

THE IMPACT OF SOCIAL SUPPORT ON CAREER DECISION-MAKING LEVEL OF CHINESE COLLEGE STUDENTS: FOCUSING ON THE MEDIATING EFFECT OF CAREER MATURITY AND THE MODERATING EFFECT OF CAREER BARRIER

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Abstract: This study explores how social environmental variables such as social support, cognitive factors like career maturity, and emotional factors such as career barrier influence career decision-making levels. The research method involves conducting a statistical analysis through a survey of 1,016 Chinese university students. The results indicate that social support has a significant impact on career maturity and career decision-making levels. Career maturity plays a significant mediating role in the effect of social support on career decision-making levels, while career barrier exhibit a moderating effect in the relationship between career maturity and career decision-making levels. These findings contribute to understanding the complex interactions among various factors influencing university students' career decisions and employment, providing important insights that can inform the development and implementation of education and support programs.

Keywords: Social Support, Career Maturity, Career Decision Level, Career barrier

I. INTRODUCTION

Alongside China's economic growth, the education sector has significantly developed, leading to a continuous increase in the number of college students. Recently, the number of college graduates has failed to meet the employment demand. Since 2003, when China expanded its college enrollment, the number of graduates has surged sharply (Huang Yilan · Wu Jian, 2013). By 2022, it was reported that the number of college graduates would exceed 10 million, reaching a historic high, making the employment challenges for college students a serious social issue (My COS Research Institute, 2022). According to data from China's Ministry of Education, the number of college graduates in China rose from 8.34 million in 2019 to 8.74 million in 2020, 9.09 million in 2021, and 10.76 million in 2022, marking a year-on-year increase of approximately 1.67 million and setting a new record. However, the projected 11.58 million graduates in 2023 will further exacerbate the employment crisis for college students. Therefore, at the national level, there is a pressing need for greater attention and focus on the employment issues of college students. The college years are a critical period for career development. The level of career decision-making and the preparation process for employment during this time significantly impact one's future role as a working professional after graduation and are crucial factors in shaping the basic trajectory of an individual's life (Zhang Zhixian, 2005).

To address the issue, the Chinese Ministry of Education, through the 'Requirements for College Students' Career Development and Employment Guidance Course Teaching' in 2007, mandated universities to establish courses related to 'Career Skills Development and Employment Guidance' while also calling for the specialization and standardization of employment guidance. Subsequently, with the consecutive announcements of the '2007 Notice on Employment-Related Work for College Graduates' and the 'Employment Promotion Law,' the Chinese government took the lead in tackling the employment challenges faced by college students. The outbreak of the 2008 international financial crisis exacerbated the employment difficulties for Chinese college graduates. In response, the General Office of the State Council introduced the 'Strengthening Employment Work for College Graduates' policy in 2009, which served as the comprehensive framework for college graduate employment policies.

However, what is even more serious is that the unemployment of Chinese college students due to a lack of employment willingness and career barrier is emerging as a more severe social issue (Zheng Jing, 2015). Chinese college students feel anxious about employment despite the availability of jobs, due to uncertainties and the pressure in the competitive job market. This can be caused by various factors. China's job market tends to have excessive competition and high hiring difficulty. As the number of college graduates increases alongside economic growth, the competition for jobs is intensifying. Consequently, college students are left with anxiety about whether they can secure stable jobs in the future. For these reasons, Chinese college students are facing employment

The lack of willingness and career barrier leading to unemployment are becoming increasingly severe, and there is a growing need for the Chinese government and educational institutions to improve the employment support system and make efforts such as providing programs and support to enhance college students' employment willingness and confidence.

Therefore, this study aims to examine the relationships among contextual and personal variables that need to be explored in the performance process and career decision-making from the perspective of Social Cognitive Career Theory (SCCT), and to analyze how these variables influence career decisions. SCCT is a theoretical framework that explains how individuals' social environments and cognitive factors impact their career choices and development (Lent, Brown, & Hackett, 2002). Rooted in Bandura's Social Learning Theory, Krumboltz's Social Learning Theory of Career Decision Making, and Hackett and Betz's research on applying career competencies to women's career development, SCCT provides an integrated approach to understanding career selection and growth by considering psychological traits, cognitive abilities, social backgrounds, and situational factors. This theory elucidates the interaction between individuals' social cognitive processes and career decisions. Securing a job is not merely a means of livelihood but also holds significance in terms of social recognition and

self-actualization (Lee, 2008). When college students make career decisions, their levels of career decision-making and exploratory behaviors may vary depending on whether they possess psychological traits such as sustained interest and persistent effort. To prepare for employment and achieve career goals, students need not only continuous interest and effort toward future professions but also psychological protective factors to overcome the current severe job market challenges. Previous studies suggest that social support influences career maturity, which in turn affects career decision-making levels. According to surveys on college students' living conditions, a significant portion of counseling center clients report emotional issues related to careers and employment (Yoo & Lee, 2009). For Chinese college students, career barrier have already exceeded reasonable levels, negatively impacting their lives and functioning dysfunctionally. Thus, studying career barrier—an emotional variable related to employment—can provide deeper insights for career education and counseling. Accordingly, the author selected social support as an internal or contextual background variable to investigate the factors influencing career decision-making among Chinese university students, and career maturity and career decision-making level as contextual variables of behavioral choice. Additionally, to identify factors related to psychological anxiety, career barrier were selected. In other words, the purpose of this study is, first, to examine the current status of social support, career maturity, career decision-making level, and career barrier among Chinese university students. Second, it aims to investigate the mediating effect of career maturity in the relationship between social support and career decision-making level. Third, it seeks to identify the moderating effect of career barrier in the relationship between social support and career decision-making level.

