Development and Validation of the Career Transition Readiness Scale[1]

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=== < ABSTRACT > ===

The purpose of this study was to develop and validate an instrument to measure the career transition readiness of Korean adults. Based on previous studies, the concept of career transition readiness was refined and sub-factors were selected. Career transition readiness refers to the extent to which a person is prepared to leave his or her current occupation (work) or career path and transition to a different occupation, work, or career path (including unpaid work such as graduate school, being a stay-at-home mom, or volunteering). The five sub-factors of career transition readiness were career identity, career efficacy, emotional support, career risk-taking, and career adaptability. Data were collected from a total of 243 adults aged 25 and over. The data was analyzed using the Rasch model and confirmatory factor analysis. Finally, the researcher validated the Career Transition Readiness Scale, which consists of 19 items and 5 sub-factors. This study provides significant implications in terms of measuring the career transition readiness of adults in Korea in the future, as well as providing prescriptions such as education and training to promote career transition based on the results.

Key Words : Career transition readiness, career identity, career efficacy, emotional support, career risk-taking, career adaptability

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===〈 요 약 〉===

　이 연구의 목적은 우리나라 성인의 커리어 전환 준비도 측정도구를 개발하고 타당화하는 것이다. 선행연구에 근거하여 커리어 전환 준비도의 개념을 구체화하고 하위 요소를 선정하였다. 커리어 전환 준비도란 현재의 직업(일) 또는 커리어 경로를 떠나 다른 분야의 직업이나 업무 또는 커리어 경로(대학원 진학이나 전업주부, 봉사활동 등 무급의 일 포함)로 전환하는데 얼마나 준비되었는지를 의미한다. 커리어 전환 준비도의 하위요인은 커리어 정체성, 커리어 효능감, 정서적지지, 커리어 위험감수, 커리어 적응성 등 5개 요인으로 구성되었다. 연구자료는 25세 이상의 성인 총 243명으로부터 수집하였다. 수집된 자료는 Rasch 모델과 확인적 요인분석을 이용하여 분석하였다. 최종적으로 연구자는 19개 문항, 5개 하위요인으로 구성된 커리어 전환 준비도 측정도구를 타당화하였다. 이 연구는 향후 우리나라 성인들의 커리어 전환 준비도의 측정은 물론 더 나아가 측정 결과에 근거하여 성인들의 커리어 전환 증진을 위한 교육·훈련 등의 처방도 제시할 수 있다는 측면에서 유의미한 시사점을 제공해준다.

주요어 : 커리어 전환 준비도, 커리어 정체성, 커리어 효능감, 정서적지지, 커리어 위험감수, 커리어 적응성

Ⅰ. Introduction

Artificial intelligence (AI), robotics, biotechnology, disruptive technologies, hyper-connectivity, hyper-convergence, and the sharing economy have become keywords that describe the present and near future of our society (Shin et al., 2017). The triggering of the so-called Fourth Industrial Revolution, which implies these keywords, foreshadows the upheaval in all aspects of the economy, education, society, culture, and politics that we and our successors will experience in the future. In particular, rapid changes in the labor market seem inevitable. As the pace of the Fourth Industrial Revolution accelerates, the disappearance of jobs due to AI and machine automation, or the competition between humans and machines for jobs, has already begun (Oh, 2017, March 15). The emergence of new labor trends such as the sharing economy and gig economy, as well as global economic uncertainty and trade conflicts between countries, have made terms such as lifelong job, full-time job, and stable job meaningless. More than ever, we are facing a life where constant career changes are forced.

According to Statistics Korea (2020, January 15), the number of people who took a break from work in 2019 was 2.02 million, up 238,000 from 2018, with increases in all age groups, especially those aged 20 and over. There were also 533,000 discouraged job seekers, an increase of 9,000 from the previous year. Meanwhile, the number of involuntary retirees in their 40s and 50s in 2019 was 489,000, the highest since 552,000 in 2014 (Bae, 2020, February 16). Gratton (2011), in predicting the age of centenarians, predicted the 'age of the 80-year worker,' where people are expected to work for 80 years. In this situation, the reintegration of existing employees into the labor market, as well as job seekers and involuntary retirees, is becoming an important issue at the individual, national, and societal levels. It is also an issue of career development (e.g., boundaryless career, protean career, life-cycle-space model, etc.) and transitions throughout an individual's life. Transition is a challenge to a new way of life (Bae, 2017).

Arthur et al. (1989) define a career as a series of positions held within an organization, or the process of moving through work in a person's life, and more broadly as the work-related experiences an individual gains over a lifetime. Super (1976, 1980) defines a career as the series of roles and combinations of roles that an individual achieves over the

course of his or her life, including both the professional roles in which he or she develops as well as other roles, and the roles and positions that most people experience throughout their lives. Herr and Cramer (1996) define it as not just the job, but the interaction of one's roles, socialization, and leisure activities in relation to work, including the period of preparation for the job and after retirement, as providing the uniqueness that allows people to choose or not choose any one thing. Niles and Harris-Bowlsbey (2005) argue that careers are personal, made up of decisions made throughout a person's life, emerge from the constant interaction between the individual and the environment, and encompass both the period before a person enters the world of work and the period after a person has completed their formal activities as a professional. While there are many different views and concepts of career, the researcher define career as the collective experience of the choices and actions that an adult takes in relation to his or her career over the course of a lifetime. A career transition is a professional change that occurs during the course of an individual's life (Park, 2015). Career transitions can be intentional or unintentional. By extension, career transition readiness is about how prepared an individual is to make a career change, including psychological acceptance and practical decision-making behaviors.

