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Original Paper

The Impact of College Students' Career Decision Self-Efficacy on Career Adaptation from the Perspective of High-Quality Employment: The Mediating Role of Career Preparation Behavior

Baiyan Du[1], Xiaojing Sheng[2], Qun Ye[3] & Yuege Lai[4*]

[1234] College of Teacher Education, Quzhou University, Quzhou, Zhejiang, 324003, China

[*] Corresponding author, E-mail: 32073@qzu.edu.cn

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Abstract

This study primarily analyzes the impact of career decision self-efficacy and career preparation behavior on career adaptation, discussing the mediating role of career preparation behavior among 522 college students. The results show significant positive correlations among career decision self-efficacy, career preparation behavior, and career adaptation. Career decision self-efficacy significantly positively influences career preparation behavior, with the sub-factors of influence in descending order being problem-solving, future planning, and goal-setting. Self-evaluation and career information do not have a significant impact on career decision self-efficacy. Career decision self-efficacy also has a significant positive effect on career adaptation, with future planning and problem-solving having the highest influence. Self-evaluation, career information, and goal-setting do not significantly impact career adaptation. Career preparation behavior has a significant positive effect on career adaptation, with the sub-factors in descending order being information gathering behavior, goal achievement behavior, and tool preparation behavior. In the mediation test, career preparation behavior partially mediates the effects, mainly through problem-solving and future planning influencing information gathering and goal achievement behaviors, thereby enhancing

students' interest in careers, self-behavioral control, curiosity about future developments, and confidence. Thus, problem-solving and future planning in career decision self-efficacy are critical for enhancing students' career adaptation and achieving high-quality employment.

Keywords

High-quality employment, Career decision self-efficacy, Career adaptation, Career preparation behavior

1. Introduction

The university phase is a crucial period for students to adapt from school to professional life and secure stable employment. During this time, deciding on career direction and preparation is one of the essential tasks for college students (Zhuo, Li, & Feng, 2024). Successfully completing these developmental tasks can lead to a satisfying and fruitful career and a positive self-perception. However, failure to complete these tasks may result in frequent employment failures or premature job changes (Jeon, 2023). In recent years, many Chinese college graduates have found it difficult to adapt to their jobs and resigned. According to a survey by MyCOS (2023), the six-month resignation rate among graduates from 2018 to 2022 remained at 42%, with 43% leaving due to dissatisfaction with salary and benefits, 31% due to lack of personal development opportunities, 25% finding job demands too high and stressful, and 19% not adapting to management systems and culture. Jiang and Feng (2021)'s survey of 2650 Chinese college students showed that 41.62% of recent graduates were dissatisfied with their salary; 46.24% were dissatisfied with their career development prospects. As the job market becomes more competitive, employers have increasingly higher demands for newly employed college graduates, such as extensive work arrangements and unequal pay for the same work or overtime requirements (Xu, 2022). This shows that some college graduates may resign shortly after employment due to discrepancies between expected salaries, insufficient personal development space, and high job demands. With the rapidly changing labor market and professional environment, students need to consider adapting to their career development earlier (Yin, 2023).

Career adaptation for college students means not only employment success after graduation but also the ability to adapt well to current social demands and the employment environment of the time. Thus, career adaptation can be seen as a prerequisite for achieving high-quality employment after graduation (Xu, 2023). Enhancing career adaptation ensures that college students obtain jobs that match their academic and capability qualifications after graduation, reflecting personal and social value and achieving high job satisfaction (Gao, 2019). Additionally, if most students possess high career adaptability, it indicates that universities have strong career training capabilities, including effective career planning for student groups with employment quality as a training goal (Park, Park, 2022). Therefore, career adaptation is a process of coordination between students, work, society, and the employment environment, and it also drives talent career education (Wang, Yan, Cheng, Ma, & Wang, 2023).

Career adaptation cannot be changed or enhanced instantaneously; it first requires college students to make rational and confident career decisions (Wang, 2021). As Jiang, Fan, Zhang, and Li (2022) observed, when college students have high career decision self-efficacy, the efforts they make are not only limited to meeting employment thresholds but are geared towards a career development process that suits their future goals. Previous research has also confirmed the positive impact of career decision self-efficacy on career adaptation, proving it to be a driving force for college students' career adaptation (Sun young, Su, 2020; Parmentier, Pirsoul, & Nils, 2022). Typically, when making decisions, students with high efficacy are more proactive in assessing their abilities and career opportunities, believing they can successfully resolve issues encountered during the career choice process (Baek & Lee, 2019). However, the influence of students' career decision efficacy on career adaptation is an area often overlooked in past research. Under the influence of career decision efficacy, college students' proactive information gathering, confidence in problem-solving, and conscious decision-making contribute to their adaptation to professional roles and demands, but the specific factors that best enhance career adaptation remain to be identified.

Meanwhile, China has focused on the employment quality of college students, and while various local governments in China formulate policies for college graduates' employment, many Chinese researchers have also verified the contribution of positive psychological resources to career adaptation (Xu, Lu, & Guo, 2023; Fu, Cai, Yang, Pan, Xu, & Shi, 2023; Li, Yu, Mei, Liu, Li, & Luo, 2021). As individuals possess different psychological resources, their behaviors and outcomes vary (Xu, Hou, Zhang, Cui, & Hu, 2023; Temel, 2018). Therefore, it is necessary to explore the potential mediating role of career preparation behavior in the relationship between career decision self-efficacy as a positive psychological resource and career adaptation outcomes. Career preparation behavior is not just about personal career-related cognition or attitudes but involves specific practical actions taken to make rational career decisions and achieve goals (Green, Sanczyk, Chambers, Mraz, & Polly, 2023). In Sung (2020)'s study, career preparation behavior is viewed as a resource for job satisfaction. Other research has highlighted the mediating role of career preparation behavior in the relationship between planning happenstance skills, positive psychological capital, and career adaptation (Yun, 2020; Kang, 2021). Moreover, considering the relationships among career decision self-efficacy, career preparation actions, and career adaptation, students with adequate career preparation possess environmental adaptability, enabling them to cope well even in unpredictable professional environments (Savickas, 1997; Lee & Kim, 2016). Additionally, college students with higher confidence in career decisions are more proactive in preparing for career development tasks (Jang, Kwak, & Ahn, 2020) and more active in responding to and adapting to professional environments (Ki & Kyung, 2019). This correlation suggests a mediating effect of career preparation behavior between career decision self-efficacy and career adaptation.

