., "I can stop any 'negative thinking spirals' and focus on what I can do in the situation."), and Confidence in Setting Flexible and Feasible Hierarchies of Goals (e.g., "I can easily divide important long-term goals into achievable and

short-term sub-goals”).

#### Meta-cognition questionnaire-30 (MCQ-30).

MCQ which measuring negative metacognition is originally developed by Wells and Cartwright-Hatton[25]. In this study, we used a Korean version of MCQ[26] which translated into Korean. The MCQ[26], which consists of 30 items ( $\alpha = .877$ ) and was adopted to measure the maladaptive metacognitive traits in five domains, namely, cognitive confidence(e.g., “I do not trust my memory.”), positive beliefs(e.g., “Worrying helps me cope.”), cognitive self-consciousness(e.g., “I monitor my thoughts.”), uncontrollability and danger (e.g., “I could make myself sick with worrying.”), and need to control thoughts(e.g., “I should be in control of my thoughts all of the time.”). The items were rated on a 4-point scale ranging from 1 (Do not agree) to 4 (Agree strongly).

#### Employment stress questionnaire.

The original employment stress questionnaire consisted of 72 items originally developed by Hwang[10] which based on ‘Cornell Medical Index: CMI [27]’. We used 22-item shortened version of the 72-item which revised by Kang[27] to provide a more efficient index of employment stress. The questionnaire consists of 22 items ( $\alpha = .917$ ) that covers five domains: six items for traits stress factors(e.g., “I should be employed but I am losing my confidence “), three items for anxiety stress for employment(e.g., “I am full of worry about employment.”), five items for family environmental stress(e.g., “I should be employed because I have a family responsibility.”), four items for college environmental stress(e.g., “It will be hard to be hired because my college has low name recognition”), and four items for academic stress(e.g., “It will be difficult to get a job because of my lack of ability.”). Items are scored on a 5-point scale ranging from 1 (Strongly disagree) to 5 (Agree very much).

#### C. Statistical Analysis

The primary analyses consisted of correlation analysis for positive meta-cognition, negative meta-cognition and employment stress from a convenience sample of 87 university students in Korea. Then the data were analyzed using multiple regression analyses with positive meta-cognition and negative meta-cognition as independent variables to predict employment stress among youth.

### III. RESULTS

#### A. Descriptive Statistics and Correlation

Firstly, descriptive statistics for job-seeking stress, positive meta-cognition, negative meta-cognition, and demographic variables are shown in Table I. The participants in the study on average responded that employment stress was 42.62 (SD = 14.73), positive meta-cognition was 47.90 (SD = 8.31), and negative meta-cognition was 62.20 (SD = 11.93). The average age of the participants was 23.66 (SD = 1.910) and most were

in their third-year of college or higher (M = 3.22, SD = 1.083).

Table I also shows the correlations among all variables used in the present study. Results indicated that correlations between dependent variable, predictors, and demographic variables and all variables were statistically significant except for demographic variables. Specifically job-seeking stress had a significant negative correlation with positive meta-cognition ( $r = -.410$ ,  $p < .01$ ), and significant positive correlations with negative meta-cognition ( $r = .364$ ,  $p < .01$ ). In addition positive meta-cognition and negative meta-cognition had a statistically significant negative correlation ( $r = -.259$ ,  $p < .05$ ). The strong correlations appeared between positive meta-cognition and employment stress, indicating that university students who had more positive meta-cognition were more likely to have lower level of employment stress.