Up to this point, Heppner et al. (1994), Kim (1997), Schlossberg and Kay (2003), Bundy (2004), Rottinghaus et al. (2005), Kim (2008), Porfeli and Savickas (2012), and Yoon (2022) have devised instruments to assess career transition readiness among college students and adults. However, these instruments fall short of capturing the rapidly evolving landscape of the workforce and the specific context of Korea. In this context, the purpose of this study was to develop and validate an instrument to measure the career transition readiness of Korean adults. This study has significant implications in that it can help diagnose the career transition readiness of Korean adults, as well as provide prescriptions such as job transfer and employment support and education and training programs for them.

II. Literature Review

1. Concepts of career transition

The concept of career transition has been defined in international studies as career

transition, career change, career switch, etc. and in domestic studies as career transition, job transfer, job change, career transition, career change, job transfer, and job change. Louis (1980) defines career transition as an individual's attempt to make a substantive role change by taking on a different role in the world of work, or setting a direction to change the specific content of the current role. Kim et al. (2008) refer to career transition as an inevitable deviation from the continuum of what a person must do to live a full life, from birth to death, and to be changed by modifying or supplementing a new path. As such, career transition is important because it is a process of reevaluating the meaning of one's career decision-making behavior and finding one's ideal job (Jun, 2013). Park (2015) sees career transition as an occupational change that occurs mainly in adulthood because it refers to an occupational change that occurs during the course of an individual's life. Here, Career transition refers to moving from one's current job or career path to a different field, occupation, or career trajectory.

2. Previous studies on the development of career transition readiness measurement tools

Some of the most prominent research on the development of career transition readiness instruments include the following. Heppner et al. (1994) developed a 40-item Career Transitions Inventory with five subscales: readiness, confidence, perceived support, control, and decision independence for adults in career transition. Kim (1997) developed the Career Preparation Behavior Measurement Tool for teachers' college students. The instrument consists of 16 questions with three sub-variables: information gathering activities, tool acquisition activities, and practical efforts. Schlossberg and Kay (2003) developed the 56-item Transition Guide Questionnaire (TQR) as a diagnostic tool for people undergoing career, relationship, and other life transitions to help identify problem areas and develop new coping strategies for specific transitions. The tool is based on the theory of Schlossberg et al. (1995). They define a transition as an event or non-event that triggers a change in relationships, life routines, assumptions, or roles, and when this occurs, a process of integrating the change into one's life occurs. The four aspects of transition that influence how well an individual handles change are situation, self, supports, and strategies. Jang and Kim (2009) validated Bundy's (2004) Transition Guide Questionnaire-Revised, a

modification of Schlossberg and Kay's (2003) TQR, with a sample of 262 adult men and women who were job searching. Bundy's (2004) original test had 45 questions, including situational awareness, self-perception, support, and coping power factors, but the validated test by Jang and Kim (2009) was reduced to 22 questions with three factors: situational awareness, coping strategies, and support. Meanwhile, Rottinghaus et al. (2005) developed the Career Futures Inventory (CFI), which consists of career adaptability, career optimism, and knowledge. Choi and Kim (2006) validated the CFI with college students. Kim (2008) developed the 20-item Korean College Student Career Readiness Test, which consists of three sub-variables: exploration, decision, and realization. However, these instruments are mainly based on college students and do not reflect the complexity of career transitions and the social and economic environment in the current era. Porfeli and Savickas (2012) developed the United States form of the Career Adapt-Abilities Scale (CAAS). The CAAS consists of four scales, each with six items, which measure concern, control, curiosity, and confidence as psychosocial resources for managing occupational transitions, developmental tasks, and work traumas (Porfeli & Savickas, 2012). Yoon (2022) developed a 40-item career transition competency scale with four sub-factors: networking, adaptability, resilience, and self-development. The tool highlights the importance of networking behaviors.

3. Concept and construction of the career transition readiness scale for this study

Career transition readiness is the readiness to leave your current job or career path and transition to a job, task, or career path in a different field. This includes transitions to unpaid roles such as graduate school, being a stay-at-home mom, or engaging in volunteering. This scale consists of the following sub-variables derived from the literature: Career identity, career efficacy, emotional support, career risk-taking, and career adaptability. <Table 1> lists the items for each sub-variable. The concept of these sub-variables is as follows:

- Career identity: Desire to pursue a career that aligns with one's life goals and values.
- Career efficacy: Belief in one's ability to make a successful career transition.
- Emotional support: Perception of emotional support or encouragement received from close family, friends, and acquaintances regarding career transition.
- Career risk-taking: Intention and act of willingly accepting the uncertainties and

potential setbacks associated with career transition.

- Career adaptability: Ability to effectively navigate and adjust to changes in the career world.

<Table 1> Sub-variables and items of the career transition readiness scale

Sub-variables	Items
career identity	(ci1) My career is in line with my life goals. (ci2) My career reflects who I am. (ci3) I aspire to pursue the career I genuinely desire. (ci4) My career is consistent with my values.
career efficacy	(ce1) I can solve issues that may arise during a career transition. (ce2) I believe I can accomplish my career goals. (ce3) I can create and execute a career transition plan. (ce4) I know what I need to do to achieve the career I want.
emotional support	(es1) The people in my life (such as close family, friends, and acquaintances) are supportive of my career transition plan. (es2) People around me are confident and motivated about my career transition plan. (es3) I have people in my life who will support me as I consider a career transition. (es4) The people around me are understanding and encouraging of my career transition.
career risk-taking	(cr1) I am willing to take some risk to achieve the career I want. (cr2) I prefer to pursue work I love rather than a stable career. (cr3) I invest time and effort in my career growth. (cr4) When pursuing my desired career opportunities, I take risks, even if it means failure.
career adaptability	(ca1) I can adapt well to changes in the career world. (cr2) I explore my options when I need to make a career transition. (cr3) I am open to learning new skills required for a career transition. (cr4) I can effectively deal with the uncertainty of my career future.