It is important to note that college students may encounter obstacles such as resource limitations, lack of opportunities, or personal belief constraints during their career preparation actions, which cause

varying degrees of difficulty and hindrance to their career adaptation (Porter, Woo, Alonso, & Snyder, 2023; Parola & Marcionetti, 2022). To avoid information disparities with the complex and diverse job market, students' career development planning is continuously updated to meet employment requirements, making it easy for students to feel burnt out and develop a negative mindset in their career-related efforts (Jeon, 2023; Enrique, Pedro, & Joan, 2016). This requires factors that can alleviate the negative impact on career adaptation caused by students feeling insufficiently prepared for their careers due to subjective perceptions.

Previously, in studies on the relationship between career decision self-efficacy and career adaptation, most researchers described factors affecting career adaptation as mediating factors, while studies on career preparation behavior as a mediating factor are still relatively scarce. Therefore, this study starts from the relationship between college students' career decision self-efficacy and career adaptation to explore the mediating effect of career preparation behavior, which has significant benefits for the college student group. On one hand, it hopes to bring enlightening significance to college students' career planning education. On the other hand, it provides a basis for research focused on enhancing college students' career adaptation and high-quality employment. To this end, the research questions to be explored in this study are as follows:

First, what is the impact of career decision self-efficacy on career preparation behavior and career adaptation?

Second, what is the mediating effect of career preparation behavior in the relationship between college students' career decision self-efficacy and career adaptation?

2. Theoretical Background

2.1 Career Adaptability

In the theory of adaptability, emphasis is placed on the relationship between individuals and their environment, which refers to the individual's ability to survive well in a given environment and meet the conditions of the surrounding environment (Morrison, 2002). Typically, an individual entering a specific environment will gradually evolve towards adaptability over time, but if the rate of change in the external environment significantly exceeds the individual's rate of adaptation, it can indicate difficulties in adaptability (Tingyue, Yaoyao, Juan, Hualing, & Cheng, 2024). Career adaptability refers to an individual's attitude and behavior in response to the continuously changing work environment, a critical factor in career development, and can also be defined as the ability to flexibly handle various environmental changes throughout a career (Lee, 2024). Savickas (2005) defines career adaptability as the ability to cope with crises in both predictable and unpredictable situations. Savickas and Porfeli (2012) consider career adaptability a psychological resource inherent to individuals and a self-regulation instinct, primarily aimed at solving complex problems arising from developmental tasks, career transitions, or career traumas.

Savickas and Porfeli (2012) divided the factors of career adaptability into seven elements: autonomy,

career values, career significance, experiential reflection, conscious decision-making, planning, exploration, and establishment. Savickas (2005) broadens the scope of career adaptability to include four factors: concern, control, curiosity, and confidence. Concern involves an individual's focus on their future, setting goals for future development with an active mindset, and beginning corresponding plans and actions, essentially a proactive participation and preparation for career development. Control, also based on autonomy and independence, refers to confident decision-making and taking responsibility for one's choices. Curiosity represents an individual's desire for challenges, exploring future careers, and tackling career-related tasks to collect information about oneself and the environment, helping to evaluate and compare from a realistic perspective to prepare for career success. Confidence can be seen as the belief in solving problems encountered, aiming to overcome obstacles and difficulties to fulfill one's planned path, a capability accompanied by self-efficacy.

College students with a high level of career adaptability are indicative of a positive attitude towards career planning (Wang, Niu, Dai, & Liu, 2023). Liu, Xinyuan, Yiming, and Wenjuan (2023) suggest that students with good adaptability are optimistic about life beliefs, possess good stress-coping abilities, and tend to exhibit diligent behaviors in academics, finding it easier to formulate career-related plans. Wetstone and Rice (2023) note that college students with better career adaptability also have higher levels of career insight and are keen to participate in activities related to career preparation. Conversely, students with difficulties in career adaptability may face employment and career-related issues, initially encountering job search difficulties, interview rejections, and poor job quality. Gu, Gai, and Wang (2023) suggest that difficulties in career adaptability can lead to some college graduates resigning soon after employment, opting to reselect their careers. Agoes, Rose, Istiasih, Rumalutur, and Biondi (2023) state that problems in career adaptability for college graduates can accumulate over time due to unresolved external threats and crises, ultimately leading to dissatisfaction with life. Therefore, students should focus on enhancing their career adaptability skills early on to achieve high-quality employment.

This study's view of career adaptability, based on Savickas (2005), is that an individual's career adaptability should involve an interest in future development and the ability to make independent self-decisions. In the implementation of plans and decisions, even in the face of crises, individuals should adopt a proactive attitude characterized by exploration and curiosity.

2.2 Career Decision-Making Self-Efficacy

Career decision-making self-efficacy expands on the theory of self-efficacy introduced by Bandura (1977). Self-efficacy is the belief that one can successfully complete a task facing them, serving as a crucial predictor of behavioral change. Self-efficacy is primarily derived from past experiences, vicarious experiences of others' achievements, and the emotional valence of these experiences. Hackett and Betz (1981) integrated Bandura's self-efficacy theory into career development theory, emphasizing self-efficacy as an essential factor in the career decision-making process, influencing individuals' related behaviors and ultimate achievements. Edah, Esther, Janie, Irene (2024) define career

decision-making self-efficacy as college students' confidence or belief in their ability to choose a career that suits their interests and their confidence in facing challenges even if their initial career choice proves problematic.