TABLE I  
STUDENTS' REPORTS OF JOB-SEEKING STRESS, POSITIVE META-COGNITION, NEGATIVE META-COGNITION, AND DEMOGRAPHIC VARIABLES : CORRELATIONS AND DESCRIPTIVE STATISTICS (N = 87)

Variables	1	2	3	4	5	6	7	M	SD
1. Job-seeking stress	-							42.62	14.73
2. Positive meta-cognition	-.410	-						47.90	8.31
3. Negative meta-cognition	.364*	-.259	-					62.20	11.93
4. Gender	.075	-.269	.087	-				1.54	.501
5. Grade	.122	.163	.048	.273*	-			3.22	1.083
6. Age	.090	.334*	.084	-.301	.627*	-		23.66	1.910
7. Major	.101	-.147	.151	-.083	-.161	.029	-	2.11	.945

\*  $p < .05$ , \*\*  $p < .01$ ,

aGender: 0 = male, 1 = female. bMajor: 1 = college of humanities, 2 = college of social sciences, 3 = college of science, 4 = college of engineering, 5 = college of art and sport.

#### B. Multivariate Regression Analysis

##### Do Positive Meta-cognition and Negative Meta-cognition Predict Employment Stress?

To examine whether positive meta-cognition and negative meta-cognition predicted college students' employment stress, we used OLS regression analysis (Table II). Table II contains information from three regression models that examined the relationship between measures of positive meta-cognition and negative meta-cognition and employment stress, while holding constant college student demographic variables. The demographic control variables (age, gender, major, grade) measures were not significant in all three final models. Model 1 indicated that positive meta-cognition was significantly associated with lower employment stress scores while controlling for college student demographics. Model 2 reported

that negative meta-cognition was related to higher levels of employment stress, when controlling for college student's age, major, gender, and grade.

TABLE II  
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES  
PREDICTING EMPLOYMENT STRESS (N=87)

Variable	PMCEQ	MCQ	Control				Adjusted -R <sup>2</sup>	F for change in R <sup>2</sup>
			Major	Age	Gender	Grade		
Model 1								
B	-.87***		1.86	1.40	-.76	1.38		
SE B	.19		1.745	1.281	3.908	2.234	.18	4.87**
β	-.49		.12	.18	-.03	.10		
Model 2								
B		.43**	1.08	-.09	.43	1.63		
SE B		.13	1.67	1.34	4.09	2.36	.10	2.82*
β		.35	.07	-.01	.02	.12		
Model 3								
B	-.74***	.30*	.23	.88	-1.68	1.77		
SE B	.19	.12	1.15	1.26	3.82	2.18	.23	5.26***
β	-.42	.24	.02	.11	-.06	.13		

\* p < .05, \*\* p < .01, \*\*\* p < .001.

Model 3 was the comprehensive model that included both measures of positive meta-cognition and negative meta-cognition. Regression results indicated that both positive meta-cognition and negative meta-cognition continued to be associated with employment stress. In detail, positive meta-cognition was associated with lower levels of employment stress at a statistically significant level (B = -0.74; p < .001), while negative meta-cognition was related with higher levels of employment stress at a statistically significant level (B = 0.30; p < .05). Furthermore, the standardized beta coefficient for positive meta-cognition (β = -.42) was larger than that associated with the negative meta-cognition (β = .24).

#### Which Type of Meta-cognition Predict Employment Stress more?

As shown in Table II, Model 1 and Model 2 had statistically significant explanation power. The adjusted - R<sup>2</sup> of Models 1 and 2 were compared to check whether positive or negative meta-cognition accounts for the variation in employment stress more. Model 1 (positive meta-cognition model) had a larger Adjusted - R<sup>2</sup> coefficient (.18) than Model 2 (negative meta-cognition model) (.10) indicating that Model 1 explained 23% of the variance in employment stress, whereas Model 2 explained 15% of the variance in employment stress. Therefore positive meta-cognition measures predict employment stress more than negative meta-cognition in a model that accounts for demographic control variables.

#### IV. DISCUSSION

Our hypotheses were supported in this study. Overall, results showed that positive meta-cognition and negative meta-cognition predicted employment stress among a sample of Korean university students. Moreover it was shown that positive meta-cognition was a stronger predictor of employment stress than negative meta-cognition.

