Moderated Mediating Model of Growth Mindset in the Relationship between Self-Esteem, Gratitude and Career Decision Self-Efficacy

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Abstract

Background: Career decision self-efficacy is very important when adolescents choose career or set goals and perform career-related actions. Even if the youth have decided on their career path in the high school scene, their confidence, anxiety level, and external conflict are high, so various efforts are needed. In particular, among the recently emerging career-related variables, there are insufficient studies to promote career decision-making by using the gratitude or growth mindset. In addition, studies that apply these research results to special adolescents are still lacking.

Objectives: This study investigated the moderated mediating effect of growth mindset in the relationship between self-esteem and career decision self-efficacy through gratitude for high school students in Korea and aimed to provide basic data that can promote career decision self-efficacy.

Methods: The subject of the study was selected by using purposive sampling method, and for the survey for data collection, 300 questionnaires were distributed to high school students attending three high schools in H and Y districts in Chungcheongnam-do in Korea, and 242 copies were collected. For data analysis, SPSS PC+ ver. 25.0 and SPSS PROCESS macro 4.0 were used, and frequency analysis, reliability analysis, correlation analysis, and moderated mediating effect analysis were performed.

Results: The research results are as follows. First, as a result of the correlation analysis between major variables, self-esteem had a significant positive correlation with gratitude, growth mindset, and career decision self-efficacy. Second, as a result of analyzing the moderated mediating effect of the growth mindset, the growth mindset moderated the path of self-esteem, gratitude, and career decision self-efficacy.

Conclusions: This study confirmed that high school students' self-esteem can improve their career decision self-efficacy by using gratitude disposition and growth mindset.

Keywords: gratitude, self-esteem, growth mindset, career decision self-efficacy, moderated mediating effect, PROCESS macro.

1. Introduction

For adolescents, self-esteem is an important internal variable that helps in all areas of performance given to individuals (Park, 2018). It has been reported that self-esteem influences the career path of adolescents and tends to make career goals clearer and higher confidence[1]. In addition, adolescents with high self-esteem have low career barriers and high level of career decision[2]. Therefore, for adolescents, self-esteem has a decisive effect on various factors necessary to grow into competent and healthy adults as well as being able to prepare well for their careers[3].

Career decision self-efficacy is a concept originating from self-efficacy, and is a belief in one's own ability to plan and perform the actions necessary to complete a targeted task[4]. It is very important when choosing a career or setting goals and performing career-related actions[5]. Even if a career path was decided in the high school, there were various subgroups that had difficulties in putting it into action according to uncertainty, anxiety level, and external conflict[6,7]. In this way, when people experience difficulties in actual career behavior, career decision self-efficacy is a determinant of behavior and can lead to actual behavior[8].

According to a previous study, in a study of high school students, the group with high self-esteem was found to actively engage in career preparation behavior9, and high self-esteem had a positive effect on career decision self-efficacy10. As such, there is a causal relationship between self-esteem and career decision self-efficacy, so it is important that should not be overlooked for young people who have to perform tasks in various fields. To elucidate the mechanism of the relationship between these two variables, we applied the gratitude as a mediating variable and the growth mindset as the moderating variable.

Gratitude is a positive emotion felt after recognizing the value of a specific situation, person, action, or object, or a positive emotion that arises when recognizing that others have received favor or help11. Self-esteem was reported as a variable influencing gratitude. People with high self-esteem expressed gratitude better than those with low self-esteem when expressing gratitude12. Also, it was reported that self-esteem and gratitude influence each other13,14, and gratitude was reported to influence career-related variables15. And, in a study on adults, gratitude had a positive effect on career decision self-efficacy16.

Growth mindset refers to the belief that ability and intelligence can be changed through effort and learning17, but there are few prior studies moderating the relationship between gratitude and career decision self-efficacy. However, in studies similar to this study, the moderated mediating role of the growth mindset was studied18,19. It is necessary to understand the mechanism in the relationship between self-esteem and career-decision self-efficacy by analyzing whether the growth mindset moderates the mediating effects of gratitude between self-esteem and career decision self-efficacy.

