

# The Effect of Employment Stress and Growth Mindset on the Happiness of Korean College Students: The Moderated Mediation Model of Grit

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## ABSTRACT

**Background/Objectives:** The purpose of this study was to verify the moderated mediation effect of grit on the mediating effect of growth mindset in the relationship between employment stress and happiness in 364 college students in Korea.

**Method/Statistical Analysis:** For statistical analyses, reliability analysis, correlation analysis, and moderated mediation effect analysis were performed using SPSS Win.21.0 and PROCESS macro for SPSS version 3.2.

**Findings:** The results of the study showed a statistically significant correlation between happiness and growth mindset and grit. Employment stress was negatively correlated with happiness, growth mindset, and grit. In addition, the grit of college students moderated the relationship between employment stress and happiness via the growth mindset.

**Improvements/Applications:** These results will be used as a new model for grit to control the emotional stress of college students through the growth mindset.

**Keywords:** *Employment stress, Growth mindset, Happiness, Moderated mediation, Grit, PROCESS macro*

## Introduction

With the continued difficulties of the Korean economy, the economic growth rate and job insecurity have led to serious youth unemployment. In the third quarter of 2018, according to the Economical Active Population Survey, the unemployment rate among people in their 20s was 9.4%, while the unemployment rate of college graduates was 9.1%, and the employment rate of people in their 20s was 58.3%, which means that the total employment rate was less than 61.1 percent<sup>1</sup>. Although many policy efforts have been made to solve the youth employment difficulties at the national level,

employment stress is becoming more and more common in college students who recognize that a college education does not guarantee employment. Many college students are faced with the greatest stress due to their academic, career, and employment problems<sup>2</sup>, and it is difficult for them to separate college stress from employment stress because it is an extension of the process of preparing for employment. As such, employment is a major concern and a major source of stress for college students and psychological difficulties are also a cause for concern. In particular, it is necessary to pay attention to the relationship between employment stress and happiness because the employment stress of college students is closely related to the desire to live a stable life or a happy life through a better job<sup>3</sup>. In the same context, previous research on employment stress and the happiness of college students reported that as they experienced more stress from work-related anxieties and conflicts, happiness decreased<sup>3-6</sup>, and they found ways to promote happiness in response to the situations threatening their happiness.

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However, even in an individual in the same stressful situation as another person, the results can vary depending on each individual's psychological resources. For example, mindset, a way to perceive one's ability and grit, manifested as patience and enthusiasm for achieving long-term goals, may be important factors in maintaining high happiness in spite of stressful situations. According to previous research, such as that by Cury et al.<sup>7</sup> and Yeager et al.<sup>8</sup>, the way an individual perceives their ability plays a decisive role in the success of that person. In other words, a person with a growth mindset<sup>9</sup> who believes that he/she can improve his/her abilities through training, sees difficult situations as an opportunity to improve him/herself by exerting more effort, thereby, leading to better results. In this paper, we will consider the growth mindset as a mediator in the relationship between employment stress and happiness and examine the possibility of its role as a protective factor.

Grit is defined as a persistent effort to achieve long-term goals and a passion to consistently maintain goals<sup>10</sup>. Because career decisions and career choices are not made as single decisions at a particular point in time, but rather a series of decision-making processes over a relatively long period of time<sup>11</sup>, an attribute of grit is expected to be important for university students experiencing employment stress. Previous studies have shown that grit was positively related to happiness<sup>12,13</sup> and had a positive relationship with a growth mindset<sup>14,15</sup>. Thus, the level of grit was reported to mediate the effects of negative stress on negative thinking<sup>16</sup>. These results suggest that a high grit level can play a positive role in the growth mindset by keeping the target in sight, reducing the urge to quit, even in difficult environments, and buffering the effect of exposure to severe employment stress so that it does not significantly reduce happiness. Previous studies have suggested that the relationship between employment stress and the growth mindset will differ depending on the level of grit and the influence of the mediation effect of a growth mindset on employment stress and that happiness may be predicted by one's level of grit.

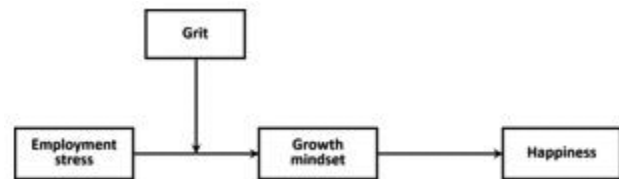
Therefore, the purpose of this study was to examine the effect of employment stress and growth mindset on happiness in Korean college students and to provide a new model for the happiness enhancement of college students by verifying the moderated mediation effect of grit.

To achieve this goal, the following research questions were investigated. First, what is the relationship between

employment stress, happiness, growth mindset, and grit? Second, does grit moderate the relationship between employment stress and happiness via a growth mindset?

