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The reciprocal longitudinal relationship between career maturity and goal consciousness in Korean adolescents

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Abstract. The purpose of this study was to verify the reciprocal longitudinal relationship between career maturity and goal consciousness in Korean adolescents. To achieve this purpose, the longitudinal data of students who were sixth graders in 2012, ninth graders in 2015, and twelfth graders in 2018 were analyzed using an autoregressive cross-lagged model. The results of the analysis are as follows: First, previous career maturity and goal consciousness in adolescents have a continuing effect on subsequent career maturity and goal consciousness. Second, the career maturity significantly influenced the goal consciousness of later adolescents. Third, the goal consciousness significantly influenced subsequent career maturity. This study confirmed the mutual longitudinal effects of the autoregressive cross-lagged model among adolescent career maturity goal consciousness. The results of this study confirmed that career maturity and goal consciousness have a reciprocal longitudinal relationship. These results suggest that career education is needed from the early stage of adolescence.

Keywords: Career maturity, goal consciousness, autoregressive cross-lagged model, Korean adolescents, Seoul education, longitudinal study

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INTRODUCTION

The most worrisome topic among adolescents aged between 13 and 18 in South Korea is studying (47.3 %), and the main purpose of education for teenagers who want to get an education above college is to have a good job (52.9 %), followed by to develop ability and aptitude (35.1%) (Statistics Korea, Ministry of Gender Equality and Family, 2019). That is, Korean young people have many concerns and anxieties about their futures and careers. Although teenagers devote themselves to study under burdensome stress, it is one of the most serious problems of today's education that young students do not understand how their studies are closely related with their futures (Kwak, 2013). In order to solve this problem, the government of the Republic of Korea continuously focuses on young people's careers nationwide and actively pursues career-related policies and systems such as Supporting Students Personal Career Design (Jung et al., 2015).

Many researchers have identified that multiple variables affect career maturity in the search for any statistically significant static relationships (Baek & Chung, 2017; Nam & Kim, 2018; Seong, 2014), that having future goals has a static effect on career maturity (Kim & Sohn, 2014), and lifetime goal direction is an important variable in career maturity (Cheng & Park, 2018). Sahu, Takur, and Agrawal (2017) stated that individuals with a high degree of career maturity research professions and conduct activities to achieve their goals.

Choosing a career path in adolescence is a major process of determining the direction of life beyond simply deciding on college and profession (Jeon & Chung, 2018). Adolescence is a critical

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period for forming goals and planning for future life, and research shows that having goals in adolescence is linked to efforts to achieve the goals (Kwak, 2018). Humans strive to set goals and achieve those goals in order to live worthy lives, especially when young people succeed at achieving their goals even with physical and psychological changes (Park & Cheng, 2018). Recognizing the direction of one's life in adolescence and having an understanding of future goals can be critical to future career decisions (Lee, Kwon, & Shin, 2013).

Although there have been recent studies based on longitudinal data regarding career maturity and goal consciousness, few researchers as yet have examined the relationships between career maturity and other variables at a specific time. The purpose of this study was to verify our application of an autoregressive cross-lagged model to measure whether career maturity affected adolescents' goal consciousness, goal consciousness affected career maturity, or the two affected each other. The research questions were as follows:

Question 1: What are the trends in adolescents' career maturity and goal consciousness over time?

Question 2: What are the trends in the relationship between adolescents' career maturity and their goal consciousness over time?

LITERATURE REVIEW

Career Maturity

Researchers have not yet agreed on a definition of career maturity (Shin, 2018) because conceptually, the terms are sometimes used interchangeably with career attitude maturity, career recognition, etc. (Keum, 2012). Some scholars defined career maturity as an individual's behavioral pattern in dealing with developmental problems (Super, 1961) or the ability to choose a career choice course and prepare for it (Crites, 1961). Savickas (1999) defined career maturity as being ready to undertake career development tasks appropriate to each age range. Sahu, Thakur, and Agrawal (2017) defined that career maturity derives from having reached milestones in cognitive, emotional, and other psychological factors.

In Korea, career maturity is defined as the degree to which young people have a good understanding of the self and the job world, understand their professional preferences and aptitudes, and judge and systematically prepare for the future job (Kim & Yang, 2012), Other scholars defined career maturity in middle and high school students as being able to understand the work worlds, combine their understanding with their own interests, and can plan and make career decisions (Lee, Lee, & Jung, 2012).