Therefore, the purpose of this study is to provide basic data that can enhance the self-efficacy of career decision in adolescents by verifying whether growth mindset mediates the mediating effect of gratitude in the relationship between self-esteem and career decision self-efficacy.

Therefore, the purpose of this study is to provide basic data that can enhance the self-efficacy of career decision in adolescents by verifying whether growth mindset moderates the mediating effect of gratitude in the relationship between self-esteem and career decision self-efficacy. The research questions were set as follows. First, what is the correlation between self-esteem, career decision self-efficacy, gratitude, and growth mindset? Second, does growth mindset moderates the mediating effect of gratitude in self-esteem and career decision self-efficacy?

2.   Objectives

First, this study analysed the correlation between self-esteem, career decision self-efficacy, gratitude, and growth mindset. Second, this study confirmed that growth mindset moderated the mediating effect of gratitude in self-esteem and career decision self-efficacy. Third, this study addressed the improvement to increase career decision self-efficacy by using gratitude and growth mindset for high school students in Korea.

3.   Methods

1) Research Model

A model was established to verify the moderated mediating effect (conditional indirect effect) that the growth mindset moderates the path of self-esteem → gratitude → career decision self-efficacy.

This model was analyzed according to the moderated mediating effect analysis procedure, which is Model 14 of PROCESS macro ver. 4.0. The detailed model is shown in [Figure 1].
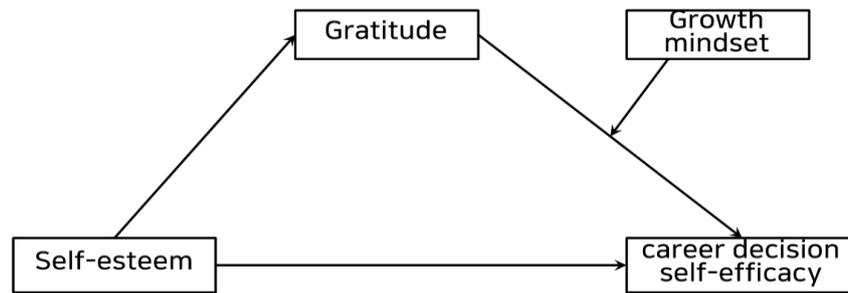
[Figure 1] Research model

2) Research subjects and data collection methods

The subject of the study was selected by using purposive sampling method, and for the survey for data collection, 300 questionnaires were distributed to high school students attending three high schools in H and Y districts in Chungcheongnam-do for one month in May 2020 and 242 copies were collected. After meeting with the principal and homeroom teacher, explaining the purpose of the survey, consent was obtained. The survey was started after receiving consent form for the selected students, and it was notified that if the participant wanted to stop the survey during the survey, it could be stopped or discarded. After the survey, a gift was provided in return. The total number of subjects used in the analysis was 241.

As for the general characteristics of the survey subjects, by gender male was 70.5% and female was 29.5%. Male was than half. By grade, 2nd graders accounted for the most with 46.1%, followed by 3rd graders with 31.1% and 1st graders with 22.8%. As for the economic level of households, the middle was the most at 57.1%, the upper level was 27.1%, and the lower level was 15.8%.

3) Measuring tool

(1) Self-esteem

The self-esteem scale was measured using the Rosenberg20 Self-esteem Scale (RSES), which was translated by Jeon21 from the scale developed by Rosenberg20. This scale is a total of 10 items, ranging from 1 point for 'not at all' to 5 points for 'strongly agree', with a higher score indicating higher self-esteem. In this study, the self-esteem reliability Cronbach's α was .868.