In the study by Taylor and Betz (1983), career decision-making self-efficacy is divided into self-appraisal, information gathering, goal-setting, career planning, and problem-solving. Self-appraisal involves realistically evaluating one's capabilities, values, and needs. Information gathering entails finding information about interesting jobs and exploring job requirements. Goal-setting is the ability to confidently decide on one's academic or career development, and career planning is the belief in one's ability to plan for further education or employment and take practical action. Problem-solving represents the ability to effectively handle difficulties and pressures. Betz, Klein, Taylor (1996) adapted Taylor and Betz's framework, breaking career decision-making self-efficacy into preparation for a career, planning, execution, and confidence. Lent, Brown, Larkin (1986) further suggested that career decision-making self-efficacy should consist of exploratory self-efficacy and decision-making self-efficacy regarding career-required capabilities and trust in making career decisions.

Hackett and Betz (1981) found in their study on the impact of self-efficacy on career choices that women exhibit higher self-efficacy in traditional professions like social work, home management, and administration, while men show higher self-efficacy in professions like accounting, mathematics, engineering, and drafting. This indicates that self-efficacy in career decisions is influenced by social environments and varies, showing distinctiveness. Kim, Kim, Yoon (2019) found that a lack of self-efficacy among young people can lead to incorrect assessments of employment requirements and personal conditions or give up on sustained efforts required for desired careers. Conversely, individuals with high self-efficacy can overcome environmental limitations and perceive employment opportunities even in competitive job markets. Therefore, considering the long-term employment difficulties and changing labor market conditions, focusing on enhancing self-efficacy among the youth is crucial.

Career decision-making self-efficacy is also a major factor influencing career preparation behavior. Park (2018) confirmed a positive significant relationship between career decision efficacy and career preparation actions. Furthermore, with the advent of the Fourth Industrial Revolution and continual changes in the labor market, career adaptability as a self-regulating capability evolves with circumstances (Savickas, Porfeli, 2012). Thus, many studies have been conducted to enhance college students' career adaptability by examining the impact of career decision self-efficacy. Additionally, career decision self-efficacy affects career adaptability. According to Chunna, Yuzhen, and Zhiju (2019) in a study of 145 students, career decision self-efficacy was confirmed to have a static effect on career adaptability, indicating that individuals with high career decision self-efficacy are more proactive in adapting to challenging tasks in their field. This aligns with the findings of Mirjam and Eva (2019), which showed that stronger beliefs in career choices and exploration indicate a higher capability to interact and adapt to the professional environment.

2.3 Career Preparation Behaviors

Career preparation behavior refers to specific, practical actions taken by an individual to make rational decisions about their employment path. Examples include gathering information related to one's field of interest, meeting with experienced individuals in that field, or participating in related activities and conferences (Ra & Kim, 2023). Lee, Jung, Baek, and Lee (2022) define career preparation behavior as an individual's planned exploratory actions to collect job or career-related information. During the implementation of these exploratory plans, individuals use methods, quantity, focus, and environment as sources of information. Brown and Health (1984) believe that individuals with high preparatory behavior value predictability of outcomes, meaning that career preparation behavior is a process of exploratory actions taken to obtain effective assessment results. Marciniak, Marciniak, Johnston, Steiner, and Hirschi (2022) view career preparation behavior as the individual's efforts to prevent unintended negative outcomes.

Ki and Choi (2019) describe college students' career preparation behaviors as a series of conscious actions and strategies taken to smoothly enter their career paths upon approaching or after graduation. These preparatory actions include, but are not limited to, career planning, personal branding, resume and cover letter writing, interview skill training, building professional networks, accumulating internship and work experience, career skill training, and labor market research, all aimed at enhancing the individual’s competitiveness in the job market in anticipation of securing ideal professional opportunities in specific fields or industries. Hahn (2019) emphasizes that college students' career preparation involves acquiring relevant career skills, understanding job market demands, and building professional networks to adapt to changes and challenges in the job market, thereby better integrating into the workplace. Aeeun (2019) defines college students' career preparation behavior from a lifelong learning perspective as a continuous process of integrating sustainable learning consciousness with changing market demands.

Do (2019) divides the elements of career preparation behavior into counseling and information gathering, learning, and employment practice. Park (2018) believes that information gathering, equipping necessary conditions, and practical efforts to achieve set goals together constitute career preparation behavior. Information gathering activities involve collecting information about the current state, prospects, entry methods, promotion paths, and work environments of desired careers, and matching them against one’s adaptability, capabilities, interests, and personality traits to assess suitability and possibilities. Equipping necessary conditions refers to the qualifications required during the entry process into the target profession. Practical efforts to achieve set goals refer to the actual time and effort spent by individuals to prevent negative outcomes. These studies show that the components of career preparation behavior vary among researchers, but can generally be summarized as individuals gathering information about careers and committing energy to goals and plans after understanding career conditions.

The direct goal of career preparation behavior is to form good career adaptability, an important factor in

ensuring high-quality employment (Ra & Kim, 2019). Typically, college students with higher levels of career preparation behavior also indicate good career adaptability. According to Lee (2019), when college students actively plan for the development of their target careers rather than just planning to meet employment thresholds, it means that even when faced with uncontrollable factors or career pressures after successful employment, they can effectively cope and strive to find ways to adapt to the professional environment that meet their needs and development. In Youn (2020)'s research, career preparation behavior shows a positive correlation with career adaptability.

