The Effects of Students' Career Readiness and Self-conception on Outcomes in the Labor Market

OECD 2021 International Online Conference: Disrupted Futures

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Oct. 29, 2021

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Introduction-Problem Statements

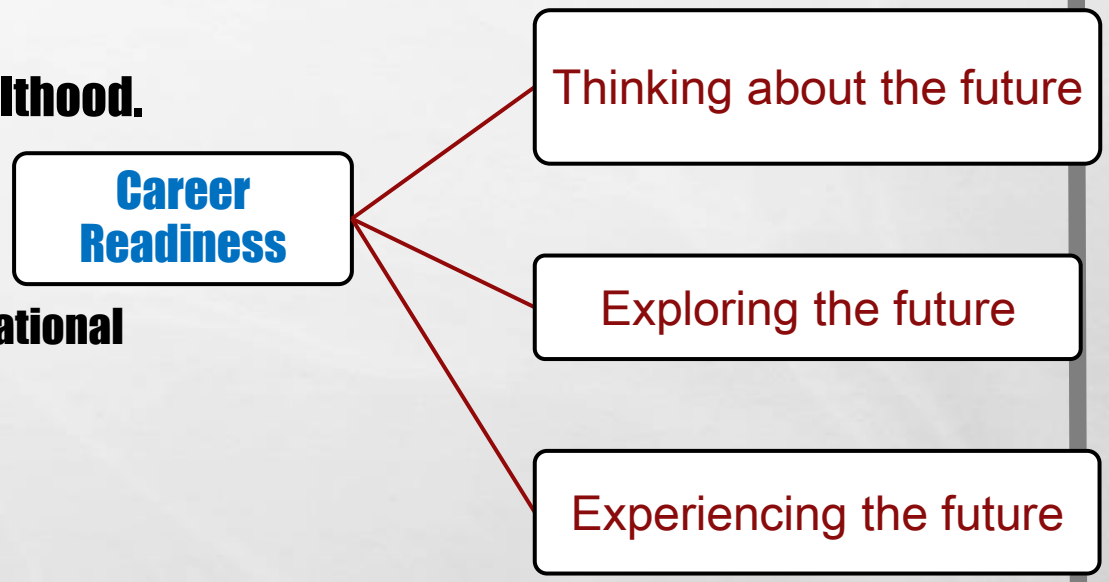
- Career education in Korea is a relatively recent concept. Korea started career education in schools systematically in the early 21st century.
- Career experience programs have developed and practiced in primary and secondary schools over the past years in Korea.
- It is necessary to examine the effects of career education including career education classes and programs, career consultation, career experience and exploration, volunteering, and others on achievements in the labor market after they become adults

Purpose of the Study

- To examine the effects of career readiness activities in adolescence on achievements in the labor market in adulthood.
  - In adolescence

    : Career certainty, career ambition, career alignment, school satisfaction, school motivation, career conversations, occupational preparation, and school-mediated work exploration, career exploration, and so on.
  - In adulthood

    : NEET or non-NEET, full-time job income, adult cognitive competency, and so on.



Career Education in Korea

Table 1. Brief History of Actions to Promote Career Education In Korea

Year	Featured Action	Institutes
2010	Set National Career Education Five-Year Plan	Ministry of Education
2011	Established Career Education Policy Division	Ministry of Education
2011	Allocated specialized career teachers	Middle schools
2014	Piloted Free Learning Semester (FLS)	Middle schools
2015	Set Career Education Act	The National Assembly
2015	Piloted career explortion support centers	Local offices of education in 17 cities
2016	Extended FLS nationwide	All middle schools
2016	Set the Second Five-Year Plan for Career Education	
2017	Opened National Career Development Center	KRIVET Korea Research Institute for Vocational Education and Training
2018	Piloted Free Learning Year (FLY)	Middle schools
2020	Piloted Credit-based system	High schools

Methods-Sample, Data

- **Sampling: secondary data-The Korean Education Longitudinal Study 2005 (KELS2005)**
  - The Korea Educational Development Institute (KEDI) annually conducts to investigate the growth and development of students aged from 15 to 28
  - To promote educational policies
- **The target study subjects from the survey result: Third year middle school students (9th graders) in 2007 in Korea**
- **Data : in 2018, they aged 25 years old and their achievements in the labor market were surveyed.**