Ⅲ. Methods

1. Samples and data collection

This study focused on Korean adult men and women aged 25 years and older who are part of the economically active population as presented. Specifically, the subjects of this study include the employed, the unemployed, those who have given up on seeking employment, those with potential employment, potential job seekers, and temporarily unemployed. Research data was collected online through Google Survey over a three-week

period in October 2023. A total of 245 respondents completed the questionnaire, excluding insincere responses, data from 243 people were used for analysis. <Table 2> shows the background information of the respondents.

<Table 2> The background information of the respondents

Variables	Category	$n(\%)$
Gender	Man	61(25.1)
	Woman	182(74.9)
Age	20s	8(3.3)
	30s	36(14.8)
	40s	119(49)
	50s	69(28.4)
	60s and older	11(4.5)
Education	High school graduation	6(2.5)
	Junior college graduation	14(5.8)
	University graduation	114(46.9)
	Graduate school graduation	109(44.9)
Career transition	Less than 3 times	169(69.5)
	4~6 times	64(26.3)
	7~9 times	4(1.6)
	More than 10 times	6(2.5)

2. Procedure for developing the career transition readiness scale

To develop and validate the career transition readiness scale, this study follows the procedure proposed by Shin et al. (2009) and DeVellis (2003). First, the concept of career transition readiness was specified by reviewing previous studies related to career transition. Second, based on previous studies, five sub-factors (career indentity, career efficacy, emotional support, career risk-taking, career adaptability) of the scale were set and the question pool was constructed. Third, the 5-point Likert scale was selected as the response form for the scale. Fourth, a provisional scale consisting of 4-5 items for each sub-factor was developed and a pilot test was conducted on 21 adults. Through this, three questions of the career risk-taking factor were revised. Finally, data were collected using the modified scale, and the collected data were analyzed using the Rasch model and confirmatory factor analysis.

3. Data analysis

In this study, the collected data were analyzed using SPSS 25 and Jamovi 2.4.11 software. First, descriptive statistics, correlations, and internal consistency (Cronbach α) analyses were conducted for the measured variables. Second, the Rasch model was used to verify the and local independence of the items, the stability of the measurement tool, model fit, item fit, and respondent agreement. Finally, confirmatory factor analysis was conducted to verify the convergent and discriminant validity of the model.

Ⅳ. Results

1. Normality test of the data set

<Table 3> represents the descriptive statistics of the 20 items for the career transition readiness scale. All items met normality assumptions, with skewness no greater than ±2 and kurtosis no greater than ±7.

<Table 3> Descriptive statistics

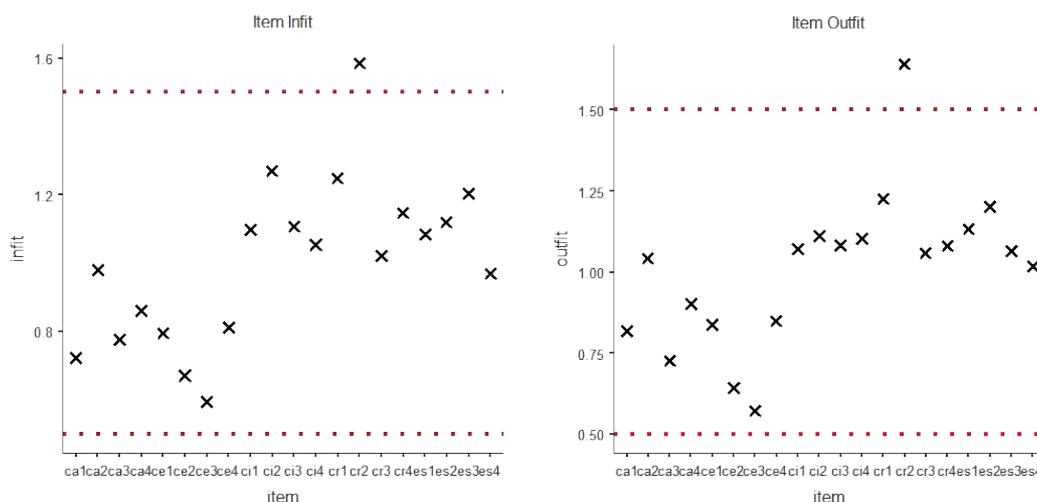| Item	M	SD	Skewness(SE)	Kurtosis(SE)
ci1	4.029	1.030	−.973(.156)	.382(.311)
ci2	4.049	1.082	−1.223(.156)	.982(.311)
ci3	4.115	1.030	−1.034(.156)	.275(.311)
ci4	4.128	.964	−1.039(.156)	.534(.311)
ce1	3.798	1.015	−.639(.156)	−.077(.311)
ce2	3.955	1.009	−.833(.156)	.158(.311)
ce3	3.897	.963	−.716(.156)	.122(.311)
ce4	3.996	.943	−.887(.156)	.677(.311)
es1	4.074	1.026	−1.006(.156)	.362(.311)
es2	3.975	1.083	−.895(.156)	−.033(.311)
es3	4.218	1.019	−1.393(.156)	1.371(.311)
es4	4.103	.980	−1.138(.156)	.939(.311)
cr1	3.453	1.139	−.465(.156)	−.588(.311)
cr2	3.350	1.235	−.347(.156)	−.840(.311)
cr3	3.918	1.017	−.713(.156)	−.273(.311)
cr4	3.539	1.189	−.443(.156)	−.801(.311)
ca1	3.815	.906	−.734(.156)	.638(.311)
ca2	3.798	.977	−.577(.156)	−.158(.311)
ca3	4.062	.927	−.844(.156)	.080(.311)
ca4	3.531	1.038	−.284(.156)	−.511(.311)

2. Validity based on Rasch measurement model

This study covers the generalizability aspect of validity, the content aspect of validity, the structural aspect of validity, and the substantive aspect of validity.