Seon, Lim, Han, and Kim (2012) defined career maturity as goal setting and planning by searching for and investigating career paths at certain physical and mental development stages, and Park and Jun (2014) defined career maturity as the degree of preparation with interest in their career or job. Shin (2018) defined career maturity as the process of responding to and resolving career-related problems throughout different developmental stages and based on self-understanding. For this study, the researchers defined career maturity as career preparation based on a good understanding of oneself, such as one's own abilities and interests.

Goal Consciousness

The dictionary definition of a goal is to make it a real object that aims to accomplish a purpose or its object (National Institute of Korean Language, 2019). In relation to objectives, previous researchers have categorized goals as achievement, future, and life related as well as divisions. Ames (1992) defined achievement goals as a combination of beliefs, temperaments, and influences that are related to behavioral achievement and produce behavioral intent. Elliot (2006)

defined a goal as a cognitive representation of a future object to approach or avoid, focusing on a particular cognitively expressed outcome and acting as a guiding factor in the individual's behavior.

Scholars in Korea define goals as important sources of motivation as psychological representations of what people aspire to be (Kim, 2013), as driving forces to study and to explore the meanings and values of life (Moon, 2013), and as determinants of the right direction and quality of human behavior (Choe, 2014). Others define as achievement-oriented goals related to success in the social sphere by competing with others in jobs, work, and studies (Lim, 2016; Han, 2015).

In this study, the researchers define goals as meaningful psychological traits for developing into contributors to future society (Moran, 2009) as well as for psychological well-being (Harris, Daniels, & Briner, 2003) and personal growth (Nurmi, Salmela-Aro, & Koivisto, 2002). Goal consciousness is defined as an internal representation of desired events, outcomes, processes, etc. (Austin & Vancouver, 1996) and a psychological driving force linking these inner representations to actual behavior (Gray & Braver, 2002).

Previous Research on Career Maturity and Goal Consciousness

Previous researchers focused on identifying relationships with learning-related factors in relation to future goals, but recent researchers have investigated career-related variables and reported meaningful results (Kim, 2018). For instance, in a study of elementary school students, Lee (2011) found that goal orientation had a significant bearing on career maturity, while Lee, Kwon, and Shin (2013) identified that high school seniors' recognition of future goals had a positive effect on career maturity a year later, and Kim and Sohn (2014) reported that future goals had a positive effect on future maturity.

In a study of university student athletes by Lim, Oh, and Yang (2016), task orientation, a component of goal orientation had a positive effect on career consciousness reflected as course setting, independence, and compromise as signs of maturity. Lim and Choi (2016) studied primarily gifted students and found that achievement goal orientation had some effect on career maturity. Baek and Chung (2017) found a statistically significant positively correlation between achievement goals and career maturity, and Cheng and Park (2018) found that the life-goal orientation of adolescents from entering middle school to high school positively predicted career maturity.

In these preceding studies, career maturity and goal consciousness were positive, but there are still few studies on these variables, and these mainly focus on transversal studies of elementary, middle, and high school and university students at one time. In this study, the researchers looked at not only the mutual influences of career maturity and goal consciousness, but also the ultimate impacts of career maturity and goal consciousness during the transitions in elementary, middle, and high school.

METHODS

Data

The researchers obtained our data from the Seoul Education Longitudinal Study (SELS) first conducted in 2010 by Seoul Education Research & Information Institute. The researchers used data from the third (2012), sixth (2015), and ninth (2018) waves of the survey. The final number of participants totaled 2,165 (males: 1,128; females: 1,037) across all three surveys; all participants were current high-school students in 2018. The SELS is a longitudinal project (2010-2018) that entails collecting and analyzing long-term data on Seoul education policies and students' overall educational activities by tracking and surveying elementary, middle, and high school panels in Seoul that were formed in 2010.

Measures

For this study, the researchers modified and supplemented the career maturity and goal consciousness tests from the SELS. Specifically, the researchers used eight questions to measure career maturity and five to measure goal consciousness. The researchers present the question items in **Table 1**. The responses for each item were rated on a 5-point Likert scale ranging from 1 (*very little*) to 5 (*very much*). The Cronbach's alpha coefficients for career maturity were .918 at Time 06, .932 at Time 09, and .924 at Time 12, and for goal consciousness, they were .891 at Time 06, .911 at Time 09, and .901 at Time 12. This test was composed of two latent variables for career maturity and three for goal consciousness, namely, career recognition and aspiration for career maturity and specificity, participation, and sociality for goal consciousness.