II. THEORETICAL BACKGROUND

A. Social Cognitive Career Theory

The Social Cognitive Career Theory (SCCT) is grounded in Bandura's social learning cognitive theory and has evolved from Krumboltz's (1971) social learning theory related to careers and Hackett and Betz's (1981) research applying self-efficacy to women's career development (Lent, Brown, & Hackett, 2002). SCCT conceptualizes the personal determinants of career development by integrating three key variables—self-efficacy, outcome expectations, and personal goals—from Bandura's (1986) general social cognitive theory into the process of career development and choice. These three cognitive variables serve as fundamental components of an individual's career development, representing the primary mechanisms through which people perform personal agency (Betz & Hackett, 1981; Lent et al., 1994; Swanson & Gore, 2000). In other words, SCCT emphasizes the importance of cognitive factors (self-efficacy, outcome expectations, and goals) in career choice and decision-making processes, explaining an individual's career development and attitudes through the interaction of personal characteristics, cognitive factors, and environmental/contextual factors (Lent et al., 1994; Lent et al., 1996). This theory, by reflecting sociocultural characteristics, can provide pathways for understanding and intervening in college students' career development.

B. Social Support

Social support refers to various forms of positive resources that individuals can provide and obtain through meaningful social relationships. It is divided into actual social support and perceived social support, depending on whether the resources gained from interpersonal relationships are objectively or subjectively perceived (Kang Minjeong, 2015). Actual social support is the resources individuals receive from interpersonal relationships. Actual social support refers to the tangible assistance received, while perceived social support is the belief that one can receive help from others when needed (Park Jiwon, 1985). According to various research findings, perceived social support is more significant in predicting behavior than the actual social support received. Even if social support is provided, it is considered valueless unless perceived (Song Jongyong, 1988; Cho Myungsil & Choi Kyungsook, 2007).

Although the concept of social support varies among researchers in terms of conceptual and operational definitions and measurement methods, social support is generally seen as enabling individuals to better navigate significant life changes, and those with weaker social support are considered more vulnerable to life changes (Park Jiwon, 1985). From a functional perspective, social support can be understood as mitigating the negative effects of stressful situations or problems individuals need to resolve, enhancing a sense of stability and control over the environment in various situations, thereby improving adaptability (Ryu Jinsook, 2012; Park Jiwon, 1985). Thus, social support plays a crucial role in alleviating career-related stress among university students, providing emotional stability, and offering necessary advice and information to help resolve issues encountered during the career development process (Moon Seungtae, Park Miha, 2013). Social Cognitive Career Theory defines social support as everything that helps individuals actively engage in career behaviors (Betz, 1989). It describes social support as one of the contextual variables, along with career barrier, that

influences the setting and execution of career goals, and as the expected support individuals anticipate experiencing in the process of pursuing career choices (Lee Jung-ae, 2009).

Based on this, the present study aims to define social support as encompassing various forms of positive support and assistance from others in the career decision-making process of college students, including emotional support, informational support, material support, and evaluative support.

C. Career Maturity

Career maturity was first introduced in the research of Super (1953), and subsequently, studies approaching career from a developmental perspective emerged. Vocational maturity refers to the developmental level of an individual's career, defined as a continuous vocational development process involving exploration and engagement in occupations. It signifies the extent to which an individual copes attitudinally and cognitively during their developmental process (Super, 1953). High career maturity means a high degree of consistency between an individual's age, expected behaviors, and actual coping behaviors in response to problems. values and beliefs are established, accompanied by appropriate preparation and planning, and that concrete actions are being taken.

Based on the aforementioned prior research, this study defines the level of career decision-making among university students as the degree of clarity in their future career and job choices, as well as the confidence gained during the decision-making process. This includes how firmly an individual can make judgments in exploring and selecting a suitable job based on their competencies, interests, values, and goals. In this process, individuals go through various stages such as information gathering, self-reflection, goal setting, and planning. The higher the degree of confidence gained through these stages, the higher the career decision-making level is considered to be.

D. Career barrier

In the early stages of research on career barrier, the term 'career barrier' was not used. Instead, negative experiences and events related to careers experienced by women or minority groups were referred to as conceptual terms for studying career development (Lee Gun-woo, 2018). Gradually, the scope of the subject expanded. Crites (1969) used the term 'thwarting conditions' to describe factors that make workplace adaptation difficult. Fitzgerald, Fassinger, and Betz (1995) used the term 'barrier,' Shuttleworth (1992) used 'perceived barrier,' and Luzzo (1997) described career barrier as 'career-related barrier.' The term 'career barrier' was also referred to as 'barrier' or 'perceived barrier' (Fitzgerald, Fassinger & Betz, 1995; Shuttleworth, 1992) and 'career-related barrier' (Luzzo, 1996). Later, after Swanson and Tokar (1991) developed the Career barrier Inventory (CBI), the term 'career barrier' became widely used as related research accumulated (Son Eun-ryung, Lee Soon-hee, 2010). Various experiences related to careers, such as employment, advancement, promotion, job continuity, balancing household and work life, and job performance, can be referred to as 'career barrier' if they are perceived to negatively affect an individual's career choices, goals, aspirations, motivation, or hinder role behaviors (Son Eun-ryung, 2004). Kim Soo-hyun (2007) noted that existing foreign career barrier assessments, which combine psychological and objective/environmental factors, are not only commonly used in career research but have also been translated in Korea. Kim Eun-young (2001) translated 'career barrier' as 'career obstacles,' while Son Eun-ryung (2001) used the term 'career barrier.' Although 'career obstacles' and 'career barrier' were used interchangeably, the term 'career barrier' has become more prevalent in recent years. Therefore, this study uses the term 'career barrier.'

Kim Eun-young (2002) developed the Career Exploration Disability Test, which includes items measuring emotions or feelings caused by disabilities and vague worries or anxieties about future work life. However, it has been pointed out that this test has limitations in measuring actual career-related disabilities.

Consequently, a new Career Barrier Test was developed. This test measures psychological career barrier separately from objective/environmental career barrier. Therefore, this study focuses on the importance of distinguishing and understanding psychological career barrier and objective/environmental characteristics when measuring career barrier. Accordingly, this study intends to use the Career Barrier Test developed by Kim Soo-hyun (2007), which separately measures psychological factors (lack of occupational information and lack of self-clarity) and environmental factors (lack of employment infrastructure) as part of a scale.