First, Cronbach's α and Rasch's separation reliability were obtained to validate the generalizability of the career transition scale across different populations. The Cronbach's α and Rasch model person separation reliability values for this scale were the same at .961, which meets the generalizability aspect of validity (person separation reliability>.80, Linacre, 2018).

Second, the content aspect of validity refers to the descriptive characteristics of the individual items that make up the test and the extent to which the items reflect the constructs that the test is intended to measure (Yu, 2015). Item fit is categorized into infit and outfit, with values between .5~1.5 being considered validated (Linacre, 2018). As shown in <Table 4> and [Figure 1], item cr2 is outside of this range, so it is considered inappropriate and was removed.

<Table 4> Item fit index of the career transition readiness scale

Item	Measure	S.E.Measure	Infit	Outfit
ci1	-3.54	.097	1.099	1.061
ci2	-3.59	.098	1.269	1.117
ci3	-3.74	.100	1.108	1.092
ci4	-3.77	.100	1.054	1.098
ce1	-3.05	.092	.796	.829
ce2	-3.38	.095	.671	.636
ce3	-3.25	.094	.594	.568
ce4	-3.47	.096	.812	.852
es1	-3.65	.098	1.084	1.116
es2	-3.42	.096	1.120	1.208
es3	-4.00	.103	1.204	1.057
es4	-3.71	.099	.969	1.025
cr1	-2.38	.087	1.249	1.229
cr2	-2.19	.086	1.586	1.640
cr3	-3.30	.094	1.022	1.048
cr4	-2.54	.088	1.148	1.090
ca1	-3.08	.092	.723	.821
ca2	-3.05	.092	.980	1.031
ca3	-3.62	.098	.776	.726
ca4	-2.52	.088	.861	.909

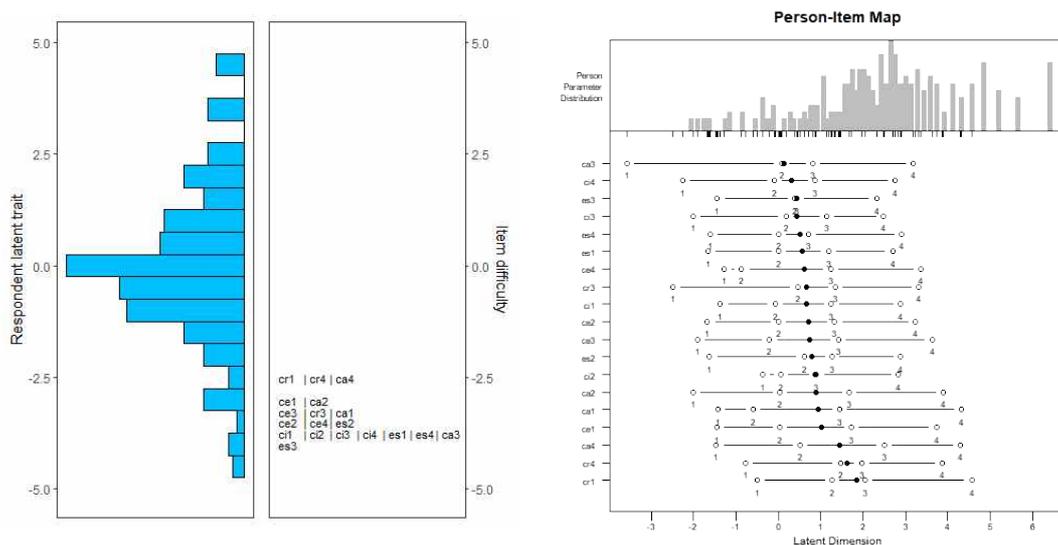〔Figure 1〕 Item infit and outfit of the career transition readiness scale

Third, the structural aspect of validity refers to whether the test score properly measures the construct for which the test is intended (Seol, 2007). A residual correlation coefficient between items exceeding .3 is considered to violate the unidimensionality of the scale (Petrillo et al., 2015). As shown in 〈Table 5〉, the residual between items of the sub-variable career identity exceeded .3. However, the correlation between the measurement variables constituting one latent variable was acceptable (Moon, 2022), and in the case of other areas, it was less than .3, so it was not a major problem.

〈Table 5〉 Correlation matrix between items residuals

	ci1	ci2	ci3	ci4	ce1	ce2	ce3	ce4	es1	es2	es3	es4	cr1	cr2	cr3	cr4	ca1	ca2	ca3	ca4
ci1	—																			
ci2	.466	—																		
ci3	.430	.296	—																	
ci4	.379	.410	.470	—																
ce1	-.085	-.192	.039	-.025	—															
ce2	.050	.029	-.027	-.078	.099	—														
ce3	-.127	-.033	-.087	-.075	.200	.423	—													
ce4	-.008	-.007	.031	.079	-.040	.067	.013	—												
es1	-.286	-.236	-.311	-.210	.083	-.006	-.129	.013	—											
es2	-.162	-.117	-.251	-.208	.012	.040	-.093	-.016	.588	—										
es3	-.175	-.146	-.271	-.154	.023	-.069	-.198	-.022	.491	.539	—									
es4	-.192	-.156	-.244	-.095	-.058	-.050	-.152	.001	.492	.591	.611	—								
cr1	-.172	-.197	-.098	-.129	-.050	-.161	-.113	-.238	-.204	-.181	-.145	-.156	—							