## Research Method

**Research Model:** The main analytical method of this study was the moderated mediation analysis using Model 7 of PROCESS macro ver.3.2. The conceptualized research model is shown in Figure 1.



**Figure 1: Conceptual Research Model**

**Survey Subject and Data Collection Method:** 364 college students in D of Chungnam province and D metropolitan city were included in the study. There were 164 women (45.1%) and 200 men (54.9%) in the study. Most participants were under age 20 (175 persons, 48.1%), 107 (29.4%) were aged 21 to 22 years old, and 82 (22.5%) people were over 23 years old.

## Research Tools

**Employment Stress:** In order to measure the employment stress of college students, we used the employment stress test developed by Hwang<sup>17</sup> based on the index of Connell Medical the University (Connell Medical Index), revised by Kang<sup>18</sup>. The employment stress test consists of 22 subscales and was measured on a 5-point Likert scale. The higher the score, the higher the level of employment stress. Cronbach's  $\alpha$  value for the employment stress test used in this study was 0.895.

**Happiness:** We used the Subjective Happiness Scale developed by Lyubomirsky and Lepper<sup>19</sup>. The scale consists of four items on a 7-point Likert scale. The higher the score, the higher the happiness. Cronbach's  $\alpha$  for the Subjective Happiness Scale was 0.782.

**Growth Mindset:** The growth mindset scale developed by Dweck<sup>9</sup> and used by Ayers<sup>20</sup> was used in this study. The scale consists of 20 items on a 5-point Likert scale. The higher the score, the higher the growth mindset. The reliability of the growth mindset scale used in this study determined by Cronbach's  $\alpha$  was 0.833.

**Grit:** We used the grit (grit-O) scale developed by Duckworth & Quinn<sup>21</sup>. It consists of a total of 12 questions. Measurements are made on a 5-point Likert scale and the higher the score, the higher the grit. The reliability of the grit-O scale used in this study determined by Cronbach’s  $\alpha$  was 0.807.

**Data Analyses:** In this study, SPSS Win. 21.0 and SPSS PROCESS macro proposed by Hayes<sup>22</sup> was used. SPSS Win. 21.0 was used for descriptive statistical analysis, reliability analysis, and mean comparison analysis. The mediation effect, moderation effect, and moderated mediation analyses were performed using SPSS PROCESS macro. The bootstrap method was applied to verify this.

**Results and Discussion**

**Correlation and Descriptive Statistical Analyses:** Pearson’s correlation analysis was used to identify correlations among the variables. The results are shown in Table 1. Employment stress had a negative and significant correlation with happiness, growth mindset, and grit. There was a statistically significant positive correlation between happiness, growth mindset, and grit.

These results are consistent with the finding that stress in adolescents had a significant negative correlation with growth mindset and happiness<sup>23</sup> and there was a positive relationship between growth mindset and grit<sup>24,14,15</sup>. These results agree with another study which reported a statistically positive correlation between growth mindset and happiness<sup>25,23</sup>.

**Table 1: Results of correlation and descriptive statistics**

	Employment stress	Happiness	Growth mindset	Grit	M	SD
Employment Stress	1				2.3009	.68265
Happiness	-.509**	1			4.7479	1.01868
Growth mindset	-.353**	.401**	1		3.5443	.46591
Grit	-.154**	.344**	.329**	1	3.1635	.52431

\*\* $p < .01$

**Moderated Mediation Verification:** In order to verify whether grit moderated the mediating effect of growth mindset on the empathy, stress, and happiness of Korean college students, we analyzed the data using Model 7 of the PROCESS macro for SPSS proposed by Hayes<sup>22</sup>. For verification of the moderated mediation, the values for each variable were averaged, 5,000 repeats were made for bootstrapping, and a 95% confidence interval was set. The results of the analysis are shown in Figure 2 and Table 2.

First, in the mediating model, employment stress had a negative effect ( $\beta = -0.2030, p < .001$ ) on growth mindset and grit had a positive effect on growth mindset ( $\beta = 0.2244, p < .001$ ), both of which were statistically significant. The interaction between employment stress and grit was significant ( $\beta = -0.1623, p < .001$ ) and the increase in  $R^2$  by the interaction was also significant ( $\Delta R^2 = 0.0254, p < .001$ ).

These results are similar to those of Hwang & Lee<sup>23</sup> who found that stress negatively affected growth mindset. The study also found that parenting stress had a negative effect on growth mindset<sup>26</sup>.