Methods: Outcome Variables

- **Study variables => Achievements in the Labor Market: NEET, earnings, competencies**

Table 2. Study Variables

Variable	Description
NEET	Subjects: 25-year-olds (Year 2018) who were not in education, employed, or training. 0 = NEET, 1 = non-NEET
Earnings	Monthly income before tax from the first job, two digits (unit: 10 thousand won)
Competency	16 items with 5-point Likert scale: self-directed learning and problem-solving skills

Methods: Predictor Variables

Career readiness		Description
Thinking about the future	Career certainty	28 occupations presented (Teacher, doctor, artist]; 16-year-olds (first-year students in high school), The 4th wave of the KELS2005 (Year 2008)
	Career ambition	Career choice requires higher education Career choice does not require higher education
	Career alignment	Two groups: career ambition + higher education/ career ambition + non-higher education
	School attitudes	School satisfaction (four questions); school motivation (three questions)
Exploring the future	Career conversations	Teachers, parents, relatives, private instructors (tutors) and quality
	Occupational preparation	One Yes/No question, six items- taking career related classes
	School-mediated work exploration such as attending job fair, companies, career education programs, ..	
Experiencing the future	Part-time employment	15-year-old students; one item
	Volunteering	Five items; 5-point Likert scale
	Self-concept	Social, family, physical, and academic efficacies; 20 items, 5-point Likert

Methods: Control & Background Variables

Control Variables	Description
Industry classification	Five groups (Agriculture, forestry, and fishery = comparison group)
Firm size	Four groups (Less than 50 employees = comparison group)
Labor time	Four groups (Less 40 hours per week = comparison group)
Location	Two groups (The Capital area = 1, other areas = 0)
Background Variables	
Gender	Male = 1, female = 0
Parents' SES	Low, middle, high: Parents' occupation, education, household income
Grade	Middle school grades (Korean, English, Math): high, middle, low
School location	Metropolitan cities (= 0), local cities, rural
Track	High school: general high school = 0, vocational high school = 1

Data Analysis

- **Descriptive statistics:** means & standard deviations [*SD*]
- **Logistic regression model** and **Analysis of variance (ANOVA)**
- $Y_i = X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + X_7 + X_8 + X_9 + X_{10} + X_{11} +$ Control Variables

  , where Y_i is outcome variables, X_1 is positive self-concept, X_2 is career certainty, X_3 is career ambition and career alignment (career ambition aligned with education), X_4 is school satisfaction, X_5 is school motivation, X_6 is consultations with private tutors and advice from relatives, X_7 is satisfaction with career counseling, X_8 is occupational preparation and school-mediated work exploration, X_9 is visiting to firms and factories, career experience program, X_{10} is part-time employment, and X_{11} is attitude toward volunteering work.

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Findings-Descriptive Statistics

Table 3. *Descriptive Statistics: Means and Standard Deviations Among Variables*

Variable	Category (year)	n	Mean	*SD*
Dependent variable	Non-NEET (2018)	3624	0.79	0.41
	Full-time income (2018)	2167	222.97	73.97
	Cognitive competence (2018)	3720	20.37	3.63
Self-concept	Self-concept	6562	3.42	0.55
Thinking about the future	Career certainty	6119	0.87	0.34
	Career ambition	6524	0.52	0.50
	Career ambition aligned with education	6519	0.43	0.50
	School satisfaction with career education	6556	3.02	0.69
	School motivation	6496	3.35	0.53

Findings-Descriptive Statistics

Variable	Category	n	Mean	*SD*
Exploring the future	Consultation with the homeroom teacher	6545	0.67	0.47
	Consultation with tutors (after school private instructors)	6544	0.44	0.50
	Consultation with a career counseling expert	6500	0.23	0.42
	Advice from relatives	6524	0.60	0.49
	Advice from parents or neighbors	6522	0.77	0.42
	Number of career consultants (e.g., parents and teachers)	6568	2.70	1.48
	Satisfaction with consultation quality	6568	3.08	0.46
	Classes related to careers at school	6533	0.68	0.47
	Visiting to workplaces (companies or factories)	6530	0.32	0.47
	Attending a job fair	6507	0.32	0.47
	Satisfaction with career experience programs	6532	0.28	0.45
Experiencing the future	Part-time job	6489	0.13	0.34
	Attitudes toward volunteering	6548	3.14	0.78