3. Research Methods

3.1 Research Model

This study establishes a mediating model of career preparation behavior as the research framework, in which career decision self-efficacy influences career adaptability through career preparation behavior, as shown in Figure 1. Initially, career decision self-efficacy impacts career adaptability, based on the theoretical foundations of Chunna, Yuzhen, and Zhiju (2019), and Mirjam and Eva (2019). Subsequently, according to Park (2018) and Savickas and Porfeli (2012), career decision self-efficacy also affects career preparation behavior, and finally, career preparation behavior impacts career adaptability (Lee, 2019; Youn, 2020).

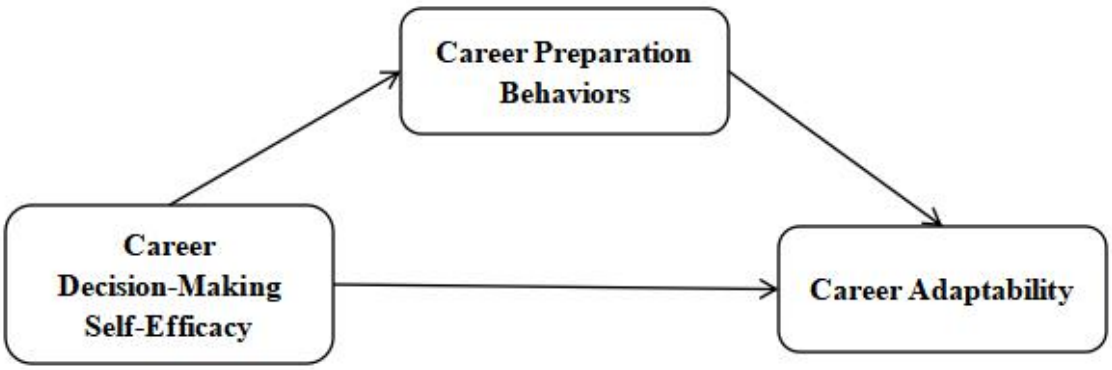

Figure 1. Research Model Diagram

3.2 Research Subjects

The study collected data using the Questionnaire Star APP, clarifying the research objectives and subjects before participants answered the survey. The analysis involved 522 questionnaires processed with SPSS 25.0 for correlation analysis, regression analysis, and testing for mediation effects. Demographic details are shown in Table 1. There were 175 males (33.5%) and 347 females (66.5%). By grade level, there were 48 first-year students (9.2%), 100 second-years (19.2%), 156 third-years (29.9%), and 218 fourth-years (41.8%). Among disciplines, 321 students (61.5%) were from humanities and social sciences, and 201 (38.5%) from science and engineering.

Table 1. Demographic Characteristics of Study Subjects

Component		Number	Percentage
Gender	Male	175	33.5%
	Female	347	66.5%
Grade	1	48	9.2%
	2	100	19.2%
	3	156	29.9%
	4	218	41.8%
Academic directions	Humanities and Social Sciences	321	61.5%
	Science and Engineering	201	38.5%
Total		522	100%

3.3 Research Tools

The tools used in this study are based on a Likert 5-point scale, from 1 (“strongly disagree”) to 5 (“strongly agree”), with higher scores indicating better levels of the corresponding variables. Details of the constructs and their reliability are shown in Table 2. Career decision self-efficacy was measured using a scale developed by Taylor and Betz (1983) and revised by Lee (2017), consisting of self-appraisal, career information, goal setting, future planning, and problem-solving, with 25 items in total. For example, self-appraisal includes items such as "I can accurately assess my abilities," "I know what my ideal job is," and "I can prioritize values related to career choices," with a Cronbach's alpha of 0.819. According to Hair, Black, Babin, and Anderson (2009), a Cronbach's alpha above 0.7 indicates good reliability. Career information includes items like "I can find information about careers of interest in the library," "I can predict my future employment tendencies in careers," and "I can determine the average annual salary for the careers I am considering," with a Cronbach's alpha of 0.854. Goal setting includes items like "I can choose the necessary major from a list of options," "I can select a career from my list of potential careers," and "I can decide on the lifestyle I prefer," with a Cronbach's alpha of 0.793. Future planning includes items such as "I can make a five-year plan," "I can complete the courses required for my chosen major," and "I can write a good resume," with a Cronbach's alpha of 0.858. Problem-solving includes items such as "I can decide how to cope with difficulties on my own," "Even under difficult circumstances, I can continue to do things for my professional or career goals," and "If my initial choice of major is unsatisfactory, I can change it," with a Cronbach's alpha of 0.821.

Career preparation behavior was measured using tools from Park (2018) and consists of 18 items divided into three factors: information gathering behavior, tool preparation behavior, and goal achievement behavior. Information gathering behavior includes items like "Recently, I have discussed my personality and future employment with friends," "Recently, I have discussed my personality and future employment with my parents," and "Recently, I have specifically understood what qualifications

are required in the career fields I am interested in," with a Cronbach's alpha of 0.829. Tool preparation behavior includes items like "Recently, I have bought or read some books or manuals related to the careers I am interested in," "Recently, I have bought or read guides or educational training program courses related to the careers I am interested in," and "Recently, I have accurately checked my adaptability, interests, and personality," with a Cronbach's alpha of 0.829. Goal achievement behavior includes items like "Recently, I have personally visited companies or institutions related to the careers I am interested in and have made similar visit plans," "Recently, I have watched TV programs related to the careers I am interested in, or visited exhibitions, introduction sessions, etc.," and "Recently, I have spoken with some experts in the careers I am interested in," with a Cronbach's alpha of 0.838.