(2) Career decision self-efficacy

Career decision self-efficacy -making developed by Taylor and Betz22 and measured by Kim23 was measured, which was a scale that verified the validity of high school students. This scale has a total of 19 items, on a 5-point Likert scale ranging from 1 point for 'not at all' to 5 points for 'strongly agree'. The reliability of Cronbach's α was as high as .925.

(3) Gratitude

Gratitude was measured using a scale developed by McCullough et al.24 and adapted by Kwon et al.25. Cronbach's α was .87 for reliability of audit disposition. This scale has a total of 6 items, and it is a 5-point Likert scale ranging from 1 point for 'not at all' to 5 points for 'strongly agree'. In this study, Cronbach's α was .856, which was an appropriate level for the reliability of gratitude.

(4) Growth mindset

The growth mindset scale developed by Dweck17 and adapted by Lee, Park, and Hwang26 was used. This scale consists of 8 items, 4 items measuring belief in change in intelligence and 4 items measuring belief in personality change. The measurement is on a 5-point Likert scale ranging from 1 for "not at all" to 5 for "always", with a higher score indicating a higher growth mindset. In this study, Cronbach's α was .775, which was an appropriate level.

4) Data analysis

The data analysis of this study was performed using SPSS PC+ Win. 25.0 and the PROCESS macro version 4.0 for SPSS proposed by Hayes27. Descriptive statistics, reliability analysis, frequency analysis, and correlation analysis were performed using SPSS Win. 25.0, and moderated mediating effect analysis using PROCESS macro 4.0. Bootstrap was used as the verification method, and the confidence interval was set at 95%, the number of samples was 5,000, and the independent and moderating variables were centered on the mean.

4. Results

1) Correlation and descriptive analysis

Pearson's correlation analysis was performed to understand the correlation of major variables, and the results are shown in <Table 1>. Self-esteem, gratitude, growth mindset, and career decision self-efficacy were all positively correlated with each other. In particular, the correlation coefficient between self-esteem and career decision self-efficacy was the highest (r=.500, p<.01), followed by the correlation coefficient between gratitude and self-esteem (r=.460, p<.01), and the correlation coefficient between disposition and career decision self-efficacy (r=.419, p<.01).

As a result of descriptive statistical analysis, the average gratitude was the highest at 3.9620, followed by the average career decision self-efficacy of 3.5870 and self-esteem average 3.5346, and the average growth mindset was the lowest with an average of 3.3195. Self-esteem, gratitude, growth mindset, and career decision self-efficacy were all higher than the median score of 3 points.

<Table 1> Correlation and descriptive statistics of major variables

	Self-esteem	Gratitude	Growth mindset	Career decision self-efficacy
Self-esteem	1			
Gratitude	.460**	1		
Growth mindset	.267**	.239**	1	
Career decision self-efficacy	.500**	.419**	.139*	1
M	3.5346	3.9620	3.3195	3.5870
SD	.66661	.69941	.66053	.63684

2) The moderated mediating effect of the growth mindset on the relationship between self-esteem, gratitude and career decision self-efficacy

In order to verify whether the growth mindset moderates the mediating effect of gratitude in the relationship between self-esteem and career decision self-efficacy, the SPSS PROCESS macro model 14 proposed by Hayes (2017) was used to analyse. The number of bootstrap samples was

set at 5,000 and the confidence interval was set at 95%, and the gratitude and growth mindset were centered on the average, and the analysis results are shown in <Table 2>.

Self-esteem had a significant positive effect on gratitude (.4825, p<.001), and gratitude also had a significant effect on career decision self-efficacy (.2498, p<.001).

The interaction term between gratitude and growth mindset had a significant positive effect on career decision self-efficacy (.1193, p<.05), and growth mindset moderated the relationship between gratitude and career decision self-efficacy. In other words, the higher the gratitude, the higher the self-efficacy of career decision, and the higher the growth mindset, the more this influence of the gratitude on the self-efficacy of career decision increases.