Findings-Gender & Grade Point

Variable	Gender		Grade Point (Middle School)		
	Female (%)	Male (%)	Low (%)	Moderate (%)	High (%)
Career certainty	2493(85.5)	2810(87.8)	1593(85.3)	1814(85.8)	1889(88.6)
Career ambition	1659(53.0)	1753(51.6)	780(38.1)	1111(49.9)	1517(67.6)
Career ambition aligned with education	1383(44.3)	1415(41.7)	559(27.4)	914(41.1)	1322(58.9)
Classes related to careers at school	2201(70.4)	2217(65.1)	1276(62.2)	1525(68.4)	1612(71.8)
Visiting to factories and/or firms	874(28.0)	1217(35.7)	778(37.9)	712(32.0)	600(26.7)
Job fair	936(30.1)	1133(33.4)	737(36.1)	707(31.9)	622(27.8)
Career experience program	798(25.5)	1054(30.9)	735(35.8)	634(28.5)	481(21.4)
Part-time job	436(14.0)	429(12.7)	421(20.7)	292(13.2)	151(6.8)
Total	3137(47.8)	3431(52.2)	2068(31.5)	2240(34.1)	2253(34.3)

Findings-Gender & Grade Point

Variable	Gender				Grade Point (Middle School)					
	Female		Male		Low		Moderate		High	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
School satisfaction with career education	2.91	0.63	3.11	0.73	3.04	0.72	3.02	0.67	3.00	0.67
School motivation	3.38	0.50	3.33	0.55	3.23	0.56	3.38	0.50	3.44	0.50
Number of career consultants	2.74	1.33	2.65	1.60	2.61	1.60	2.72	1.45	2.75	1.37
Satisfaction with consultation quality	3.15	0.80	3.19	0.84	3.16	0.88	3.16	0.80	3.19	0.79
Attitudes toward volunteering	3.24	0.74	3.04	0.81	3.14	0.77	3.11	0.79	3.15	0.77

Findings-The NEET Model

Table 4. Before $Y_{NEET} = X_i$; After $Y_{NEET} = X_i +$ Control Variables;

M1 $Y_{NEET} = X_{career\ ambition}$; M2 $Y_{NEET} = X_{career\ ambition\ aligned\ with\ education}$

Predicting Variable	2018 (Year): 25 years old			
	M1		M2	
	Before	After	Before	After
	B	*B*	*B*	*B*
Self-concept	0.219**	0.207**	0.198**	0.187**
Career ambition	0.166*	0.159*		
Career ambition aligned with education			0.223**	0.236**
School motivation	0.156*	0.180**	0.158*	0.184**
Visiting companies	0.207*	0.184	0.232**	0.207*
R^2	.013	.033	.015	.035

Note. *p < .10, **p < .05. M1 = The overall model of Career Ambition, M2 = The overall model of Career Ambition aligned with Education.

Findings-The Income Model

Table 5. Before $\mathbf{Y}_{\mathbf{Income}} = X_i$; After $\mathbf{Y}_{\mathbf{Income}} = X_i +$ Control Variables ; M1 $\mathbf{Y}_{\mathbf{Income}} = \boldsymbol{X}_{\boldsymbol{career\ ambition}} + \boldsymbol{CV}$; M2 $\mathbf{Y}_{\mathbf{Income}} = \boldsymbol{X}_{\boldsymbol{career\ ambition\ aligned\ with\ education}} + \boldsymbol{CV}$

Predicting Variable	2018 (Year): 2018 (Year): 25 years old							
	M1		M2		M3		M4	
	Before	After	Before	After	Before	After	Before	After
	B	*B*	*B*	*B*	*B*	*B*	*B*	*B*
Constant	5.205***	4.472	5.229	4.485	5.245	4.565	5.272	4.576
Self-concept	0.040**	0.015**	0.038**	0.032**	0.038*		0.037*	
Career certainty		-0.039*		-0.040*		-0.044*		-0.045*
Career ambition	0.053***	0.046*			0.068***	0.049***		
Career ambition aligned with education			0.055***	0.048***			0.070***	0.045***
School satisfaction								
School motivation	0.030*		0.030**		0.032*		0.032*	
Consultation with tutors	0.041**	0.029**	0.040**	0.028*	0.062***	0.047***	0.062***	0.047***
Satisfaction with consultation quality								-0.032*
R^2	.024	.223	.025	.224	.035	.278	.037	.278