Table 1. *Variables and items of the measurement*

Latent Variables	Sub-Variables	Items
Career Maturity	Career recognition	I know what I like to do. I know what's good about my personality. I've looked up specific information about my career (major or job) that I'm interested in. I'm thinking about what to do now to achieve my future hope.
	Career aspiration	I decide my career (major or job) by myself. I want to be the best professional who is recognized by people in my profession. I want to be the person who plays the most important role in making decisions related to my work. I will overcome any difficulties to have the job I want.
Goal Consciousness	Specificity	I have a definite goal that I want to achieve. I know what to do to achieve my goal.
	Participation	I am working hard to achieve my goal. My studies will help me achieve my future goals.
	Sociality	If my future goal is achieved, I think I can contribute to society.

Data Analysis

For the data analysis, the researchers used SPSS 18.0 for Windows to calculate Cronbach's α and descriptive statistics. In order to conduct Pearson's correlation analysis and autoregressive cross-lagged modeling, the researchers used AMOS 21.0. To verify the autoregressive cross-lagged model, the researchers set eight competition models and analyzed the fitness of the autoregressive cross-lagged model with root mean square error of approximation (RMSEA), comparative fit index (CFI), and normed fit index (NFI).

The research model set for verifying the relationship between career maturity goal consciousness over time is presented in **Figure 1**.

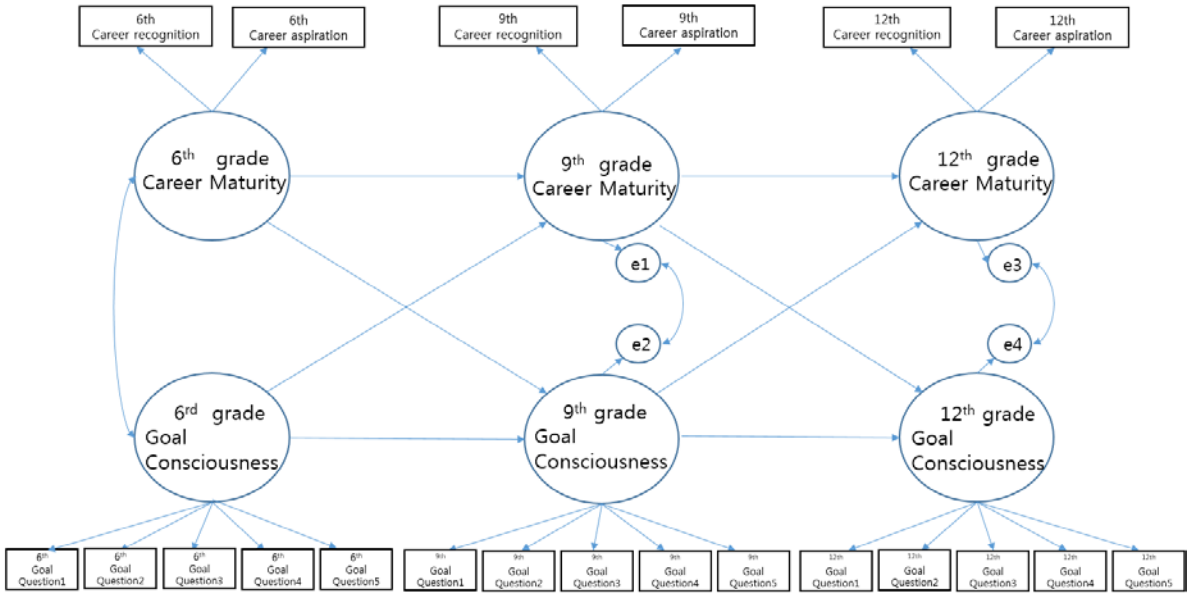

FIGURE 1. *Research model applied with autoregressive cross-lagged model.*

RESULTS

Correlation Matrix and Descriptive Statistics

Descriptive statistics for both career maturity and goal consciousness are presented in **Table 2**; the means for career maturity and goal consciousness were 3.93–4.25 and 3.74–4.13. The Pearson's correlations among the variables are shown in **Table 3;** they indicated that career maturity at Times 06, 09, and 12 correlated positively with goal consciousness at Times 06, 09, and 12 (r = from -.336 to -.120, p < .01).