Three conditions (M, M±SD) were given according to the growth mindset value in order to understand the conditional effect of gratitude on career decision self-efficacy. As a result of the analysis, the conditional effect of gratitude was significant when the growth mindset was high (M+SD), average (M), and low (M-SD). It was also found that the conditional effect of the gratitude on career decision self-efficacy increased when the growth mindset increased.

Johnson-Neyman analysis was performed to more specifically identify the significance area of the conditional effect of gratitude. As a result of the analysis, the conditional effect of gratitude on career decision self-efficacy was significant in the area where the growth mindset value was higher than -.9396. .

Since the moderating effect of the growth mindset has been verified, the results of visualizing the moderating effect to understand the interaction pattern are shown in <Figure 2>. According to the growth mindset value, three groups (low group, medium group, and high group) were divided, and when the gratitude increased in all three groups, the career decision self-efficacy also increased. In the group with a low growth mindset, the career decision self-efficacy gradually increased as the gratitude increased, whereas the group with a high growth mindset showed a steeper increase in career decision self-efficacy as the gratitude increased. In other words, as the gratitude increases, the career decision self-efficacy also increases, and even if the gratitude increases the same, the career decision self-efficacy of the group with a high growth mindset increases more.
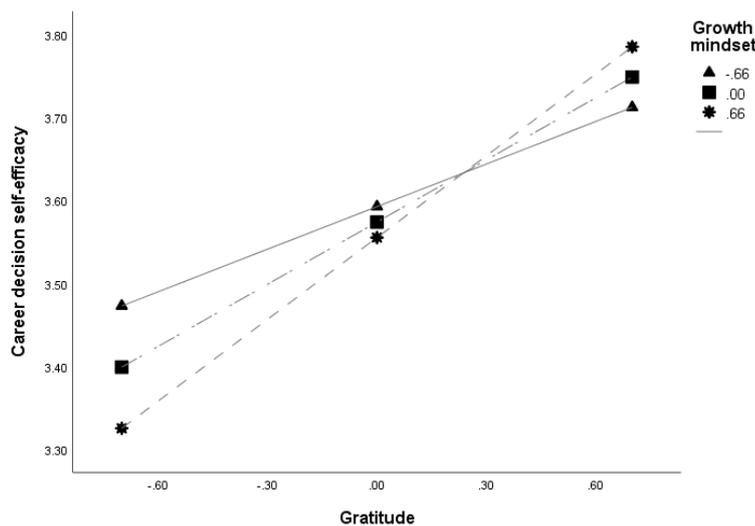
<Table 2> Analysis results of conditioning effect in the adjusted mediation model

Mediating variable Model (DV: Gratitude)						
Variable	*coeffect*	se	t-value	*p*	LLCI[*]	ULCI[**]
constant	-1.7055	.2167	-7.8688	.0000	-2.1325	-1.2786
Self-esteem	.4825	.0603	8.0069	.0000	.3638	.6012
Dependent variable model (DV: career decision self-efficacy)						
Variable	*coeffect*	se	t-value	*p*	LLCI[*]	ULCI[**]
Constant	2.2518	.2124	10.6034	.0000	1.8335	2.6702
Self-esteem	.3740	.0593	6.3075	.0000	.2572	.4908
Gratitude	.2498	.0579	4.3181	.0000	.1359	.3638
Growth mindset	-.0282	.0548	-.5147	.6072	-.1361	.0797

Gratitude x Growth Mindset	.1193	.0596	2.0010	.0465	.0018	.2367
Conditional effect of gratitude according to growth mindset value						
Growth mindset	Effect	se	t-value	p	LLCI*	ULCI**
-.6605(M-SD)	.1711	.0615	2.7832	.0058	.0500	.2922
.0000(M)	.2498	.0579	4.3181	.0000	.1359	.3638
.6605(M+SD)	.3286	.0776	4.2365	.0000	.1758	.4814
Conditional effect area of gratitude according to growth mindset as a moderating variable						
Growth mindset	Effect	se	t-value	p	LLCI*	ULCI**
-1.9445	.0179	.1161	.1546	.8773	-.2108	.2467
⋮						
-1.0383	.1260	.0736	1.7123	.0882	-.0190	.2710
-.9396	**.1378**	**.0699**	**1.9701**	**.0500**	**.0000**	**.2756**
-.8570	.1476	.0671	2.1999	.0288	.0154	.2798
⋮						
1.6805	.4502	.1274	3.5347	.0005	.1993	.7012