Note. $^{*}p < .10$, $^{**}p < .05$, $^{***}p < .001$. M1 = The overall model of Career Ambition, M2 = The overall model of C… Ambition aligned with Education…
M3 = The Career Ambition with Korea SAT model, M4 = The Career Ambition aligned with Education and Ko…

Findings-The Competence Model

Table 6. Before $\mathbf{Y}_{\mathbf{Competence}} = X_i$; After $\mathbf{Y}_{\mathbf{Competence}} = X_i +$ Control Variables ; M1 $\mathbf{Y}_{\mathbf{Competence}} = \boldsymbol{X}_{\boldsymbol{career\ ambition}} + \boldsymbol{CV}$; M2 $\mathbf{Y}_{\mathbf{Competence}} = \boldsymbol{X}_{\boldsymbol{career\ ambition\ aligned\ with\ education}} + \boldsymbol{CV}$

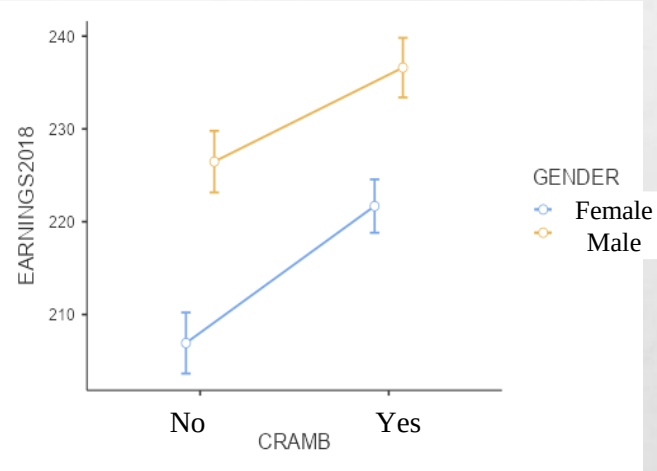
Predicting Variable	2018 (Year)							
	M1		M2		M3		M4	
	B	A	B	A	B	A	B	A
	B	*B*	*B*	*B*	*B*	*B*	*B*	*B*
Constant	13.533	8.756	13.565	8.701	13.776	7.708	13.776	7.833
Self-concept	1.438***	1.230***	1.419***	1.226***	1.535***	1.308***	1.512***	1.288***
Career certainty	0.554**	0.415**	0.534**	0.406**	0.484**	0.442*	0.480**	0.431*
Career ambition	0.475***				0.579***			
Career ambition/ aligned with education			0.559***				0.681***	0.273*
Advice from relatives	0.253*		0.248*		0.278*		0.266*	
Satisfaction with consultation quality	0.284*		0.274*					
Classes related to careers								
Visiting companies			0.261*	0.303**	0.331*	0.438**	0.338*	0.431**
Part-time job								
R^2	.067	.140	.070	.142	.075	.163	.079	.166

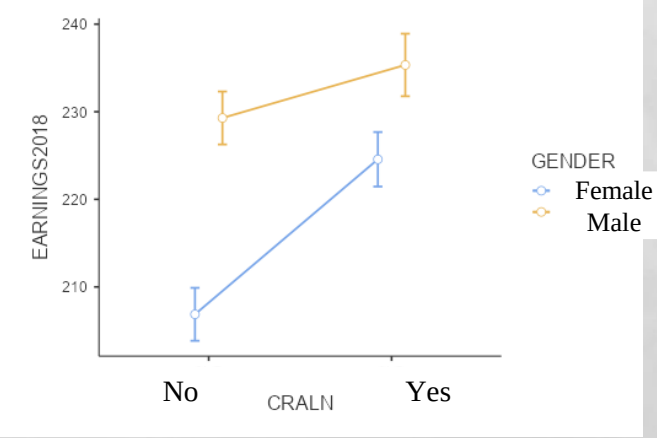
*Note. *p < .10, **p < .05, ***p < .001.* M1 = The overall model of Career Ambition, M2 = The overall model of Career Ambition aligned with Education, M3 = The Career Ambition with Korea SAT model, M4 = The Career Ambition aligned with Education and Korea SAT. B = Before, A = After.