cr2 -.142 -.069 -.087 -.292 -.161 -.147 -.086 -.167 -.137 -.202 -.181 -.259 .155 —
cr3 .080 -.082 .003 -.007 -.240 -.095 -.116 -.036 -.219 -.256 -.339 -.198 .133 .025 —
cr4 -.151 -.136 -.064 -.289 -.172 -.202 -.069 -.148 -.151 -.268 -.262 -.341 .279 .313 .126 —
ca1 -.245 -.270 -.345 -.260 .071 -.108 .051 -.095 -.024 -.153 -.064 -.115 -.031 -.029 .021 .064 —
ca2 -.110 -.078 -.059 -.102 -.078 -.089 .006 .031 -.221 -.214 -.162 -.172 -.237 -.114 .064 -.046 .160 —
ca3 -.246 -.212 -.135 -.096 -.077 -.063 .072 -.042 -.184 -.179 -.120 -.087 -.028 -.136 .065 .034 .253 .313 —
ca4 -.290 -.293 -.254 -.202 -.036 -.034 .073 -.142 -.154 -.267 -.154 -.175 .135 .068 -.028 .141 .247 .178 .200 —

Finally, the substantive aspect of validity refers to the extent to which a model of the item content and the cognitive processing of subjects responding to the item consistently explains the observed item responses (Seol, 2007). Distribution of respondents' abilities & difficulty levels of items in [Figure 2] means that the difficulty levels of items are clustered too far down the distribution of respondents' abilities. This means that respondents chose high scores on most items. The person-item map in [Figure 2] also represents that the majority of items are easy for respondents to agree with (item cr2 excluded). This is largely due to the fact that the survey was completed by highly educated respondents with current jobs. <Table 6> shows that for all 19 items, the non-centralization threshold values and mean measures increase as the number of response categories increases. This means that there is no problem discriminating between respondents' ability levels.

[Figure 2] Distribution of respondents' abilities & difficulty levels of items, and person-item map

<Table 6> Item fit index of the career transition readiness scale

Item	Thurstone threshold				
	1	2	3	4	5
ci1	−12.0	−4.05	−2.61	−1.287	.417
ci2	−12.0	−3.27	−2.40	−1.488	.336
ci3	−12.0	−4.58	−2.54	−1.377	.074
ci4	−12.0	−4.83	−2.78	−1.579	.272
ce1	−12.0	−4.11	−2.49	−.830	1.195
ce2	−12.0	−4.29	−2.59	−1.183	.732
ce3	−12.0	−4.52	−2.75	−1.114	1.081
ce4	−12.0	−4.12	−3.11	−1.346	.826
es1	−12.0	−4.28	−2.61	−1.348	.256
es2	−12.0	−4.19	−2.19	−1.163	.427
es3	−12.0	−4.05	−2.49	−1.779	−.156
es4	−12.0	−4.23	−2.68	−1.646	.397
cr1	−12.0	−3.16	−1.48	−.320	1.926
cr2	−12.0	−2.58	−1.24	−.055	1.673
cr3	−12.0	−5.00	−2.34	−1.100	.802
cr4	−12.0	−3.39	−1.40	−.400	1.345
ca1	−12.0	−4.18	−2.94	−1.086	1.686
ca2	−12.0	−4.59	−2.56	−.859	1.323
ca3	−12.0	−6.08	−2.74	−1.548	.638
ca4	−12.0	−4.07	−2.06	−.127	1.734
M	−12.0	−4.18	−2.40	−1.082	.849

3. Convergent and discriminant validity

The following <Table 7> represents the correlation matrix between measurement variables. All variables are significant at the p=.01 level. In addition, the Cronbach's α values were .919, .910, .945, .834 and .893 for career identity, career efficacy, emotional support, career risk-taking, and career adaptability, respectively.

<Table 7> Correlation matrix between measurement variables

		ci1	ci2	ci3	ci4	ce1	ce2	ce3	ce4	es1	es2	es3	es4	cr1	cr3	cr4	ca1	ca2	ca3	ca4
Career indentity	ci1	1																		
	ci2	.762	1																	
	ci3	.756	.692	1																
	ci4	.724	.734	.771	1															
Career efficacy	ce1	.571	.517	.627	.584	1														
	ce2	.657	.638	.637	.605	.717	1													
	ce3	.594	.616	.616	.602	.748	.841	1												
	ce4	.587	.580	.613	.614	.617	.695	.673	1											
Emotional support	es1	.448	.458	.449	.475	.638	.642	.598	.603	1										
	es2	.508	.516	.480	.482	.620	.664	.620	.599	.827	1									
	es3	.486	.488	.456	.493	.606	.608	.562	.582	.783	.802	1								
	es4	.496	.502	.488	.533	.590	.636	.598	.604	.790	.832	.838	1							
Career risk-taking	cr1	.447	.424	.487	.451	.544	.543	.562	.444	.427	.451	.445	.454	1						
	cr3	.598	.518	.573	.550	.508	.608	.599	.573	.473	.467	.412	.489	.588	1					
	cr4	.503	.496	.543	.430	.546	.575	.626	.536	.499	.463	.438	.427	.673	.624	1				