III. RESEARCH METHODS

1. Research Model

This study aims to understand the current status of social support, career maturity, career decision-making level, and career barrier among Chinese college students, and to provide practical suggestions for employment by analyzing the structural relationships among these variables.

Therefore, the research model of this study is as follows (Figure 1).

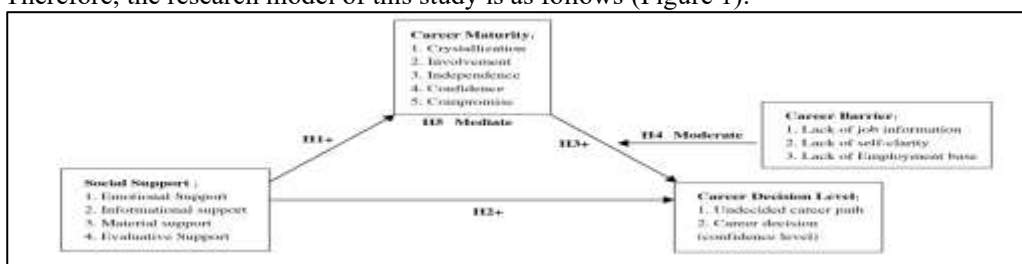


Figure 1 Research Model

2. Research Hypotheses

H1: Social support will have a positive correlation with career maturity.

H2: Social support will have a positive correlation with career decision-making level.

H3: Career maturity will have a positive correlation with career decision-making level.

H4: Career barrier will have a significant moderating effect on the relationship between career maturity and career decision-making level, It will cause an effect.

H5: Social support has a significant mediating effect on the level of career decision-making through career maturity.

3. Measurement Tools

The measurement tool for social support is based on the standardized scale revised by Hwang Yoon-kyung (1996) from the tool developed by Park Jiwon (1985). Additionally, considering the Chinese cultural background, minor modifications were made to the questionnaire items in this study (Table 1).

Table 1 Social Support scale items and sources

Scale	Sub-factors	Number of items	Item number	Sources
Social Support	Emotional Support	7	1, 5, 6, 4, 11, 18.24	Park Ji-won (1985), Hwang Yun-kyung (1996)
	Informational support	6	7, 8, 10, 14.17, 19	
	Material support	6	3, 9, 13, 15, 16, 20	
	Evaluative Support	6	2, 12, 21.22, 23.25	

To measure career maturity, the scale developed by Taylor and Betz (1983) and later modified and used by Kim Sun-joong (2005) after reliability verification will be employed. The career maturity scale consists of 33 items and includes five sub-factors. Specifically, it is divided into decisiveness, involvement, independence, confidence, and compromise. All items are rated on a 5-point scale, with reverse-scored items being inversely calculated. A higher score indicates a higher level of self-maturity (Table 2).

Table 2 Career Maturity scale items and sources

Scale	Sub-factors	Number of items	item number	Sources
Career Maturity	Crystallization	5	1 ~5	Taylor and Betz(1983)
	Involvement	5	6~10	
	Independence	5	11~15	
	Confidence	5	16~20	
	Compromise	5	21~25	

The tool used to measure career decision-making levels is the Career Decision Scale (CDS) developed by Osipow (1987), which was translated by Gohyangja (1993).

Specifically, there are questions related to career decision-making and career indecision. For career decision-making items, examples include: 'I have decided on a career path and feel comfortable with that decision, and I know how to implement it,' and 'I feel comfortable with the major I have chosen and know how to pursue it.' For career indecision items, examples include: 'I am having difficulty deciding among several equally appealing career options,' and 'I need to have a job but am not interested in any particular one.' (Table 3)

Table 3 Career Decision Level scale items and sources

Scale	Sub-factors	Number of items	item number	Sources
Career Decision Level	Undecided career path	16	3~18	Osipow (1987), Gohyangja (1993)
	Career decision (confidence level)	2	1, 2	

The measurement tool for Career Barrier used the employment insecurity scale developed by Cho Kyu-pan (2008). The career barrier scale consists of three sub-factors: lack of occupational information, lack of self-clarity, and lack of employment foundation, with a total of 28 survey items (Table 4).

Table 4 Career Barrier scale items and sources

Scale	Sub-factors	Number of items	item number	Sources
Career Barrier	Lack of job information	10	1 - 10	Cho Kyu-pan (2008)
	Lack of self-clarity	11	11-21	
	Lack of Employment base	7	22-28	

4. DATA PROCESSING METHOD

This study first conducted a thorough review of prior research on the relationships among the variables used in the study to proceed with empirical research. This involved a detailed organization of the definitions and measurement tools for the variables used in the study. Based on prior research, preliminary questions were selected to construct a questionnaire, and data was collected through a first preliminary survey using this questionnaire to conduct a pretest. Issues identified in the pretest were comprehensively addressed, and the questionnaire was partially revised and supplemented. Through further modifications and improvements to the questionnaire, a second preliminary survey was conducted, and the final questionnaire was used to finalize the measurement tools for statistical analysis.

To ensure the validity and reliability of the collected data, 1,016 Chinese university students were selected as the final sample, and a pilot test was conducted. Based on the validity and reliability results, items were ultimately selected through numerical values for each category. For reliability verification, a Cronbach's alpha value (Cronbach's α) of 0.8 or higher indicated verified reliability (Lee & Lim, 2011), and additional empirical analysis was performed.

The following explains the statistical analysis methods for the data. First, descriptive statistics are conducted on the survey results to identify the mean, standard deviation, and minimum/maximum values of the variables. Next, exploratory factor analysis is performed to analyze the correlations among the variables. To verify whether there are differences in the variables based on school, department, gender, major, etc., t-tests or ANOVA are conducted. Furthermore, to identify the factors influencing career decision-making levels, a three-step regression analysis by Baron & Kenny (1986) is performed. In the first step, a simple linear regression analysis is conducted to understand the correlation between the independent and dependent variables, determining the extent to which the independent variable influences the dependent variable. In the second step, the correlation between the independent variable and the mediator variable is analyzed to determine whether the mediator plays a role in the relationship between the independent and dependent variables. For this purpose, a mediation model is constructed, and regression analysis is performed. In the third step, the influence of the independent variable on the dependent variable is reanalyzed, considering the mediator variable. This helps identify changes in the influence of the independent variable due to the presence of the mediator. To determine whether career barrier have a moderating effect on the relationship between social support and career decision-making levels, a research model is developed and validated. Through this, the moderating effect of career barrier on the relationship between career maturity and social support is examined.