Throughout our models, positive meta-cognition and negative meta-cognition were associated with employment

stress even when controlling for college student demographics. Positive meta-cognition was related with lower levels of employment stress at a significant level, while negative meta-cognition was associated with higher levels of employment stress. Furthermore, positive meta-cognition measures predicted employment stress more than negative meta-cognition in a model that accounts for demographic control variables. These results were in line with previous literature[2]-[12]-[24] that suggested that higher perceived stress is related with the higher negative meta-cognition. Previous research interpreted their results that negative meta-cognition was an important factor for perceived stress research. In addition, Beer and Moneta[9] suggested the positive meta-cognition predicted less perceived stress. The findings of Beer and Moneta[9] indicated that both the construct of negative meta-cognition and positive meta-cognition are needed to explain perceived stress. Thus, the results of our study suggest that positive meta-cognition can be a better significant predictor of the employment stress than negative meta-cognition. Therefore, future research is needed to consider positive meta-cognition as well as negative meta-cognition in predicting psychological variables such as stress.

#### V. CONCLUSION

Although this research has some limitations, there were some important analytical findings. Results from the current study indicated that positive meta-cognition is able to predict employment stress more than negative meta-cognition, even after controlling for demographic characteristics of the college students. Although the concept of positive meta-cognition is rarely used in meta-cognition research so far, these empirical findings may newly lend support for using positive meta-cognition as a useful psychological factor for understanding adaptive and positive aspects of human development. Hence, positive meta-cognition should be continuously studied in order to establish a firm empirical base.

#### REFERENCES

- [1] Kim, Young-Sang, "A study on life stress and coping style of college students.", Dissertation, *Taegu University*, 2003.
- [2] Kim, Hye-Eun, Park, Kyung, Jung, Eun-Hye & Han Ju-Yeon, "The Effects of perceived stress, dysfunctional meta-cognition on problematic drinking of female university student.", *The Korean Psychological Association: Health*, pp.340-341, 2009.
- [3] Kim, Min-Kyeong, "A phenomenological study on university students' happiness experience.", *Korean Journal of Youth Studies*, vol.18, pp.1-34, 2011.
- [4] Suh, Kyung-Hyun, "Relationships between stresses, problem-focused coping, upward/downward comparison coping and subjective well-being of college students." *Korean Journal of Youth Studies*, vol. 18, pp.217-236, 2011.
- [5] Kang, Kyeong-Hun, "A study on relationships among college students' self-differentiation, self-esteem and employment stress.", Dissertation, *Inje University*, 2011.
- [6] Kim, Min-Jung & Cho, Geung-Ho, "The influence of unemployment-related economic stress and caree attitude maturity on hopelessness and mental health in Korean youth.", *Korean Journal of Social and Personality Psychology*, vol. 23, pp.47-62, 2009.