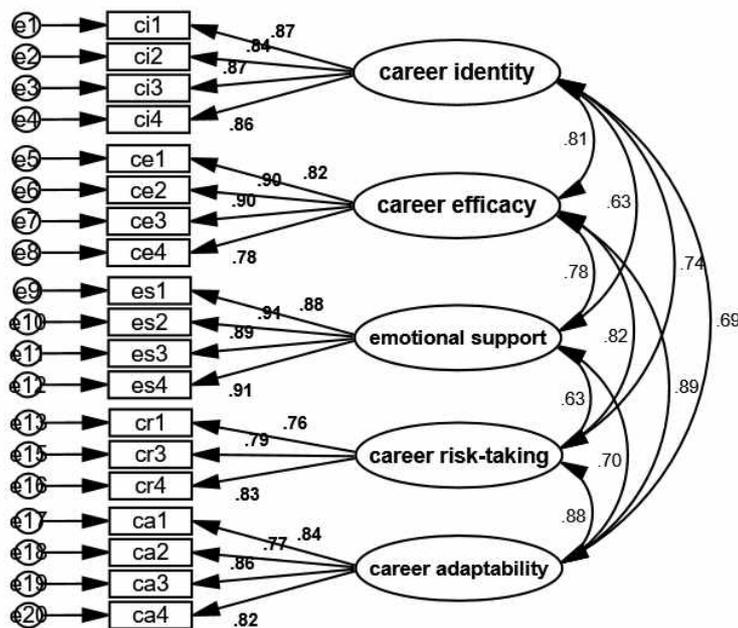|																			
	ca1	.488	.469	.461	.467	.656	.642	.688	.575	.584	.543	.563	.552	.530	.593	.626	1		
Career	ca2	.498	.506	.532	.488	.555	.598	.628	.582	.452	.468	.472	.479	.394	.574	.542	.630	1	
adaptability	ca3	.500	.503	.555	.550	.615	.661	.701	.610	.534	.545	.550	.580	.548	.623	.618	.722	.711	1
	ca4	.453	.440	.476	.473	.605	.647	.684	.543	.506	.475	.496	.503	.607	.562	.654	.694	.636	.687	1

Note. All variables are significant at the *p*=.01 level.

Convergent validity, which indicates whether the observed variables consistently measure the latent variables that are constructs, can be tested by first, factor loadings (.50 to .95) and significance (C.R.=1.965 or higher), second, Average Variance Extracted (AVE) (.5 or higher), and third, construct reliability (.7 or higher) (Woo, 2014). This study met the recommended criteria with standardized coefficients (.756 to .915) above .7, AVE values (.632 to .821) above .5, and construct reliability (.803 to .943) above .7 (See <Table 8> and [Figure 3]. The confirmatory factor analysis with maximum likelihood showed a good model fit with χ^2=273.760(*df*=142), TLI=.962, CFI=.968, RMSEA=.062.

<Table 8> Factor loadings and significance, construct reliability, and AVE values

		B	S.E.	*t*	*β*	Construct reliability	AVE
Career indentity	ci1	1			.871	.915	.759
	ci2	1.016	.059	17.171***	.843		
	ci3	.997	.055	18.147***	.869		
	ci4	.923	.052	17.773***	.859		
Career efficacy	ce1	1			.819	.917	.765
	ce2	1.094	.062	17.616***	.901		
	ce3	1.047	.059	17.684***	.903		
	ce4	.884	.063	14.128***	.780		
Emotional support	es1	1			.885	.943	.821
	es2	1.091	.050	21.633***	.915		
	es3	1.002	.049	20.428***	.892		
	es4	.985	.046	21.519***	.913		
Career risk-taking	cr1	1			.756	.803	.632
	cr3	.936	.076	12.353***	.793		
	cr4	1.141	.088	12.901***	.827		
Career adaptability	ca1	1			.839	.901	.735
	ca2	.993	.070	14.127***	.773		
	ca3	1.050	.063	16.710***	.861		
	ca4	1.126	.072	15.604***	.825		

*** *p*<.001

〔Figure 3〕 Confirmatory factor analysis (standardized coefficients)

Next, discriminant validity, which is the degree of difference between different latent variables, can be verified by first, AVE>$\varnothing^2$ (the square of the correlation between latent variables), second, whether $\varnothing \pm 2 \times$S.E. contains 1, and third, the χ^2 difference between unconstrained and constrained models (Woo, 2014). First, the AVE values was greater than the square of the correlation coefficient between latent variables ($\varnothing^2$) (See <Table 9>). Second, the correlation confidence interval ($\varnothing \pm 2 \times$S.E.) between latent variables did not include 1, so discriminant validity was also confirmed (See <Table 10>). Finally, since there are 10 constrained models and the chi-square differences between the constrained and unconstrained models range from 17.188 to 34.079, which are all greater than the rejection value of 3.841 at 1 degree of freedom, the latent variables can be considered as separate concepts. As seen above, discriminant validity was confirmed secured by satisfying all criteria.

<Table 9> Correlation between latent variables, construct reliability, square root of AVE

	Career indentity	Career efficacy	Emotional support	Career risk-taking	Career adaptability	Construct reliability
Career indentity	**.871**					.915
Career efficacy	.813**	**.875**				.917
Emotional support	.626**	.781**	**.906**			.943
Career risk-taking	.737**	.821**	.632**	**.795**		.803
Career adaptability	.689**	.887**	.700**	.883**	**.857**	.901

** $p<.01$,
Note. The diagonal is the square root of AVE

<Table 10> Confidence intervals for correlations between latent variables

Relationships between sub-variables		$\varnothing$	$\varnothing \pm 2 \times SE$	Confidence interval	
Career efficacy	Career indentity	.813	.813 $\pm$ 2 $\times$ .022 =	.769	.857
Emotional support	Career indentity	.626	.626 $\pm$ 2 $\times$ .039 =	.547	.705
Career risk-taking	Career indentity	.737	.737 $\pm$ 2 $\times$ .029 =	.678	.796
Career adaptability	Career indentity	.689	.689 $\pm$ 2 $\times$ .034 =	.621	.757
Emotional support	Career efficacy	.781	.781 $\pm$ 2 $\times$ .025 =	.731	.831
Career risk-taking	Career efficacy	.821	.821 $\pm$ 2 $\times$ .021 =	.779	.863
Career adaptability	Career efficacy	.887	.887 $\pm$ 2 $\times$ .014 =	.859	.915
Career risk-taking	Emotional support	.632	.632 $\pm$ 2 $\times$ .039 =	.554	.710
Career adaptability	Emotional support	.700	.700 $\pm$ 2 $\times$ .033 =	.634	.766
Career risk-taking	Career adaptability	.833	.833 $\pm$ 2 $\times$ .014 =	.855	.91