IV. RESEARCH FINDINGS

To recruit a total of 900 male and female students currently enrolled in Chinese universities, the population was divided into several strata based on attributes such as gender, major, and grade level. Then, random samples were drawn from each stratum to conduct a survey. The questionnaires were distributed to 225 students per grade level, ranging from freshmen to ~4th-year students, totaling 450 students of each gender, enrolled in the top 10 universities in Guangdong Province, China. The majors were broadly categorized into three groups: science, engineering, and humanities, and the questionnaires were collected in a ratio of 3:3:4 for these categories, respectively.

Incomplete or insincere responses were excluded from the analysis, and out of the 1,098 questionnaires distributed, a total of 900 met the aforementioned criteria and were used in the analysis.

The Current Status of Social Support, Career Maturity, Career Decision-Making Level, and Career barrier among Chinese College Students

The results of the frequency analysis on the survey items in this study, as shown in the table below, indicate that for social support, the average scores of the four sub-factors were similar, around 3.5 points. This suggests that the degree to which students feel socially supported is comparable across the sub-factors. In other words, it can be interpreted that students receive help and support at similar levels in their social relationships.

Among the five sub-factors of career maturity, independence scored the highest at 3.798 points, while decisiveness and involvement showed relatively lower average scores compared to other factors.

In terms of career decision-making level, the sub-factor of career decision scored high at 3.661 points, while career indecision was low at 3.550 points.

This indicates that while students generally show a high level of career decision-making, some remain uncertain about their career choices.

In the career barrier section, all scores were above 3.56 points, indicating a high level. This suggests that a significant number of students face challenges regarding employment. It implies that various career barrier factors have relatively high average values in this variable (Table 5).

Table 5 Descriptive Statistics

Variable	Component Factors	N	Mean	Sd
Social Support	Emotional Support	900	3.559	1.031
	Informational Support	900	3.680	1.059
	Material support	900	3.494	1.018
	Evaluative support	900	3.686	1.049
Career Maturity	Crystallization	900	3.508	1.034
	Involvement	900	3.602	0.853
	Independence	900	3.798	1.013
	Confidence	900	3.786	0.887
	Compromise	900	3.708	0.947
Career Decision Level	Undecided Career Path	900	3.550	1.027
	Career decision (confidence level)	900	3.661	1.057
Career Barrier	Lack of Career Information	900	3.657	0.919
	Lack of Self-Clarity	900	3.566	1.018
	Lack of Employment base	900	3.693	0.986

1. Demographic Characteristics

Examining the demographic characteristics of the survey respondents, first, the gender ratio consisted of 450 male students (50%) and 450 female students (50%). Additionally, the distribution by grade showed a 1:1:1:1 ratio from first to fourth year, with 225 students each. The majors were distributed equally among science, engineering, and humanities, with 300 students in each field.

Looking at the grade distribution, 63 students (7%) scored below 3.0, 46 students (5.1%) scored below 3.0~3.5, 562 students (62.4%) scored below 3.5~4.0, and 229 students (25.5%) scored 4.0 or above. The largest group was those scoring below 3.5~4.0, followed by those scoring 4.0 or above. Regarding post-graduation plans, the survey results showed that 243 students (27%) planned to find employment, 287 students (31.9%) intended to continue their studies, 88 students (9.8%) aimed to start their own businesses, and 282 students (31.3%) were undecided. The most common choice was continuing studies, followed closely by being undecided. Interpreting these results collectively, the grade distribution indicates that the majority of students fall into the mid-range, while post-graduation plans reveal a high proportion opting for further studies or remaining undecided. The survey results suggest that the uncertainty about post-graduation paths among Chinese university students leads to a higher tendency to choose further studies, and the high percentage of undecided students reflects the difficulty in making precise career choices due to the importance of career decisions and the pressure of a competitive job market (Table 6).

Table 6 Demographic Characteristics

Characteristics	Type	Frequency(persons)	Percentage(%)
Gender	Male	450	50
	Female	450	50
Grade	Grade1	225	25
	Grade2	225	25
	Grade3	225	25
	Grade4	225	25
Major	Science	300	33
	Engineering	300	33
	Humanities	300	34

Characteristics	Type	Frequency(persons)	Percentage(%)
Credit	Below 3.0	63	7

Characteristics	Type	Frequency(persons)	Percentage(%)
	Below 3.0~3.5	46	5.1
	Below 3.5~4.0	562	62.4
	4.0 or above	229	25.5
Career path after graduation	Employment	243	27
	Extension of study	287	31.9
	Entrepreneurship	88	9.8
	Undetermined	282	31.3
Sum		900	900

2. Correlational Analysis

To examine the impact of social support on the career decision-making level of Chinese university students, hypotheses were established based on theoretical background to explore their relationships, and the empirical analysis results are as follows. The correlational analysis of the main variables in this study revealed significant positive (+) correlations among social support, career maturity, career decision-making level, and career barrier.

This correlation analysis can help identify significant relationships between conceptual constructs and contribute to understanding how each concept interacts with various aspects related to students' career choices (Table 7).

Table 7 Correlational analysis results of variables

	Mean	Std	Social Support	Career Decision-MakingLevel	Career Maturity	Career Barrier
Social Support	3.603	0.763	1			
Career Decision-Making Level	3.562	0.956	0.532**	1		
Career Maturity	3.680	0.689	0.669**	0.473**	1	
Career Barrier	3.630	0.754	0.472**	0.475**	0.342**	1

* $p < 0.05$ ** $p < 0.01$

3. Hypothesis Testing

A. Effect of of Social Support on Career Maturity

The results of testing Hypothesis 1, which examines the impact of social support on career maturity, are shown in Table 8. As presented in Table 8, the adjusted R^2 coefficient is 0.449, indicating that the sub-factors of social support—emotional support, informational support, material support, and evaluative support—explain 29.1% of the influence on career barrier ($F = 183.974$, $p < 0.001$).