Table 2. *Descriptive statistics*

Variables	M	SD	Skewness	Kurtosis
6th grade Career Maturity	4.25	.683	-.766	.211
9th grade Career Maturity	3.93	.729	-.266	-.173
12th grade Career Maturity	3.98	.697	-.335	-.048
6th grade Goal Consciousness	4.13	.726	-.683	.239
9th grade Goal Consciousness	3.74	.807	-.239	-.041
12th grade Goal Consciousness	3.82	.799	-.544	.592

Table 3. *Correlation between career maturity and goal consciousness variables at Times 06, 09, and 12*

Variables	1	2	3	4	5	6
1. 6th grade Career Maturity	1					
2. 9th grade Career Maturity	.395***	1				
3. 12th grade Career Maturity	.337***	.491***	1			
4. 6th grade Goal Consciousness	.852***	.381***	.301***	1		
5. 9th grade Goal Consciousness	.368***	.834***	.444***	.380***	1	
6.12th grade Goal Consciousness	.278***	.447***	.866***	.261***	.426***	1

***$p < 0.001$.

Autoregressive Cross-Lagged Model

The results of comparing models to identify the relationship between career maturity and goal consciousness during adolescence are given in **Table 4**. To determine the suitability of the model, the researchers compared the eight competing models to find the optimal model. For the autoregressive cross-lagged model, path invariance can be verified only when the measurement invariance is satisfied, and error covariance can be verified if path invariance is satisfied. Thus, the researchers verified the model in the following order: the basic model with covariance, the model with limited measurability, the model with limited path invariance, the model with limited path invariance for the cross-lagged coefficients, and the model with limited invariance of error covariance (Lee, 2018).

Table 4. *Comparison of fitness of autoregressive cross-lagged models*

Model	χ^2	*df*	TLI	CFI	RMSEA	$\Delta\chi^2$	Δdf	ΔCFI
1	1669.133***	157	.934	.955	.067			
2	1669.251***	159	.935	.955	.066	.118	2	0
3	1711.933***	167	.936	.954	.065	42.683***	8	.001
4	1715.303***	168	.937	.954	.065	3.369	1	0
5	1715.448***	169	.937	.954	.065	.145	1	0
6	1716.370***	170	.938	.954	.065	.922	1	0
7	1719.627***	171	.938	.954	.065	3.257	1	0
8	1723.279***	172	.938	.954	.065	3.625	1	0

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

To compare between models, the researchers verified χ^2 values by default and verified TLI at the same time, which is not sensitive to sample size. CFI differences are assumed to have a path invariance that will not result in more than .01 (Lee, 2018). The researchers ultimately chose Model 8 because validating the model convergence showed consistent measurement over time, equal

magnetic regression coefficients, and equal error covariance in that the CFI did not decrease by more than .0.1.

Figure 2 shows the standardized coefficients of the magnetic autoregressive cross-lagged model. The researchers found that the autoregressive and cross-lagged coefficients, which represent career maturity and goal consciousness in adolescence, respectively, were both significant. The results of the autoregressive coefficient showed that career maturity in the sixth grade of elementary school had a statistically significant effect on career maturity in the ninth grade (β= .335, p< .001), and the twelfth grade (β= .340, p< .001). Goal consciousness in the sixth grade had a significant effect on goal consciousness in both ninth (β= .186, p< .001), and twelfth grades (β= .213, p< .001). Therefore, career maturity and goal awareness in adolescence have a constant effect with a static positive correlation in later years.

The researchers verified the cross-lagged factor, and career maturity at the earlier point in time and goal consciousness subsequently (β= .240, β=.244, p< .001) had significant effects; that is, career maturity increased goal consciousness. In addition, goal consciousness previously had a significant effect on career maturity (β=.124, β=.141, p< .001); goal consciousness increased career maturity. In sum, the researchers showed a mutual causal relationship between career maturity and goal consciousness.