The belief in self-change also depends on the level of enthusiasm and the persistence toward long-term goals. This is supported by the findings of Dweck<sup>9</sup> that the higher the grit, the greater the growth mindset and the higher the growth mindset, the higher the grit. However, previous research has shown that most growth mindset had a positive effect on grit<sup>27,28</sup>. In contrast, the study on the moderating effect of grit by Kim & Ko<sup>29</sup> is the only one which showed grit moderated the negative effect of hotel employees’ employment anxiety caused by trying to satisfy customers’ demands. However, grit and growth mindset are complementary concepts rather than concepts such as cause and result. The conditional effect of grit, a moderating variable, was significant at all grit levels, low (M-1SD), average (M) and high (M+1SD), indicating that the interaction of employment stress and grit affected growth mindset.

We used the Johnson-Neyman method, a floodlight method, to determine the significance of the conditional effects of employment stress and grit interaction depending on the grit values. Grit was responsible for moderating the relationship between employment stress

and growth mindset in areas where the grit value was greater than -0.6802.

Employment stress had a negative effect on happiness ( $\beta = -0.6268, p < .001$ ), while a growth mindset had a positive and statistically significant effect on happiness ( $\beta = 0.5532, p < .001$ ). The path of employment stress  $\rightarrow$  growth mindset  $\rightarrow$  happiness was significant for low (M-1SD), medium (M), and high grit values (M+1SD). Therefore, the moderated mediation effect of grit in the effect of employment stress on happiness via a growth mindset was verified.

The happiness of Korean college students was negatively influenced by employment stress but it was positively influenced by a growth mindset. This is the same result as a study which reported employment stress negatively affected the happiness of college students<sup>30</sup>.

In addition, this is the same result as a study which reported that stress in adolescents negatively affected happiness, while a growth mindset had a positive effect on happiness<sup>23</sup>. These results are in line with research findings that stress affected happiness negatively<sup>4-6</sup>.

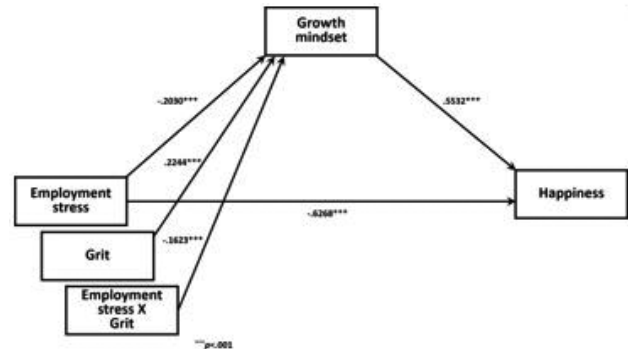


Figure 2: Statistical model of moderated mediation

Table 2: Results of moderated mediation effect

Mediating variable model (DV: Growth mindset)						
Variables	$\beta$	SE	t value	p	LLCI*	ULCI**
Constant	3.5353	.0217	162.7878	.0000	3.4926	3.5780
Employment stress $\rightarrow$ Growth mindset	-.2030	.0321	-6.3246	.0000	-.2661	-.1399
Grit $\rightarrow$ Growth mindset	.2244	.0423	5.3030	.0000	.1412	.3076
Employment stress $\times$ Grit $\rightarrow$ Growth mindset	-.1623	.0472	-3.4372	.0007	-.2552	-.0695
Test of highest order unconditional interaction:						
R <sup>2</sup> -change	R <sup>2</sup>	F	p			
Employment stress x Grit	.0254	11.8145	.0007			
Conditional effects of employment stress at values of grit:						
grit	Effect	se	t	p	LLCI*	ULCI**
-.5243	-.1179	.0420	-2.8085	.0052	-.2005	-.0353
.0000	-.2030	.0321	-6.3246	.0000	-.2661	-.1399
.5243	-.2881	.0390	-7.3790	.0000	-.3649	-.2113
Significance area of conditional effect of employment stress at values of grit:						
Grit	Effect	se	t	p	LLCI*	ULCI**
-1.1635	-.0141	.0657	-.2154	.8296	-.1433	.1150
-1.0176	-.0378	.0598	-.6329	.5272	-.1553	.0797
-.8718	-.0615	.0541	-1.1373	.2562	-.1678	.0448
-.7260	-.0852	.0487	-1.7492	.0811	-.1809	.0106
-.6802	-.0926	.0471	-1.9666	.0500	-.1852	.0000
<b>-.5801</b>	<b>-.1088</b>	<b>.0437</b>	<b>-2.4887</b>	<b>.0133</b>	-.1948	-.0228
-.4343	-.1325	.0394	-3.3664	.0008	-.2099	-.0551
-.2885	-.1562	.0358	-4.3633	.0000	-.2266	-.0858
-.1426	-.1799	.0333	-5.4032	.0000	-.2453	-.1144
.0032	-.2035	.0321	-6.3430	.0000	-.2666	-.1404

Conted...