The standardized coefficients indicate the relative influence of each independent variable on the dependent variable. Emotional support ($t = 9.018$, $p < .01$), informational support ($t = 7.575$, $p < .001$), instrumental support ($t = 8.310$, $p < .001$), and appraisal support ($t = 5.145$, $p < .001$) were found to have a significant impact on career maturity. This ultimately suggests that the sub-factors of social support among Chinese university students have a significant positive (+) effect on career maturity, indicating that higher social support leads to higher career maturity. Thus, Hypothesis 1 was accepted.

This result implies that social support can play a crucial role in students' career decision-making process. When students receive social support, they may perceive their abilities and potential more positively, thereby strengthening their confidence in their career choices. It demonstrates that career decisions among Chinese university students can be influenced by factors related to social relationships. Therefore, universities or educational institutions should focus on enhancing students' social support and improving their career maturity.

The findings of this study can help identify the impact of social support on students' career decisions and maximize consideration of related influences when applying educational and counseling policies to their career choices.

Table 8 The Effect of Social Support on Career Maturity

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.510	0.083	—	18.252	.000**	—	—
Emotional support	0.172	0.019	0.258	9.018	.000**	0.749	1.334
Informational support	0.153	0.020	0.235	7.575	.000**	0.634	1.576
Material support	0.176	0.021	0.260	8.310	.000**	0.627	1.595
Evaluative support	0.103	0.020	0.156	5.145	.000**	0.664	1.506

Model summary: $R = 0.672$, $R^2 = 0.451$, Adjusted $R^2 = 0.449$, $SE = 0.510$, $\Delta R^2 = 0.451$.

ANOVA: $F(4, 895) = 183.974$, ** $p < .001$.

$N = 900$.

B. Effect of Social Support on Career Decision-Making Level

As shown in Table 9, the adjusted $R^2 = 0.302$ indicates that the four sub-factors of social support—emotional support, informational support, material support, and appraisal support—collectively explain 45.8% of the influence on career decision-making level ($F = 98.148$, $p < 0.001$). Standardized coefficients reflect the relative influence of each independent variable on the dependent variable. Emotional support ($t = 2.408$, $p < .001$), informational support ($t = 8.469$, $p < .05$), material support ($t = 7.959$, $p < .001$), and appraisal support ($t = 2.612$, $p < .01$) were found to have a significantly positive impact on career decision-making level. This ultimately demonstrates that social support among Chinese university students has a significant positive (+) effect on career decision-making level, with higher social support correlating to higher career decision-making levels. Consequently, Hypothesis 2 was adopted.

This result suggests that social support can have a significant impact on students' career decision-making levels. When students receive social support, they are more likely to develop confidence in their career decisions. It also indicates that Chinese college students' career decisions are closely linked to their social relationships, and social support plays a positive role in their career choices.

It emphasizes the positive influence of social support on students' career choices. These results highlight the significant role of social support and its potential impact on students' career decision-making. Therefore, universities and educational institutions should seek ways to strengthen students' social relationships and support systems, thereby enhancing their career decision-making levels.

Table 9 The Effect of Social Support on Career Decision-Making Level

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.214	0.129	—	9.403	.000**	—	—
Emotional support	0.072	0.030	0.078	2.408	.016*	0.749	1.334
Informational support	0.237	0.032	0.263	7.512	.000**	0.634	1.576
Material support	0.263	0.033	0.280	7.959	.000**	0.627	1.595
Evaluative support	0.081	0.031	0.089	2.612	.009**	0.664	1.506

Model summary: $R = 0.552$, $R^2 = 0.305$, Adjusted $R^2 = 0.302$, $SE = 0.796$, $\Delta R^2 = 0.305$.

ANOVA: $F(4, 895) = 98.148$, * $p < .005$, ** $p < .001$.

$N = 900$.

C. Effect of Career Maturity on Career Decision-Making Level

As shown in Table 10, the adjusted $R^2 = 0.243$ indicates that the sub-factors of career maturity, namely goal selection, occupational information, problem-solving, future planning, and self-evaluation, were found to have an explanatory power of 22.8% on the level of career decision-making ($F = 58.760$, $p < 0.001$).

Standardized coefficients indicate the relative influence of each independent variable on the dependent variable. Overall, career maturity was found to have a significant positive effect on career decision-making level. Examining the sub-factors, the results showed significance for Decisiveness ($t = 7.309$, $p < .001$), Involvement ($t = 0.572$, $p > .05$), Independence ($t = 0.644$, $p > .05$), Confidence ($t = 4.430$, $p < .001$), and Compromise ($t = 5.509$, $p < .001$).

This ultimately means that the higher the career maturity of Chinese college students, the higher their career decision-making level, indicating a significant positive (+) effect. Therefore, Hypothesis 3 was accepted. However, among the sub-factors, occupational information and problem-solving factors were found to have no significant effect on career decision-making level.

These results suggest that career maturity can significantly influence students' career decision-making levels. The more students believe in their abilities, set goals, plan for the future, and evaluate themselves, the more their confidence in career decisions increases, leading to higher career decision-making levels. Career decision-making among Chinese university students is closely related to self-maturity, and it is important to help them gain greater confidence in future career decisions. These findings highlight the importance of career maturity and can aid in focusing attention on supporting students to strengthen their career maturity regarding career choices.

Table 10 The Effect of Career Maturity on Career Decision-Making Level

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.212	0.155	—	7.808	.000**	—	—
Crystallization	0.251	0.034	0.271	7.309	.000**	0.612	1.635
Involvement	0.023	0.041	0.021	0.572	0.567	0.638	1.566
Independence	0.016	0.034	0.016	0.462	0.644	0.664	1.505
Confidence	0.163	0.037	0.151	4.430	.000**	0.723	1.382
Compromise	0.192	0.035	0.190	5.509	.000**	0.707	1.414

Model summary: $R = 0.497$, $R^2 = 0.247$, Adjusted $R^2 = 0.243$, $SE = 0.829$, $\Delta R^2 = 0.247$.