Ⅴ. Conclusion and Implications

The purpose of this study was to develop and validate an scale of career transition readiness among Korean adults. For this purpose, the collected data were analyzed using the Rasch model and confirmatory factor analysis. Finally, the researcher validated the career transition readiness scale, which consists of 19 items and 5 sub-variables (career identity, career efficacy, emotional support, career risk-taking, and career adaptability). The Korean version of the scale is presented in [Appendix 1].

This study can make a number of meaningful contributions in both academic and practical terms. First, this study has academic and practical significance in that it provides

an indicator of the extent to which Korean adults are prepared for career transition in the current and future society triggered by the Fourth Industrial Revolution. Unlike existing domestic and international studies that attempt to measure career maturity, career decision-making self-efficacy, and career preparation behaviour among adolescents and college students, this study focuses on Korean adults. Second, this study can provide meaningful implications in terms of measuring the career transition readiness of Korean adults in the future, as well as providing prescriptions for education and training to promote career transition based on the results. At the micro level, it can also generate data to measure and compare career transition readiness by age group. Based on this, it may be possible to provide customized education and training support for each age group in the planning and implementation of national labor policies. Finally, this study can also be used in employment and labor market policies to improve the employment rate and to support adults in changing jobs and finding employment. If the government supports vocational skills development training for unemployed and employed people, the career transition readiness test can be useful in the selecting potential trainees.

This study, however, has several limitations. Firstly, the sample is predominantly composed of individuals with high levels of education and current employment. It is therefore necessary to increase the generalizability of the career transition readiness scale developed in this study by including additional samples. Secondly, the scale focuses solely on the psychological and personal competence aspects of individuals, neglecting the contextual and socio-economic influences that play a role in influencing career transitions.

References

Arthur, M. B., Hall, D. T., & Lawrence, B. S. (1989). *Generating new direction in career theory.* In M. B. Arthur, D. T. Hall, & B. S. Lawrence (Eds.), *Handbook of career theory* (pp. 7-25). Cambridge University Press. https://doi.org/10.1017/CBO9780511625459.003

Bae, C. W. (2017). Life history research of a librarian who has transformed her life and dreams through reading. *Global Creative Leader: Education & Learning*, *7*(2), 41-69. http://doi.org/10.34226/gcl.2017.7.2.41

Bae, J. S. (2020, February 16). Involuntary retirees in their 40s and 50s...highest number in 5 years. *The JoongAng*. https://www.joongang.co.kr/article/23707157

Bundy, A. P. (2004). *Rural women in career transition: A look at Scholssberg's 4Ss, situation, self, support, and strategies* [Doctoral dissertation, The University of North Carolina].

Choi, O. H., & Kim, B. W. (2006). Career optimism and adaptability of the college students: The Korean validation study of the career futures inventory (CFI). *The Korea Journal of Counseling*, *7*(3), 821-833.

DeVellis, R. F. (2003). *Scale development: Theory and application* (2ed.). Sage.

Gratton, L. (2011). *The shift: The future of work is already here*. Harper Collins.

Heppner, M. J., Multon, K. D., & Johnston, J. A. (1994). Assessing psychological resources during career change: Development of the career transitions inventory. *Journal of Vocational Behavior*, *44*(1), 55-74. https://doi.org/10.1006/jvbe.1994.1004

Herr, E. L., & Cramer, S. H. (1996). *Career guidance and counseling through the lifespan: Systemic approaches*. Harper Collins.

Jang, K. Y., & Kim, B. W. (2009). The Korean validation study of the transition guide questio naire scale. *The Korea Journal of Counseling*, *10*(1), 399-415. http://doi.org/10.15703/kjc.10.1.200903.399

Jun, H. Y. (2013). *8 colors of 8 persons career transition narratives* [Doctoral dissertation, Chungnam National University].

Kim, B. H. (1997). *Career decision level and career preparation behavior of the college students* [Doctoral dissertation, Seoul National University].

Kim, E. J. (2008). *Development of career preparation type inventory for Korean college students* [Doctoral dissertation, Seoul Women's University].

Kim, K. H., Im, A., & Lee, J. P. (2008). *A study on support system for career transition among middle-aged and older groups* (2008-6). Korea Research Institute for Vocational Education

& Training. https://www.krivet.re.kr/ku/da/kuBAAVw.jsp?gn=E1-E120141232

Linacre, J. M. (2018). *A user's guide to Winstep-Ministep: Rasch-Model computer programs.* Oregon.

Louis, M. R. (1980). Career transitions: Varieties and commonalities. *Academy of Management Review, 5*(3), 329-340. https://doi.org/10.5465/amr.1980.4288836

Niles, S. G., & Harris-Bowlsbey, J. (2005). *Career development interventions in the 21st century* (2nd ed.). Pearson/Merrill Prentice Hall.