Findings-Effects of Gender and Career Ambition on Income

Table 7. *Effects of Career Ambition and Education Ambition aligned with Career-Gender*

Outcome Variable	Predictor Variable	Sum of Squares	*df*	Mean Square	*F*	*p*
Income in **2018**	Gender	158293	1	158293	29.429	**< .001**
	Career ambition	82554	1	82554	15.348	**< .001**
	Career ambition * gender	2855	1	2855	0.531	0.466
	Residual	1.16E+07	2155	5379		
	Gender	145608	1	145608	27.07	**< .001**
	Career ambition aligned with education	74569	1	74569	13.86	**< .001**
	Gender * Career ambition aligned with education	17919	1	17919	3.33	**0.068**
	Residual	1.16E+07	2152	5379		





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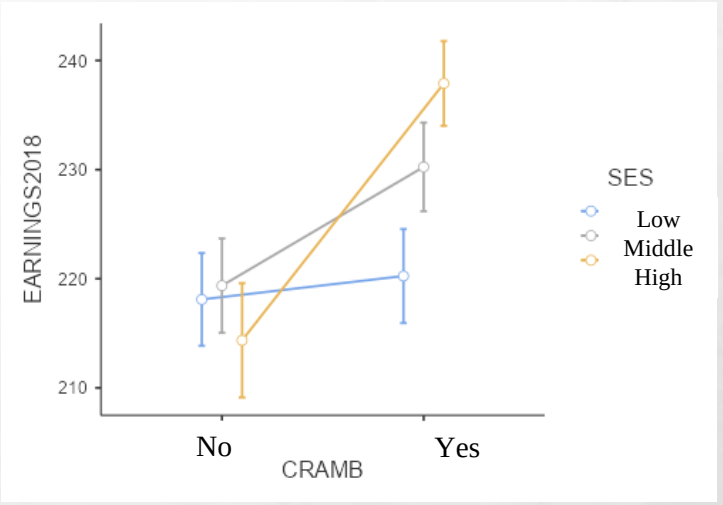
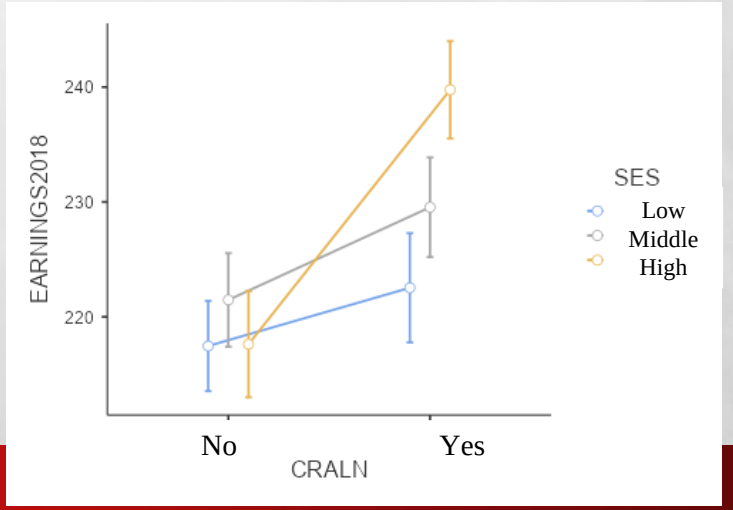
Findings-Moderating Effects of SES and Career Ambition on Income

Table 9. *Effects of Career Ambition and Education Ambition aligned with Career - SES*

Outcome Variable	Predictor Variable	Sum of Squares	*df*	Mean Square	*F*	*p*
Income in **2018**	SES	16280	2	8140	1.43	0.239
	Career ambition	66405	1	66405	11.7	**<.001**
	SES * Career ambition	32999	2	16499	2.91	**0.055**
	Residual	1.05E+07	1846	5676		
	SES	22898	2	11449	2.01	0.134
	Career ambition aligned with education	62867	1	62867	11.06	**<.001**
	SES * Career ambition aligned with education	24548	2	12274	2.16	0.116
	Residual	1.05E+07	1843	5686		