ANOVA: $F(5, 894) = 58.760$, $**p < .001$.

$N = 900$.

D. The Mediating Effect of Career Maturity on the Influence of Social Support on Career Decision-Making Level

Table 11 presents the results of the mediating effect of career maturity on the influence of the independent variable, social support, on the dependent variable, career decision-making level. Following the three-step procedure proposed by Baron & Kenny (1986), the mediating effect of the mediating variable between the independent and dependent variables was analyzed. The Sobel Test was used to verify the statistical significance of the mediating effect. [Model 1] examines the influence of the independent variable on the mediating variable, [Model 2] examines the influence of the independent variable on the dependent variable, and [Model 3] examines the influence of both the independent and mediating variables on the dependent variable, conducting a hierarchical regression analysis in three steps.

The analysis results indicate that all regression models are appropriate: [model 1] $F = 354.367$ ($p < .001$), [model 2] $F = 729.338$ ($p < .001$), and [model 3] $F = 199.358$ ($p < .001$). The explanatory power is as follows: [model 1] $R^2 = 0.283$, $\text{adj.} R^2 = 0.282$, [model 2] $R^2 = 0.448$, $\text{adj.} R^2 = 0.448$, [model 3] $R^2 = 0.308$, $\text{adj.} R^2 = 0.306$.

The regression coefficient test results for model 1] showed $\beta = 0.532$ and $p = 0.000$, indicating that the independent variable had a significant positive (+) effect on the mediator variable, fulfilling the first condition for mediation effect analysis. For model 2], $\beta = 0.669$ and $p = 0.000$ demonstrated that the independent variable had a significant positive (+) effect on the dependent variable, satisfying the second condition. Finally, model 3] revealed that the independent variable affected the dependent variable with $\beta = 0.390$ and $p = 0.000$, showing a significant positive (+) effect, while the mediator variable had an effect of $\beta = 0.212$, with $p = 0.000$, statistically significant, thus fulfilling the third condition. To verify the statistical significance of this mediation effect, a Sobel Test was conducted, yielding a significant result of $Z = 8.124$ ($p < .001$).

These results indicate that career maturity plays a significant mediating role in the influence of social support on the career decision-making level of Chinese college students. The effect of social support on career decision-making level is transmitted through career maturity. This outcome demonstrates that "career maturity" serves as a crucial mediator in the relationship between social support and career decision-making level, and thus, Hypothesis 5 was accepted.

When Chinese college students make career decisions, receiving social support increases their career maturity. This maturity, in turn, positively influences their career decision-making level. This structure can be interpreted as students recognizing their abilities and building self-confidence through social support, which plays a vital role in the process.

These results suggest that social support and career maturity play a significant role in the career decision-making process. When students make career decisions, they gain confidence in their abilities while receiving support from those around them, enabling them to make future-oriented choices. Therefore, it is crucial for education and support programs to consider these factors and explore ways to assist and strengthen students' career decision-making processes (Table 12-13).

Table 11 Verification of the Mediating Effect of Career Maturity (Model 1)

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.160	0.130	—	8.898	.000**	—	—
Social support	0.667	0.035	0.532	18.825	.000**	1.000	1.000

Model summary: $R = 0.532$, $R^2 = 0.283$, Adjusted $R^2 = 0.282$, $SE = 0.809$, $\Delta R^2 = 0.283$.
ANOVA: $F(1, 898) = 354.367$, $**p < .001$.
 $N = 900$.

Table 12 Verification of the Mediating Effect of Career Maturity (Model 2)

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.501	0.082	—	18.205	.000**	—	—
Social support	0.605	0.022	0.669	27.006	.000**	1.000	1.000

Model summary: $R = 0.669$, $R^2 = 0.448$, Adjusted $R^2 = 0.448$, $SE = 0.512$, $\Delta R^2 = 0.448$.
ANOVA: $F(1, 898) = 729.338$, $**p < .001$.
 $N = 900$.

Table 13 Verification of the Mediating Effect of Career Maturity (Model 3)

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	0.719	0.150	—	4.794	.000**	—	—
Social support	0.489	0.047	0.390	10.432	.000**	0.552	1.812
Career Maturity	0.294	0.052	0.212	5.664	.000**	0.552	1.812

Model summary: $R = 0.555$, $R^2 = 0.308$, Adjusted $R^2 = 0.306$, $SE = 0.795$, $\Delta R^2 = 0.025$.
ANOVA: $F(2, 897) = 32.083$, $**p < .001$.
 $N = 900$.

E. The Moderating Effect of Career Barrier on the Relationship between Career Maturity and Career Decision-Making Level

To verify the moderating effect of career barrier on the relationship between career maturity and career decision-making level, hierarchical regression analysis was conducted, and the results were reconfirmed through PROCESS. In this study, Model 1 involved inputting career decision-making level identified as relevant through correlation analysis. In Step 2, the independent variable, career maturity, and the moderating variable, career barrier, were input. In Step 3, the regression equation predicting career decision-making level was validated by including the interaction term of the mean-centered independent variable and moderating variable, career maturity $\times$ career barrier. The analysis results of the moderating effect of career barrier are presented in the table below (Table 14).

Table 14 Moderating Effect of Career Barrier

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	1.147	0.153	—	7.512	.000**		
Career Maturity	0.656	0.041	0.473	16.088	.000**	1.000	1.000
Constant	0.134	0.164	—	0.821	0.412		
Career Maturity	0.488	0.040	0.351	12.127	.000**	0.883	1.133
Career Barrier	0.450	0.037	0.355	12.241	.000**	0.883	1.133
Constant	1.311	0.570	—	2.300	.022*		
Career Maturity	0.154	0.160	0.111	0.962	0.337	0.799	1.251
Career Barrier	0.095	0.169	0.075	0.560	0.575	0.862	1.161
Interaction term	0.099	0.046	0.431	2.154	0.031*	0.868	1.153

Model summary: Multiple steps:
Step1: $R^2 = 0.224$, $F(1,898)=258.817$
Step2: $R^2 = 0.335$, $F(2,897)=149.836$
Step3: $R^2 = 0.338$, $F(3,896)=4.641$
* $p < .005$, ** $p < .001$.