Career adaptability was measured using a scale developed by Savickas and Porfeli (2012) and revised by Tak (2012). The scale consists of four sub-factors—career interest, self-behavioral control, future development curiosity, and confidence—with 24 items in total. For instance, career interest includes items like "I often imagine what my future will look like," "I know that the choices I make now are shaping my future," and "I am preparing for the future I desire," with a Cronbach's alpha of 0.852. Self-behavioral control includes items like "I often maintain a positive attitude," "I can make many decisions on my own," and "I am responsible for my actions," with a Cronbach's alpha of 0.829. Future development curiosity includes items like "I often explore my surroundings," "I frequently look for opportunities to grow," and "Before making a choice, I consider several alternatives," with a Cronbach's alpha of 0.911. Confidence includes items like "I believe I can efficiently complete the tasks given to me," "I can handle tasks given to me by others well," and "I believe I can learn the skills and knowledge needed for my major," with a Cronbach's alpha of 0.918.

Table 2. Composition and Reliability of Research Tools

Factor		Number of Items		Cronbach α
Career Decision Self-Efficacy	Self-Appraisal	5	25	0.819
	Career Information	5		0.854
	Goal Setting	5		0.793
	Future Planning	5		0.858
	Problem Solving	5		0.821
Career Preparation Behavior	Information Gathering Behavior	6	18	0.829
	Tool Preparation Behavior	5		0.829
	Goal AchievemenBehavior	7		0.838
Career Adaptability	Career Interest	6	24	0.852
	Self-Behavioral Control	6		0.829
	Future Development Curiosity	6		0.911
	Confidence	6		0.918

4. Research Results

4.1 Correlation between Career Decision Self-Efficacy, Career Preparation Behavior, and Career Adaptability

The relationships between the main variables collected in the survey are organized in Table 3. There are positive correlations between career decision self-efficacy and both career preparation behavior (r=0.695) and career adaptability (r=0.555). Career preparation behavior also shows a positive correlation with career adaptability (r=0.668). Positive correlations are also observed among the sub-factors of these variables.

Table 3. Correlation Results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	-	.808**	.855**	.874**	.818**	.787**	.695**	.683**	.580**	.464**	.555**	.465**	.525**	.455**	.468**
2	.808**	-	.504**	.825**	.541**	.476**	.510**	.473**	.441**	.355**	.387**	.321**	.361**	.327**	.320**
3	.855**	.504**	-	.708**	.654**	.687**	.572**	.595**	.448**	.372**	.455**	.376**	.441**	.351**	.393**
4	.874**	.825**	.708**	-	.568**	.531**	.561**	.548**	.472**	.375**	.422**	.354**	.407**	.340**	.353**
5	.818**	.541**	.654**	.568**	-	.590**	.599**	.578**	.475**	.431**	.537**	.435**	.510**	.424**	.475**
6	.787**	.476**	.687**	.531**	.590**	-	.639**	.636**	.569**	.385**	.492**	.440**	.446**	.428**	.390**
7	.695**	.510**	.572**	.561**	.599**	.639**	-	.890**	.842**	.755**	.668**	.562**	.630**	.552**	.551**
8	.683**	.473**	.595**	.548**	.578**	.636**	.890**	-	.741**	.467**	.613**	.496**	.594**	.514**	.510**
9	.580**	.441**	.448**	.472**	.475**	.569**	.842**	.741**	-	.388**	.516**	.417**	.496**	.428**	.432**
10	.464**	.355**	.372**	.375**	.431**	.385**	.755**	.467**	.388**	-	.526**	.480**	.474**	.446**	.424**
11	.555**	.387**	.455**	.422**	.537**	.492**	.668**	.613**	.516**	.526**	-	.821**	.903**	.857**	.859**
12	.465**	.321**	.376**	.354**	.435**	.440**	.562**	.496**	.417**	.480**	.821**	-	.557**	.894**	.458**
13	.525**	.361**	.441**	.407**	.510**	.446**	.630**	.594**	.496**	.474**	.903**	.557**	-	.607**	.907**
14	.455**	.327**	.351**	.340**	.424**	.428**	.552**	.514**	.428**	.446**	.857**	.894**	.607**	-	.459**
15	.468**	.320**	.393**	.353**	.475**	.390**	.551**	.510**	.432**	.424**	.859**	.458**	.907**	.459**	-

3	5**	6**	1**	7**	0**	6**	0**	4**	9**	0**	3**	6**		1**	2**
1	.45	.32	.35	.34	.42	.42	.55	.51	.42	.44	.85	.89	.60		.51
4	4**	7**	7**	0**	4**	8**	9**	2**	8**	6**	7**	9**	1**	-	3**
1	.46	.32	.39	.35	.47	.39	.55	.51	.43	.42	.85	.45	.90	.51	
5	8**	0**	3**	3**	5**	0**	1**	0**	2**	4**	9**	8**	2**	3**	-

*p≤.05 · **p≤.01 · ***p≤.001

Note 1. Career Decision Self-Efficacy; 2: Self-Appraisal; 3: Career Information; 4: Goal Setting; 5: Future Planning; 6: Problem Solving; 7: Career Preparation Behavior; 8: Information Gathering Behavior; 9: Tool Preparation Behavior; 10: Goal Achievement Behavior; 11: Career Adaptability; 12: Career Interest; 13: Self-Behavioral Control; 14: Future Development Curiosity; 15: Confidence.

4.2 Impact of Career Decision Self-Efficacy on Career Preparation Behavior

To test the impact of career decision self-efficacy on career preparation behavior, a multiple regression analysis was conducted. As shown in Table 4, career decision self-efficacy, as an independent variable, has a significant positive influence (β=0.695, t=22.044, p<0.001) on career preparation behavior, explaining approximately 48.3% of the variance (R^2=0.483). Sub-factors such as self-appraisal, career information, goal setting, future planning, and problem solving were also tested as independent variables against career preparation behavior as the dependent variable, with the overall model showing significant results (F=109.034, p<0.001). Analyses indicate that while self-appraisal and career information did not show significant impacts, goal setting (β=0.185, t=2.714, p<0.01), future planning (β=0.251, t=5.717, p<0.001), and problem solving (β=0.372, t=8.398, p<0.001) all had significant positive effects, explaining 51.4% of the variance.