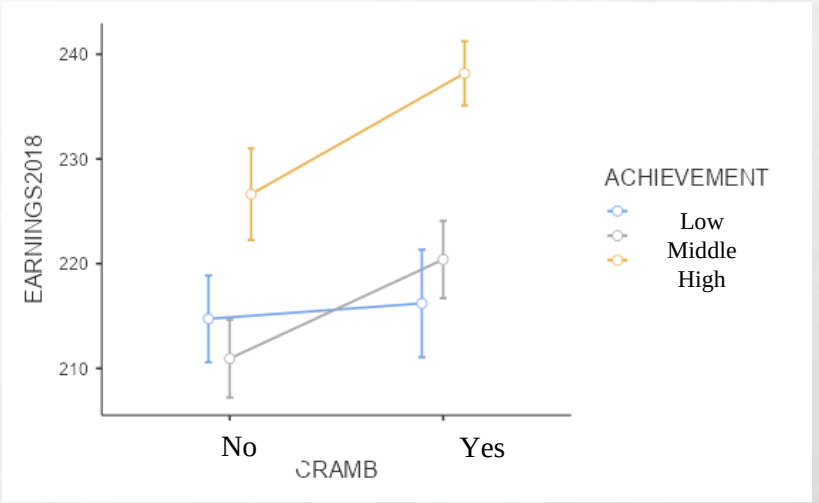


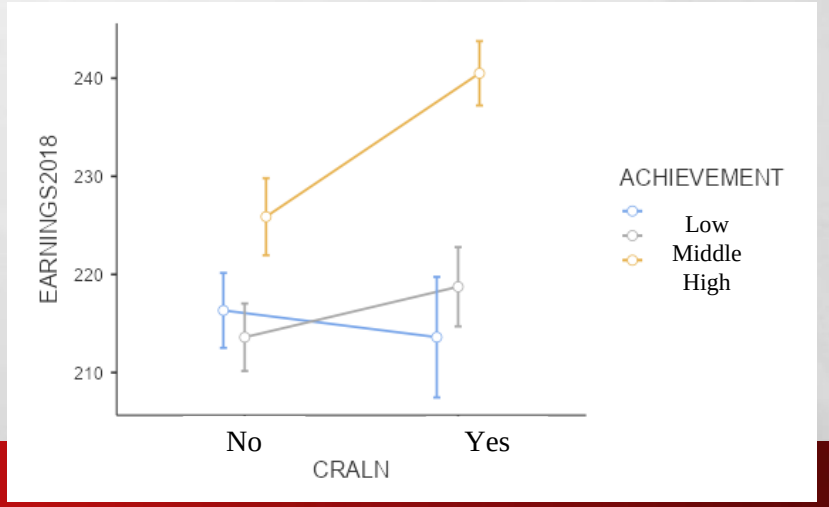


Findings-Effects of Academic Achievement and Career Ambition on Income

Table 11. *Effects of Career Ambition and Education Ambition aligned with Career-Academic Achievement*

Outcome Variable	Predictor Variable	Sum of Squares	*df*	Mean Square	*F*	*p*
Income in **2018**	Academic achievement	134080	2	67040	12.425	< .001
	Career ambition	27295	1	27295	5.059	0.025
	AA✻ Career ambition	8004	2	4002	0.742	0.476
	Residual	1.16E+07	2149	5396		
	Academic achievement	148030	2	74015	13.71	< .001
	Career ambition aligned with education	14683	1	14683	2.72	0.099
	AA✻ Career ambition aligned with education	22285	2	11142	2.06	0.127
	Residual	1.16E+07	2146	5397		





Discussion-Implications

- Reinforcement of education related to career design in adolescence
- Formation of positive self-concept through career education and experience in adolescence
- Systematic evaluation of the effects of school education curriculum and programs on career design and formation of positive self concept, which can lead to effective outcomes in the labor market in adulthood such as employment, income, and competence.
- Development of a new career education model to overcome gender and social economic inequality in the labor market

Limitations & Further Studies

- The data for students' career readiness were collected in 2007, when career education in public schools in Korea was not systematically developed.
- Thus, the results of this study cannot represent the current career education performance.
- If data collected targeting students after 2015 were used, the effects of students' career readiness on achievements in the labor market when they become 25 years old (in 2026 and after) would be quite different from those of this study.
- A cross-analysis of the labor market performance after career education, using data after 2018 is needed.

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THANK YOU!

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