Analysis results indicate that significant main effects were found for career maturity ($B=.488$, $p<.001$) and career barrier ($B=.450$, $p<.001$). When the interaction term between the two variables was included, the change amount significantly increased. In other words, career barrier were found to have a moderating effect between career maturity and career decision-making level.

V. CONCLUSION

Due to excessive competition in the job market and high hiring difficulty, college students are experiencing anxiety about whether they can secure stable employment. This has led to a growing trend of students not seeking employment due to a lack of job-seeking motivation and career barrier. The Chinese government and educational institutions emphasize the need to improve the employment support system and provide programs and support to enhance college students' job-seeking motivation and confidence.

This study, inspired by such social contexts, aims to examine various contextual and personal variables influencing college students' career decision-making from the perspective of Social Cognitive Career Theory. This theory is based on the premise that individuals' social environments and cognitive factors influence their occupational choices and career development. Additionally, it focuses on career barrier among emotional factors related to employment, seeking to provide a deeper understanding of career education and counseling for college students.

Therefore, the purpose of this study is to investigate the mediating effect of career maturity and the moderating effect of career barrier in the relationship between social support and career decision-making level. Through this, we aim to enhance the understanding of university students' career decisions and employment and propose policies and programs for improvement.

1. Summary of Research Findings

The research results showed that social support has a significant impact on career maturity. This finding suggests that social support can play an important role in students' career decision-making process. When students receive social support, they tend to perceive their abilities and potential more positively, which can strengthen their confidence in their career paths. This demonstrates that the career decisions of Chinese university students can be influenced by factors related to social relationships. Therefore, universities and educational institutions should focus on strengthening students' social support and improving their career maturity.

Furthermore, social support significantly influences career decision-making levels. This indicates that when students receive social

support, they are more likely to develop confidence in their career decisions. It also highlights that the career decisions of Chinese university students are closely tied to social relationships, and social support positively impacts their career choices.

Examining the relationship between career maturity and career

decision-making levels revealed that the career maturity of Chinese university students has a significant positive (+) effect on their career decision-making levels, showing that higher career maturity leads to higher career

decision-making levels. However, among the sub-factors, occupational information and problem-solving factors did not significantly affect career decision-making levels. This result suggests that career maturity can greatly influence students' career decision-making levels. The more students believe in their abilities, set goals, plan for the future, and evaluate themselves, the more their confidence in career decisions increases, leading to higher career decision-making levels. The career decisions of Chinese university students are closely related to their self-maturity, and it is important to help them gain confidence in future career decisions. These findings emphasize the importance of career maturity and support the need to enhance students' career maturity in their career choices.

The study found that career maturity has a significant mediating effect on the impact of social support on career decision-making level. In other words, the influence of social support on career decision-making is transmitted through career maturity. When Chinese college students receive social support while making career decisions, their career maturity increases. This maturity, in turn, positively affects their career decision-making level.

This structure suggests that students play a crucial role in recognizing their abilities and building self-confidence through social support. These findings imply that social support and career maturity are significant factors in the career decision-making process. When students make career decisions, they enhance their confidence in their abilities while receiving support from those around them, enabling them to make future-oriented choices. Therefore, in educational and support programs, it is essential to consider these elements and explore ways to assist and strengthen students' career decision-making processes.

The study on the moderating effect of career barrier in the relationship between career maturity and career decision-making level revealed that career barrier have a moderating effect between career maturity and career decision-making level. In other words, the correlation between career maturity and career decision-making level varies depending on the presence of career barrier. This provides important insights into understanding how the relationship between university students' career maturity and career decision-making level is formed and developed in given environments or situations. Additionally, by identifying how career barrier moderate this relationship, we can gain insights into the difficulties university students face in career decision-making and employment. Such moderating effects may vary among individual participants or specific groups, suggesting the need for tailored support or counseling for university students. Understanding these moderating effects can play a crucial role in developing individualized and effective support strategies for university students struggling with career decision-making and employment.

2. Suggestions

Based on these research findings, the following suggestions are proposed.

Universities or educational institutions should develop and implement programs to strengthen students' social support. These programs provide opportunities for students to receive support from peers, professors, and family members, while enhancing communication and collaboration skills to help students form more positive social relationships. Additionally, universities should support programs that strengthen students' career maturity, aiding them in self-awareness, goal-setting, and future planning to foster personal growth.

Furthermore, these programs can facilitate in-depth and practical consideration of academics and career paths. They should also focus on career exploration, information gathering, and improving problem-solving skills, enabling students to gain confidence in making future decisions. Schools need to provide essential support at an institutional level to achieve these goals.

As a way to overcome career barrier, universities can provide support such as individual counseling, group sessions, and psychological assistance to help students minimize the negative impact of career barrier in the relationship between career maturity and career decision-making levels.

Universities should integrate these programs to establish an efficient and unified career support system. Through this support system, students can receive assistance in various aspects, which will positively impact academic achievement, career choices, and employment.

These strategic proposals are expected to contribute to overcoming challenges in students' employment and career decision-making and to present effective methods for achieving positive outcomes.

3. Significance and Limitations of the Study

Through this study, it was confirmed that social support has a significant impact on university students' career maturity and career decision-making levels. This emphasizes the importance of social relationships in university students' career decisions and is expected to serve as a good opportunity to inform educational institutions and policymakers of the need to provide social support. The study results confirmed that career maturity plays a significant mediating role in the effect of social support on career decision-making levels. This suggests a structure where social support indirectly influences career decisions through career maturity, offering academic significance in providing a new understanding of the career decision-making process.

However, this study has the following limitations.

The study was conducted in a specific time and region, with a focus on a particular group of university students. Therefore, there may be limitations in generalizing these results to all Chinese university students. Additionally, this study was based on a survey and relied on respondents' subjective opinions. It appears necessary to collect qualitative data alongside quantitative data to derive results from more diverse perspectives.

In addition to the main variables, there was insufficient consideration of various external variables. Future research should consider more variables to enable a more comprehensive analysis.