Influence on information gathering behavior showed that career decision self-efficacy had a significant positive effect (β=0.683, t=21.307, p<0.001), explaining 46.6% of the variance. For tool preparation behavior, career decision self-efficacy also showed a significant positive influence (β=0.580, t=16.224, p<0.001), explaining 33.6% of the variance. Finally, for goal achievement behavior, career decision self-efficacy had a significant positive effect (β=0.464, t=11.947, p<0.001), explaining 21.5% of the variance.

Table 3. Impact of Career Decision Self-Efficacy on Career Preparation Behavior

Dependent Variable	Independent Variable	B	β	t	p	R2	F（p）	VIF
Career Preparation Behavior	Career Decision Self-Efficacy	.604	.695	22.044	.000	0.483	485.921 （0.000）	1.000
	Self-Appraisal	.032	.045	.773	.440	0.514	109.034 （0.000）	3.617
	Career Information	-.002	-.002	-.038	.970			3.366

	Goal Setting	.138	.185	2.714	.007			4.955
	Future Planning	.165	.251	5.717	.000			2.044
	Problem Solving	.283	.372	8.398	.000			2.083
	Career Decision Self-Efficacy	.756	.683	21.307	.000	0.466	453.981 (0.000)	1.000
Information Gathering Behavior	Self-Appraisal	-.004	-.004	-.069	.945	0.498	102.524 (0.000)	3.617
	Career Information	.078	.083	1.458	.145			3.366
	Goal Setting	.171	.181	2.614	.009			4.955
	Future Planning	.177	.211	4.724	.000			2.044
	Problem Solving	.349	.360	8.009	.000			2.083
	Career DecisioSelf-Efficacy	.665	.580	16.224	.000	0.336	263.215 (0.000)	1.000
Tool Preparation Behavior	Self-Appraisal	.044	.046	.702	.483	0.381	63.542 (0.000)	3.617
	Career Information	-.106	-.109	-1.722	.086			3.366
	Goal Setting	.191	.195	2.528	.012			4.955
	Future Planning	.141	.162	3.268	.001			2.044
	Problem Solving	.425	.423	8.466	.000			2.083
	Career Decision Self-Efficacy	.431	.464	11.947	.000	0.215	142.726 (0.000)	1.000
Goal Achievement Behavior	Self-Appraisal	.055	.072	.978	.328	0.227	30.233 (0.000)	3.617
	Career Information	.005	.006	.086	.931			3.366
	Goal Setting	.071	.089	1.034	.302			4.955
	Future Planning	.173	.246	4.449	.000			2.044
	Problem Solving	.125	-.154	2.756	.006			2.083

4.3 Impact of Career Decision Self-Efficacy on Career Adaptability

A multiple regression analysis was conducted to assess the impact of career decision self-efficacy on career adaptability. The results, as shown in Table 4, indicated a significant overall model ($F=231.514$, $p<0.001$) with a beta (β) of 0.555 and a t-value of 15.216 ($p<0.001$), suggesting a significant positive impact. The model explained approximately 30.8% of the variance. Sub-factors such as self-appraisal, career information, goal setting, future planning, and problem solving also significantly influenced career adaptability ($F=53.692$, $p<0.001$), although self-appraisal, career information, and goal setting showed no significant effects. Future planning ($\beta=0.336$, $t=6.589$, $p<0.001$) and problem solving ($\beta=0.238$, $t=4.625$, $p<0.001$) both had significant positive impacts, explaining 34.2% of the variance, indicating that future planning and problem solving significantly enhance career adaptability.

The impact on career interest showed a significant overall model ($F=148.803$, $p<0.001$) with a beta of

0.465 and a t-value of 11.992 ($p<0.001$), and explained about 21.7% of the variance. Sub-factors analysis showed that future planning ($\beta=0.248$, $t=4.532$, $p<0.001$) and problem solving ($\beta=0.272$, $t=4.934$, $p<0.001$) significantly positively impacted career interest, explaining 24.6% of the variance.

Regarding self-behavioral control, the regression was significant ($F=198.095$, $p<0.001$) with a beta of 0.525 and a t-value of 14.075 ($p<0.001$), explaining 27.6% of the variance. Future planning ($\beta=0.323$, $t=6.144$, $p<0.001$) and problem solving ($\beta=0.174$, $t=3.284$, $p<0.01$) significantly positively influenced self-behavioral control, explaining 30.1% of the variance.

The influence on curiosity about future development was also significant ($F=134.701$, $p<0.001$) with a beta of 0.454 and a t-value of 11.606 ($p<0.001$), explaining 20.6% of the variance. Future planning ($\beta=0.239$, $t=4.336$, $p<0.001$) and problem solving ($\beta=0.265$, $t=4.768$, $p<0.001$) showed significant positive effects, explaining 23.3% of the variance.

Lastly, the impact on confidence was significant ($F=145.939$, $p<0.001$) with a beta of 0.468 and a t-value of 12.081 ($p<0.001$), explaining about 21.9% of the variance. Future planning ($\beta=0.335$, $t=6.133$, $p<0.001$) and problem solving ($\beta=0.131$, $t=2.388$, $p<0.05$) significantly positively impacted confidence, explaining 24.8% of the variance.