Moon, Y. J. (2022). Analysis of validity of the creative organizational climate scale: Focusing on the social workers of social welfare centers. *Korean Journal of Social Welfare Studies, 53*(3), 239-268. https://doi.org/10.16999/kasws.2022.53.3.239

Oh, Y. H. (2017, March 15). *The end of jobs.* The Chosunilbo. http://news.chosun.com/site/data/html_dir/2017/03/14/2017031403424.html

Park, Y. H. (2015). *Theory and practice of career coaching.* Sigma Press.

Petrillo, J., Cano, S. J., McLeod, L. D., & Coon, C. D. (2015). Using classical test theory, item response theory, and Rasch measurement theory to evaluate patient-reported outcome measures: A comparison of worked examples. *Value in Health, 18*(1), 25-34. https://doi.org/10.1016/j.jval.2014.10.005

Porfeli, E. J., & Savickas, M. L. (2012). Career Adapt-Abilities Scale-USA Form: Psychometric properties and relation to vocational identity. *Journal of Vocational Behavior, 80*(3), 748-753. http://doi.org/10.1016/j.jvb.2012.01.009

Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The career futures inventory: A measure of career-related adaptability and optimism. *Journal of Career Assessment, 13*(1), 3-24. https://doi.org/10.1177/1069072704270271

Schlossberg, N. K., & Kay, S. (2003). *The transition guide and questionnaire.* Transition Works.

Schlossberg, N. K., Waters, E. B., & Goodman, J. (1995). *Counseling adults in transition: Linking practice with theory* (2nd ed.). Springer.

Seol, H. S. (2007). A study for validation of scores for instruction evaluation questionnaires using Rasch measurement model. *Journal of Educational Evaluation, 20*(4), 31-51.

Shin, W. Y., Kim, M. G., & Kim, J. H. (2009). Developing measures of resilience for Korean adolescents and testing cross, convergent, and discriminant validity. *Studies on Korean Youth, 20*(4), 105-131.

Shin, Y. S., Ko, G. Y., & Jun, J. S. (2017). Research trends in elementary school career education: Focusing on domestic journals published in 2007-2016. *The Journal of Korea*

Elementary Education, *28*(1), 343-362. http://dx.doi.org/10.20972/Kjee.28.1.201703.343

Statistics Korea. (2020, January 15). *December 2019 and annual employment trends*. https://kostat.go.kr/board.es?mid=a10301030200&bid=210&act=view&list_no=380153

Super, D. E. (1976). *Career education and the meanings of work*. U.S. Department of Health, Education, and Welfare, Office of Education.

Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior*, *16*(3), 282-298. https://doi.org/10.1016/0001-8791(80)90056-1

Woo, J. P. (2014). *Concept and understanding of structural equation modeling*. Hannarae. ☞

Yoon, H. J. (2022). Exploratory study to develop a career transition competencies scale. *The Journal of University Studies*, *1*(1), 1-27. https://doi.org/10.56485/jous.2022.1.1.1

Yu, E. K. (2015). *The validation study of the Korean adolescence internet addiction proneness scale by mixed Rasch model* [Master's thesis, Chung-Ang University].

[Appendix 1] 커리어 전환 준비도 측정도구

문 항	A	B	C	D	E
1. 내가 추구하는 커리어는 나의 인생 목표에 부합한다.	①	②	③	④	⑤
2. 내가 추구하는 커리어는 내가 누구인지를 말해준다.	①	②	③	④	⑤
3. 나는 내가 진정으로 원하는 커리어를 추구하고자 한다.	①	②	③	④	⑤
4. 내가 추구하는 커리어는 나의 가치관에 부합한다.	①	②	③	④	⑤
5. 나는 커리어 전환 과정에서 발생할 수 있는 문제들을 해결할 수 있다.	①	②	③	④	⑤
6. 나는 커리어 목표를 달성할 수 있다고 믿는다.	①	②	③	④	⑤
7. 나는 커리어 전환을 위한 계획을 수립하고 실행할 수 있는 능력이 있다.	①	②	③	④	⑤
8. 나는 내가 원하는 커리어를 위해 무엇을 해야 하는지 안다.	①	②	③	④	⑤
9. 내 주변 사람들(가까운 가족, 친구, 지인 등)은 나의 커리어 전환 계획을 지지해준다.	①	②	③	④	⑤
10. 내 주변 사람들은 나의 커리어 전환 계획에 대해 자신감과 동기를 부여해준다.	①	②	③	④	⑤
11. 내 주변에는 내가 커리어 전환을 고민할 때 나를 지지해줄 사람이 있다.	①	②	③	④	⑤
12. 내 주변 사람들은 나의 커리어 전환 과정을 이해하고 격려해준다.	①	②	③	④	⑤
13. 나는 원하는 커리어를 이루기 위해 어느 정도의 위험은 감수할 수 있다.	①	②	③	④	⑤
14. 나는 커리어 성장을 위해서 시간과 노력을 투자한다.	①	②	③	④	⑤
15. 내가 바라던 커리어 기회를 추구할 때는 실패 가능성이 있더라도 도전한다.	①	②	③	④	⑤
16. 나는 커리어 세계의 변화에 잘 적응할 수 있다.	①	②	③	④	⑤
17. 나는 커리어 전환이 필요한 경우 다양한 선택지를 탐색한다.	①	②	③	④	⑤
18. 나는 커리어 전환에 필요한 새로운 기술을 배우는데 열려있다.	①	②	③	④	⑤
19. 나는 내 커리어 미래의 불확실성에 효과적으로 대처할 수 있다.	①	②	③	④	⑤

비고: A=전혀 그렇지 않다, B=그렇지 않다, C=보통이다, D=그렇다, E=매우 그렇다.
　　문항 1~4=커리어 정체성, 문항 5~8=커리어 효능감, 문항 9~12=정서적 지지, 문항 13~15=커리어 위험감수, 문항 16~19=커리어 적응성.