Considering these limitations, future research is expected to develop in a direction that incorporates more diverse target groups and variables, aiming to derive broader and more in-depth results.

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REFERENCES

1. Baron, R. M., Kenny, D. A. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 1986, 51(6), 1173-1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
2. Hackett, G., Betz, N. E. An exploration of the mathematics self-efficacy/mathematics performance correspondence. *Journal for Research in Mathematics Education*, 1989, 20(3), 261-273. <https://doi.org/10.2307/749515>
3. Hong, G. J., Han, S. C. The mediating role of resilience in the effect of perceived social support on career maturity among adolescents. *Korean Journal of Youth Studies*, 2014, 25(3), 125-143. <https://doi.org/10.14816/sky.2014.08.74.125>
4. Hwang, Y.-K. The relationship between perceived peer social support and psychosocial maturity among adolescents (Master's thesis)., 1996, Ewha Womans University.
5. Hwang, Y.-J. Factors affecting career decision and career-information awareness among general high school students. *Sociology of Education*, 2007, 17(1), 131-158.
6. Jo, G.-P. Development and validation of an employment anxiety scale. *Educational Research*, 2008, 46(2), 53-75.
7. Jo, M.-S., Choi, K.-S. Testing a structural model of late adolescents' ego-identity, perceived social support, career-decision self-efficacy, career maturity, and career preparation behaviors. *Journal of Counseling*, 2007, 8(3), 1085-1099.
8. Kang, M., Kang, M. Structural relationships among college students' perceived social support, self-efficacy, and career decision-making level. *Educational Methodology Research*, 2015, 27(4), 489-510.

9. Kim, B. H., Kim, K. H. Development and typology of career decision levels and career preparation behaviors among university students. *Korean Journal of Counseling and Psychotherapy*, 1997, 9(1), 311-333.
10. Kim, E. Y. Development and validation of the Korean Career Barriers Inventory (KCBI). *Korean Journal of Counseling and Psychotherapy*, 2002, 14(1), 219-240.
11. Kim, C.-K., Kim, H.-O. Correlates of adolescents' career maturity. *Journal of Vocational Education Research*, 1989, 8(1), 143-160.
12. Kim, H.-S., Jang, G.-M., Lee, N. Effects of a career exploration program on university students' career development, ego identity, and career decision level. *Educational Psychology Research*, 2004, 18(1), 261-278.
13. Kim, S. H. The relationship between psychological career barriers and objective/environmental career conditions among university students. *Korean Journal of Counseling and Psychotherapy*, 2007, 19(4), 1057-1078.
14. Kim, S.-J. The effects of career barriers, hope, and career-decision self-efficacy on career preparation behaviors (Doctoral dissertation). 2005, Hongik University.
15. Ko, H. J. A review of career decision-making models. *Human Understanding*, 1992, 13, 3-19.
16. Lee, K.-A., Shin, H.-R., Yoo, N.-H., Lee, K. School counseling: Development and validation of a short college adjustment scale. *Journal of Counseling*, 2008, 9(2), 739-754.
17. Lee, K., Han, J.-C. Tools for validation of career-attitude measurement instruments. *Career Education Research*, 1997, 8(1), 219-255.
18. Lee, J.-A. Effects of self-efficacy, vocational values, and employability on the pursuit of career goals (Doctoral dissertation). 2009, Daegu University.
19. Lent, R. W., Brown, S. D., Hackett, G. Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 1994, 45(1), 79-122. <https://doi.org/10.1006/jvbe.1994.1027>
20. Lent, R. W., Brown, S. D., Hackett, G. Social cognitive career theory. In D. Brown, Associates (Eds.), *Career choice and development*, 4th ed., 2002, pp. 255-311.
21. Lim, E.-M., Jang, S.-S. Immediate and sustained effects of an Internet-based career-information search program: Effects on high school students' career decision levels and career-decision self-efficacy. *Educational Psychology Research*, 2004, 18(4), 139-154.
22. Osipow, S. H. Counseling psychology: Theory, research, and practice in career counseling. *Annual Review of Psychology*, 1987, 38(1), 257-278.
23. Park, J.-W. A study for the development of a social support scale (Doctoral dissertation). 1985, Yonsei University.
24. Ryu, J.-S. Structural relationships among college students' perceived social support, family resilience, self-determination, career-decision commitment, and career preparation behaviors (Doctoral dissertation). 2012, Chungbuk National University.
25. Shim, H.-G. Effects of parental career expectations and attachment on university students' career decisions (Doctoral dissertation). 2007, Seoul Women's University.
26. Son, E.-R. Perceived career barriers and career decision among female university students. *Journal of Counseling*, 2001, 2(2), 251-262.
27. Son, E.-R. The role of perceived career barriers in the career-choice process. *Journal of Counseling*, 2004, 5(3), 623-635.
28. Song, J.-Y. Relationships between perceived social support and psychological adjustment; the effect of social support on dual-task performance and anxiety (Master's thesis). 1988, Seoul National University.
29. Song, Y.-S. Exploring the role and competencies required of facilitators for HRD activities within corporations. *Corporate Education and Talent Research*, 2010, 12(2), 51-72.
30. Super, D. E. A theory of vocational development. *American Psychologist*, 1953, 8(5), 185-190.
31. Swanson, J. L., Tokar, D. M. Development and initial validation of the Career Barriers Inventory. *Journal of Vocational Behavior*, 1991, 39(3), 344-361. [https://doi.org/10.1016/0001-8791\(91\)90043-L](https://doi.org/10.1016/0001-8791(91)90043-L)
32. Yoo, N.-H., Lee, K. Career counseling: The effect of career barriers on career-decision self-efficacy — the mediating role of active stress coping. *Journal of Counseling*, 2009, 10(4), 2241-2255.
33. Zheng, J. The role of university-industry cooperation in entrepreneurship education at higher vocational colleges: A case study from Guangdong. *Vocational Education*, 2015, (33), 34-36.
34. Zunker, V. G. Career, work, and mental health: Integrating career and personal counseling. Sage, 2008.