- [7] Lazarus, R S, (1993). "Coping theory and research: Past, present, and future.", *Psychosomatic Medicine*, vol.55, pp. 234–247  
<http://dx.doi.org/10.1097/00006842-199305000-00002>.
- [8] Shim, Ji-Eun, "the relationship between job-seeking stress and depression in college students: the mediating roles of cognitive emotion regulation strategies.", *Human Understanding*, vol.32, 103-118, 2011.
- [9] Beer, N., and Moneta, G. B., "Coping and Perceived Stress as a Function of Positive Meta-cognitions and Positive Meta-Emotions.", *Individual Differences Research*, vol.10, pp.105-116, 2012.
- [10] Hwang, Seong -Won, "A study on Employment Stress of University Students.", Dissertation, *Dong-A University*, 1998.
- [11] Suh, In Kyun, Lee Yeon Sil, "The effect of university student's job-seeking stress on depression and despair: control effect of social support," *Journal of Future oriented Youth Society*, vol. 12, pp.117-147, 2015.
- [12] Park, Kyung., "The moderating effect of meta-cognition and mindfulness on the relation between perceived stress and depression." *The Korean Journal of Health Psychology*, vol. 15, pp.617-634, 2010.
- [13] Flavell, J. H., "Meta-cognition and cognitive monitoring: A new area of cognitive developmental inquiry.", *American Psychologist*, vol. 34, pp.906-911, 1979.  
<http://dx.doi.org/10.1037/0003-066X.34.10.906>
- [14] Cartwright-Hatton, S., & Wells, A., "Beliefs about worry and intrusions: the meta-cognitions questionnaire.", *Journal of Anxiety Disorders*, vol.11, 279-315, 1997  
[http://dx.doi.org/10.1016/S0887-6185\(97\)00011-X](http://dx.doi.org/10.1016/S0887-6185(97)00011-X).
- [15] Teasdale, J. D., "Meta-cognition, mindfulness and the modification of mood disorders.", *Clinical Psychology and Psychotherapy*, vol. 6, pp.146-156(Special Issue, Meta-cognition and Cognitive Behaviour Therapy), 1999.
- [16] Wells, A. & Davies, M., "The thought control questionnaire: a measure of individual differences in the control of unwanted thoughts.:", *Behaviour Research and Therapy*, vol. 32, pp.871-878, 1994  
[http://dx.doi.org/10.1016/S0887-6185\(97\)00011-X](http://dx.doi.org/10.1016/S0887-6185(97)00011-X).
- [17] Wells, A., "Meta-cognition and worry: a cognitive model of generalized anxiety disorder.", *Behaviour and Cognitive Psychotherapy*, vol. 23, pp.301-320, 1995  
<http://dx.doi.org/10.1017/S1352465800015897>.
- [18] Wells, A., "A metacognitive model and therapy for generalized anxiety disorder.", *Clinical Psychology and Psychotherapy*, vol. 6, pp.86-96(Special Issue, Meta-cognition and Cognitive Behaviour Therapy), 1999.
- [19] Wells, A., "Emotional disorders and meta-cognition: Innovative cognitive therapy.", *Chichester, UK: Wiley*, 2000.
- [20] Wells, A., "Meta-cognitive theory for anxiety and depression.", New York: *The Guilford Press*, 2000.
- [21] Beer, N., & Moneta, G. B., "Construct and concurrent validity of the Positive Meta-cognitions and Positive Meta -Emotions Questionnaire.", *Personality and Individual Differences*, vol. 49, pp.977-982, 2010  
<http://dx.doi.org/10.1016/j.paid.2010.08.008>.
- [22] Ha, Jung & Ahn, Hyunn-Ie., "Multiple mediator effect of meta-cognition on the relation of perceived stress, anxiety and generalized problematic internet use.", *The Korean Journal of Counseling and Psychotherapy*, vol. 25, pp.251-273, 2013.
- [23] Lazarus, R S and Folkman, S., "Stress, Appraisal, and Coping". New York: *Springer*, 1984.
- [24] Spada, M. M., Nikcevic, A. V., Moneta, G. B., & Wells, A., "Metacognition, perceived stress, and negative emotion.", *Personality and Individual Differences*, vol. 44, pp.1172–1181, 2008  
<http://dx.doi.org/10.1016/j.paid.2007.11.010>.
- [25] Wells, A., & Cartwright-Hatton, S., "A short form of the meta-cognitions questionnaire: properties of the MCQ-30.", *Behaviour research and therapy*, vol. 42, pp.385-396, 2014.  
[http://dx.doi.org/10.1016/S0005-7967\(03\)00147-5](http://dx.doi.org/10.1016/S0005-7967(03)00147-5)
- [26] Seol, Soon-Ho., "Cognitive appraisal and control strategies for worry and obsession.", Dissertation, *Seoul National University*, 2004.
- [27] Kang, Yu-Ri, "The influence of jobs seeking stress on their career maturity dance majoring students", Dissertation, *Dankook University*, 2006.