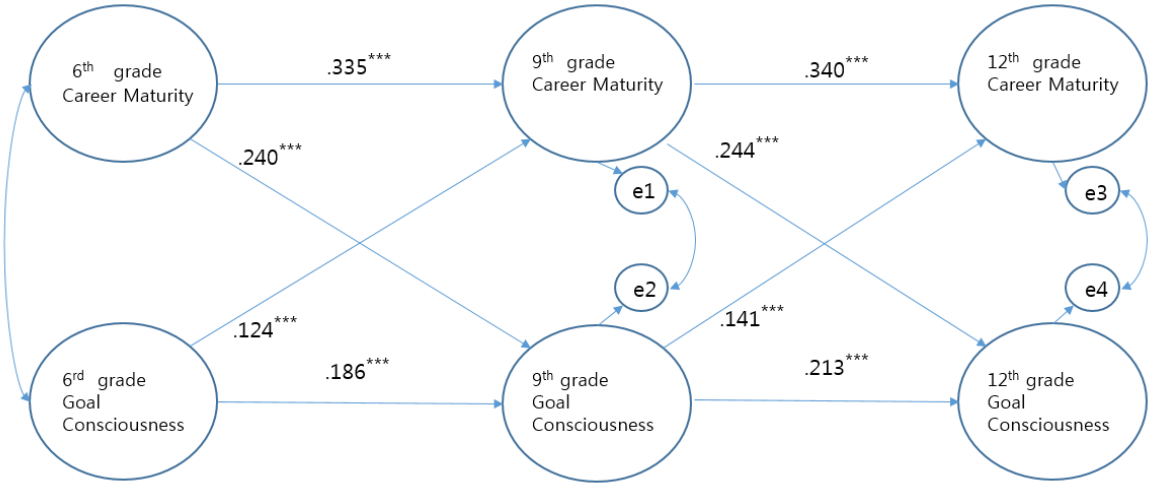

FIGURE 2. *Autoregressive cross-lagged model (standardized coefficients).* ***p < .001.

CONCLUSION and IMPLICATIONS

The purpose of this study was to examine the trends of career maturity and goal consciousness in adolescents over time and to examine the trends over time in the relationship between the two, also over time. To achieve this purpose, the researchers conducted an analysis by applying an autoregressive cross-lagged model to data from the 2012, 2015, and 2018 waves of the Seoul Education Longitudinal Study. Specifically, the researchers analyzed data on students who were in the 6th (2012), 9th (2015), and 12th grades (2018), that is, who were in the 12th grade in 2018. The study is meaningful in that the researchers established and verified two-way relationships between the variables, unlike previous researchers who only studied one-sided relationships between the variables. The main analysis results of this study are as follows:

First, career maturity and goal consciousness in adolescence showed significant static correlations with each other. This was similar to the findings found by Lee (2013), Kim and Sohn (2014), and Baek and Chung (2017) for middle school students, and by Chung and Lee (2016) and Bang and Cho (2017) for college students.

Second, earlier career maturity and goal consciousness had consistent static effects on subsequent career maturity and goal consciousness. In other words, the career maturity of elementary school students affected that of middle and high school students, and goal consciousness in elementary school affected subsequent goal consciousness as well. This was similar to Moon's (2013) finding that students' future goals expanded even from the sixth to the eighth grade.

Third, the maturity of the career path and the sense of goals had a reciprocal causality, and this was similar to Kang and Ahn's (2010) finding that the higher the motivation for achievement, the higher the likelihood of career maturity. Similarly, Kim and Sohn (2014) found that high motivation for achievement in elementary school students led to better intrinsic future goals, and Nam and Kim (2018) also found a high association between college students' goals and their career maturity. This highlights the need to provide environments in which students can develop goal consciousness, motivation, and career maturity (Nam & Kim, 2018).

Based on the above discussion, the researchers reached the following conclusions:

First, adolescent career maturity and goal consciousness had significant impacts over time: Earlier career maturity and goal consciousness affected subsequent career maturity and goal consciousness. This suggests that career education should take place in the early teens to enhance students' career maturity and goal consciousness.

Second, the researchers found that career maturity and goal consciousness had mutual effects on each other; each one affected the other. These findings suggest that improving the career maturity of adolescents may lead to improving their goal consciousness and vice versa. The adolescent period is a stage when young people develop ideas about goals and career paths as they are exploring and reflecting on goals (Cheng & Park, 2018). This suggests that young people need help at home and at school to enhance career maturity and goal consciousness.

The limitation of this study was that the population was restricted to only students who entered the twelfth grade in 2018; thus, there is a limit to generalizing the results of this study. Nevertheless, there is significance in that the researchers established and verified the two-way relationship between the variables including their mutual effects on each other.

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