Table 4. Impact of Career Decision Self-Efficacy on Career Adaptability

Dependent Variable	Independent Variable	B	β	t	p	R^2	F (p)	VIF
Career Adaptability	Career Decision Self-Efficacy	.591	.555	15.216	.000	0.308	231.514 (0.000)	1.000
	Self-Appraisal	.015	.017	.252	.801	0.342	53.692 (0.000)	3.617
	Career Information	-.002	-.002	-.027	.978			3.366
	Goal Setting	.083	.091	1.149	.251			4.955
	Future Planning	.272	.336	6.589	.000			2.044
	Problem Solving	.222	.238	4.625	.000			2.083
Career Interest	Career Decision Self-Efficacy	.496	.465	11.992	.000	0.217	143.803 (0.000)	1.000
	Self-Appraisal	-.009	-.011	-.145	.885	0.246	33.660 (0.000)	3.617
	Career Information	-.041	-.046	-.656	.512			3.366
	Goal Setting	.100	.110	1.294	.196			4.955
	Future Planning	.200	.248	4.532	.000			2.044
	Problem Solving	.254	.272	4.934	.000			2.083
Self-Behavioral	Career Decision	.632	.525	14.075	.000	0.276	198.096	1.000

Control	Self-Efficacy						(0.000)	
	Self-Appraisal	.012	.012	.167	.868			3.617
	Career Information	.037	.036	.537	.591			3.366
	Goal Setting	.098	.095	1.159	.247	0.301	44.533 (0.000)	4.955
	Future Planning	.295	.323	6.144	.000			2.044
	Problem Solving	.184	.174	3.284	.001			2.083
Curiosity about Future Development	Career Decision Self-Efficacy	.553	.454	11.606	.000	0.206	134.701 (0.000)	1.000
	Self-Appraisal	.049	.049	.666	.505			3.617
	Career Information	-.046	-.045	-.633	.527			3.366
	Goal Setting	.057	.055	.641	.522	0.233	31.426 (0.000)	4.955
	Future Planning	.221	.239	4.336	.000			2.044
	Problem Solving	.283	.265	4.768	.000			2.083
Confidence	Career Decision Self-Efficacy	.683	.468	12.081	.000	0.219	145.939 (0.000)	1.000
	Self-Appraisal	.009	.007	.101	.920			3.617
	Career Information	.044	.036	.513	.608			3.366
	Goal Setting	.077	.062	.729	.466	0.248	34.125 (0.000)	4.955
	Future Planning	.371	.335	6.133	.000			2.044
	Problem Solving	.168	.132	2.388	.017			2.083

4.4 Impact of Career Preparation Behaviors on Career Adaptability

A multiple regression analysis was conducted to examine the impact of career preparation behaviors on career adaptability, as shown in Table 5. The overall regression was significant ($F=417.958$, $p<0.001$) with a beta (β) of 0.668 and a t-value of 20.444 ($p<0.001$), indicating a significant positive impact and explaining about 44.6% of the variance. Sub-factors analysis showed that information gathering behaviors ($\beta=0.392$, $t=7.779$, $p<0.001$) and tool preparation behaviors ($\beta=0.109$, $t=2.243$, $p<0.05$) had significant positive impacts, explaining 45.4% of the variance, demonstrating that these behaviors significantly enhance career adaptability.

The impact on self-control behaviors was also significant ($F=342.631$, $p<0.001$) with a beta of 0.630 and a t-value of 18.510 ($p<0.001$), explaining 39.7% of the variance. Information gathering behaviors ($\beta=0.402$, $t=7.628$, $p<0.001$) and goal achievement behaviors ($\beta=0.241$, $t=6.286$, $p<0.001$) were significant positive influencers, explaining 40.6% of the variance.

Regarding curiosity about future development, the regression was significant (F=236.880, p<0.001) with a beta of 0.559 and a t-value of 15.391 (p<0.001), explaining 31.3% of the variance. Information gathering behaviors (β=0.329, t=5.840, p<0.001) and goal achievement behaviors (β=0.260, t=6.322, p<0.001) had significant positive impacts, explaining 32.0% of the variance.

Lastly, the impact on confidence was significant (F=226.381, p<0.001) with a beta of 0.551 and a t-value of 15.046 (p<0.001), explaining 30.3% of the variance. Information gathering behaviors (β=0.328, t=5.773, p<0.001) significantly positively influenced confidence, explaining 30.8% of the variance.

Table 5. Impact of Career Preparation Behaviors on Career Adaptability

Dependent Variable	Independent Variable	B	β	t	p	R2	F（p）	VIF
Career Adaptability	Career Preparation Behaviors	.818	.668	20.444	.000	0.446	417.958 （0.000）	1.000
	Information Gathering Behaviors	.377	.392	7.779	.000	0.454	143.857 （0.000）	2.417
	Tool Preparation Behaviors	.101	.109	2.243	.025			2.225
	Goal Achievement Behaviors	.345	.300	8.167	.000			1.285
Career Interest	Career Preparation Behaviors	.689	.562	15.508	.000	0.327	240.490 （0.000）	1.000
	Information Gathering Behaviors	.279	.290	5.171	.000		84.068 （0.000）	2.417
	Tool Preparation Behaviors	.075	.081	1.505	.133			2.225
	Goal Achievement Behaviors	.359	.313	7.665	.000			1.285
Self-Behavioral Control	Career Preparation Behaviors	.872	.630	18.510	.000	0.406	342.631 （0.000）	1.000
	Information Gathering Behaviors	.436	.402	7.628	.000		117.877 （0.000）	2.417
	Tool Preparation Behaviors	.113	.108	2.128	.034			2.225
	Goal Achievement Behaviors	.313	.241	6.286	.000			1.285