*LLCI = lower bootstrap value within 95% confidence interval

**ULCI=Upper Bootstrap value with 95% confidence interval

[Figure 2] The moderating effect of the growth mindset on the relationship between

gratitude and career decision self-efficacy

Table 3 shows the results of analysing the direct effect and conditional indirect effect on the path from self-esteem to career decision self-efficacy. The direct effect between self-esteem and career decision self-efficacy was .3740 (.2572~.4908), which was significant because 0 was not included between the lower and upper bounds of bootstrap within the 95% confidence interval. On the path from self-esteem through gratitude to career decision self-efficacy, the conditional indirect effect

was significant when the growth mindset was low (.0825, .0132~.1676), average (.1206, .0551~.1864), and high (.1586, .0607~.2432), because 0 was not included between the lower and upper bounds of the bootstrap within the 95% confidence interval. That is, the moderated mediating effect of the growth mindset was verified in the path of self-esteem → gratitude → career decision self-efficacy.

<Table 3> Results of direct effect and conditional indirect effect analysis

Direct effect (self-esteem → career decision self-efficacy)					
Effect	se	t-value	p	BootLLCI*	BootULCI**
.3740	.0593	6.3075	.0000	.2572	.4908
Conditional indirect effect (self-esteem → gratitude → career decision self-efficacy)					
Growth mindset	Effect	se	LLCI*	ULCI**	
-.6605(M-SD)	.0825	.0393	.0132	.1676	
.0000(M)	.1206	.0340	.0551	.1864	
.6605(M+SD)	.1586	.0457	.0607	.2432	

5. Discussion

This study aimed to identify the moderated mediating effect of the growth mindset on the link between self-esteem and career decision self-efficacy through gratitude in high school students. The discussion of the study is as follows.

First, as a result of the correlation analysis between major variables, there was a significant positive correlation between self-esteem, gratitude, growth mindset and career decision self-efficacy. These results were consistent with the results showing that there was a positive correlation between the career decision self-efficacy and self-esteem of college students28, and there was a positive correlation between the gratitude and career decision self-efficacy16, and that there was a positive correlation between gratitude and growth mindset29.

Second, as a result of analyzing the moderated mediating effect of the growth mindset, the growth mindset moderated the path from self-esteem to career decision self-efficacy via gratitude. Base on this result, as the growth mindset raises the relationship between self-esteem and career decision self-efficacy, we could propose an important model for the career development of high school students using the growth mindset.

Firstly, there were significant and positive correlation between self-esteem, gratitude, growth mindset and career decision self-efficacy.

Secondly, the growth mindset moderated the mediating effect of gratitude between self-esteem and career decision self-efficacy in high school students in Korea.

When making suggestions for follow-up research centering on this study, first, the subjects of this study were sampled from some regions in Chungcheongnam-do and centered on humanities high schools. It is thought that the process of preparing students for their careers varies according to the characteristics of the school and the social atmosphere, and there is a limit to generalizing this. Therefore, it would be desirable to conduct research through the characteristics of schools and

nationwide sampling in the future. Second, this study was limited to high school students. However, considering the rapid maturation of children and the prolonged adolescence, in-depth and detailed follow-up studies are needed targeting adolescents of various age groups. Despite the limitations of this study, this study is meaningful in that it presented a new model that can enhance career decision self-efficacy by verifying whether growth mindset moderates the mediating effect of gratitude in the effect of self-esteem on career decision self-efficacy.

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