.1490	-.2272	.0323	-7.0248	.0000	-.2908	-.1636
.2949	-.2509	.0340	-7.3743	.0000	-.3178	-.1840
.4407	-.2746	.0369	-7.4349	.0000	-.3472	-.2019
.5865	-.2982	.0408	-7.3093	.0000	-.3785	-.2180
.7324	-.3219	.0454	-7.0912	.0000	-.4112	-.2326
.8782	-.3456	.0505	-6.8414	.0000	-.4449	-.2462
1.0240	-.3693	.0560	-6.5924	.0000	-.4794	-.2591
1.1699	-.3929	.0618	-6.3592	.0000	-.5145	-.2714
1.3157	-.4166	.0678	-6.1469	.0000	-.5499	-.2833
1.4615	-.4403	.0739	-5.9563	.0000	-.5857	-.2949
1.6074	-.4640	.0802	-5.7863	.0000	-.6216	-.3063
1.7532	-.4876	.0865	-5.6347	.0000	-.6578	-.3174
<b>Dependent variable model (DV: Happiness)</b>						
<b>Variables</b>	<b>β</b>	<b>SE</b>	<b>t value</b>	<b>p</b>	<b>LLCI*</b>	<b>ULCI**</b>
Constant	2.7872	.3633	7.6710	.0000	2.0727	3.5017
Employment stress → Happiness	-.6268	.0694	-9.0260	.0000	-.7634	-.4902
Growth mindset →	.5532	.1018	5.4370	.0000	.3531	.7533
<b>Conditional indirect effects of X on Y (Employment stress→Growth mindset→Happiness):</b>						
<b>Grit</b>	<b>Effect</b>	<b>Boot SE</b>	<b>Boot LLCI*</b>	<b>Boot ULCI**</b>		
-.5243	-.0652	.0294	-.1314	-.0162		
.0000	-.1123	.0267	-.1680	-.0653		
.5243	-.1594	.0354	-.2279	-.0905		

\*LLCI=The lower boundary of the indirect effect within the 95% confidence interval

\*\*ULCI=The upper boundary of the indirect effect within the 95% confidence interval

For the moderated mediation analysis of grit, the Model 7 of PROCESS macro was used and the relationship of grit in employment stress and growth mindset was divided into low, medium, and high groups in Figure 3. As employment stress increased, growth mindset decreased according to grit's three levels (M ± SD, M). Such a tendency was lower in the high grit group compared to the medium and lower grit groups.

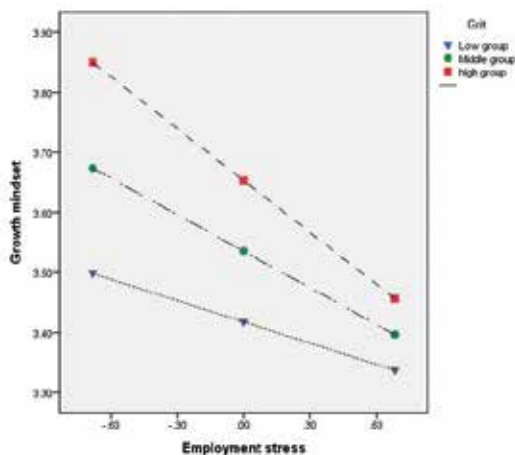


Figure 3: Moderating effect analysis of grit

### Conclusion

Based on the results of the study, the following findings are reported: First, Pearson's correlation analysis showed that there was a statistically significant correlation between employment stress and happiness and growth mindset and grit and that employment stress was negatively correlated with happiness, growth mindset, and grit. Second, the moderated mediation effect analysis showed that grit moderated the path from employment stress to happiness via a growth mindset. In other words, grit played a role in controlling the mediating effect of a growth mindset in relation to employment stress and happiness. Therefore, the moderated mediation effect of grit was verified.

This study examined the theoretical validity of previous studies by analyzing grit's moderated mediation role in the effects on employment stress and growth mindset on happiness. This study was meaningful in that it attempted to integrate the results of previous studies by empirically analyzing the mediating

effect of a growth mindset and the moderating effect of grit. Nevertheless, suggestions for future research are as follows: First, scholars' interest in grit and growth mindset has increased but research on the moderating effect and moderated mediation effect of these variables is insufficient. In the future, it is necessary to identify the various roles of these variables, as well as the active research of grit and growth mindset. Second, this study revealed that the relationship between employment stress and the happiness of college students was mediated by a growth mindset and grit.

This is noteworthy in that this research verified effective variables which could enhance the happiness of college students, individuals who will soon enter the workforce. Therefore, the development and application of programs to improve the grit and growth mindset of college students are needed.

**Ethical Clearance:** Not required

**Source of Funding:** Self

**Conflict of Interest:** Nil

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