Curiosity about Future Development	Career Preparation Behaviors	.785	.559	15.391	.000	0.313	236.880 (0.000)	1.000
	Information Gathering Behaviors	.362	.329	5.840	.000			2.417
	Tool Preparation Behaviors	.089	.084	1.553	.121	0.320	81.296 (0.000)	2.225
	Goal Achievement Behaviors	.341	.260	6.322	.000			1.285
Confidence	Career Preparation Behaviors	.925	.551	15.046	.000	0.303	226.381 (0.000)	1.000
	Information Gathering Behaviors	.432	.328	5.773	.000			2.417
	Tool Preparation Behaviors	.126	.099	1.818	.070	0.308	77.012 (0.000)	2.225
	Goal Achievement Behaviors	.366	.232	5.611	.000			1.285

4.5 Mediating Effect

To verify the mediating effect of career preparation behaviors between career decision self-efficacy and career adaptability, a stepwise regression analysis was performed as shown in Table 6. In the second stage, career decision self-efficacy was predicted with a beta of 0.555, explaining 30.8% of the variance. In the third stage, when career decision self-efficacy and career preparation behaviors were both predictors of career adaptability, the beta for career decision self-efficacy was 0.176, a decrease from the second stage, but both were significant predictors of career adaptability, confirming a partial mediating effect of career preparation behaviors.

Table 6. Mediation Analysis

Stage	Dependent Variable	Independent Variable	B	S.E	β	R^2	F	p
1	Career Preparation Behaviors	Career Decision Self-Efficacy	.604	.027	.695	0.483	485.921	0.000
2	Career Adaptability	Career Decision Self-Efficacy	.591	.039	.555	0.308	231.514	0.000
3	Career Adaptability	Career Decision Self-Efficacy	.188	.048	.176	0.462	222.530	0.000

	Career readiness Behavior	.668	.055	.545
***p < 0.001 · **p < 0.01 · *p < 0.05				

Further calculations of the indirect effects of career preparation behaviors were significant, β=0.302 (β=0.555*β=0.545), as shown in Table 7, combining the direct effect (β=0.176) and the indirect effect (β=0.302) to yield a total effect size of 0.478. Based on the proportion of effects calculated, the mediating pathway of career preparation behaviors accounted for 63.2% of the total impact of career decision self-efficacy on career adaptability.

Table 7. Size and Proportion of Mediating Effects

Effect Type	Size	Proportion
Total Effect	0.478	100%
Mediating Effect	0.302	63.2%
Direct Effect	0.176	36.8%

5. Conclusion

The purpose of this study was to analyze the impact of career decision self-efficacy and career preparation behaviors on career adaptability, as well as to examine the mediating effect of career preparation behaviors, with a sample of 522 university students undergoing correlation and regression analyses. The variables of career decision self-efficacy, career preparation behaviors, and career adaptability showed significant positive correlations, further validated through regression analyses to address the research question: "What is the impact of career decision self-efficacy on career preparation behaviors and career adaptability?" Career decision self-efficacy significantly positively influenced career preparation behaviors, with problem-solving, future planning, and goal setting being the most influential sub-factors. Self-evaluation and career information did not significantly impact career decision self-efficacy, which is partially consistent with Park (2018). This indicates that students possess effective problem-solving, clear future planning, and goal-setting abilities, which they utilize in their career preparation behaviors. The influence of self-evaluation and obtaining career information may be diminished due to potential issues of overconfidence or information overload.

In terms of the sub-factors of career decision self-efficacy, problem-solving had a prominent effect on the sub-factors of career preparation behaviors like information gathering and tool preparation, while future planning contributed significantly to the goal achievement behavior. This suggests that problem-solving capabilities effectively aid students in making informed decisions, especially in analyzing career-related information and acquiring skills and resources. Students achieve their goals through clear future planning, creating a steady process of career preparation. These findings align with

Savickas's (2005) theory that career planning requires individuals to flexibly manage decisions and optimize their career paths through concrete action plans.

Career decision self-efficacy also significantly affects career adaptability, with future planning and problem-solving being the most influential sub-factors. This reiterates the importance of proactive career planning and the ability to handle challenges, where a targeted career path can robustly support students' personal development, and problem-solving directly influences an individual's adaptability to career changes and challenges. Self-evaluation, career information, and goal setting did not significantly influence career adaptability, suggesting that while students may have a basic understanding of their abilities, goals, and career information, these factors alone may not sufficiently drive the enhancement of career adaptability.

Career preparation behaviors have a significant positive impact on career adaptability, with information gathering, goal achievement, and tool preparation being the influential sub-factors. This supports the notion that understanding, exploring, and predicting career trends can provide a solid informational foundation for career adaptability. Achieving specific goals actively supports career accomplishments, while tool preparation behaviors, though less influential, still provide necessary support for personal behavioral control and the practical basis for performing career preparation tasks.

In the mediation tests, career preparation behaviors demonstrated a partial mediating effect, meaning that career decision self-efficacy enhances career adaptability partly through career preparation behaviors. This suggests that problem-solving and future planning influence information gathering and goal achievement behaviors, thereby enhancing students' career interest, self-behavioral control, curiosity about future developments, and confidence.

In conclusion, problem-solving and future planning are identified as critical factors in career decision self-efficacy essential for enhancing career adaptability and achieving high-quality employment. Students are advised to train and improve their problem-solving abilities through internships, social practice, and volunteering, and to set concrete and long-term career goals early on. Educational institutions should offer more practice-oriented courses and activities to help students apply their knowledge in real-world settings, solve complex problems, and provide professional career counseling and workshops to help students clearly define their career goals and understand the challenges and advantages of various career paths. While career information did not show significant effects on career decision self-efficacy and adaptability, understanding and utilizing career information correctly remains crucial for ensuring adaptability to careers. Future research could consider a broader sample size or use interviews and case studies to delve deeper into how career decision self-efficacy affects career adaptability, thus providing a more comprehensive understanding of the complex factors influencing career decisions.

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