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Article

The relationship between college students' indecisiveness and career decision-making: The mediating role of anxiety

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Abstract: This study explored the relationships between college students' indecisiveness, anxiety, and career decision-making ability. Using the convenience sampling method, 1072 college students at a college in Hunan Province, China completed a questionnaire online that included the Indecisiveness Scale, Career Exploration and Decision Self-Efficacy Scale, and Generalized Anxiety Scale-7. Participants reported their gender and place of origin (rural or city). They indicated whether they were an only child, were left behind, and liked the major they were studying. The *t*-test was used to identify differences in indecisiveness, career decision-making ability, and anxiety according to demographic characteristics. Correlations were calculated between the main variables of interest. Regression analysis was conducted to test the mediation model. Participants who liked their major were significantly more indecisive than those who did not like their major. Career decision-making ability was significantly higher among men than women, participants from urban areas than those from rural areas, participants who were an only child than those with siblings, and among non-left-behind participants than those who were left behind. Anxiety was significantly lower in participants who liked their major than those who did not like their major. In addition, anxiety partially mediated the relationship between indecisiveness and career decision-making ability. College students' indecisiveness and career decision-making ability are affected by sociocultural background, gender, family background, and career interest. Anxiety partially mediates the relationship between indecisiveness and career decision-making ability. Implications of the findings for counseling college students are discussed.

Keywords: indecision; career development; career counseling; China

1. Introduction

With the development of social economy and the progress of science and technology, people's career choices are becoming increasingly more diversified. Consequently, the importance of career decision-making has become prominent. Career decision-making is not only related to personal income and quality of life but is also closely related to mental health and the realization of life goals. Therefore, the research on career decision-making has gradually become an important topic in the fields of psychology, sociology, management, and other disciplines (Savickas et al., 1999) With the increase in the diversity of occupations, many young people may feel challenged and overwhelmed by this important decision (Gati and Levin, 2014).

Nilsson et al. (2007) analyzed 326 international career psychology articles published in the four major career magazines in the United States over the past 34 years. Through a detailed content analysis of these articles, they listed the 29 most popular topics. Career decision-making and hesitation ranked ninth in this list. This

finding reflects the importance of career decision-making in the field of career psychology, indicating that it has become a major topic of concern.

The concept of career decision-making originated from the career decision-making theory of British economist Kane (Gati et al., 2000). The concept refers to when choosing a goal or occupation, a person will choose a method to obtain the highest reward and minimize the loss (Gati et al., 1996). Keynesian economic theory posits that career decision-making is a unique choice made by individuals based on their own experience after facing different environmental stimuli, and cognitive and emotional reactions (Chen and Zhou, 2018). When applying the concept of career decision-making, individuals usually need to conduct self-analysis, clarify their career expectations and goals, assess the possibilities and risks of different career plans, and comprehensively consider their actual situation and environmental factors to finally make decisions (Brown and Rector, 2008). Therefore, career decision-making is a process that requires individuals to comprehensively consider their own situation and environmental factors.

Career decision-making refers to the activities involved in the process of career development in making career choices (Germeijs et al., 2006). The study of career decision-making theory has primarily involved three areas: the study of the decision-making process, the study of the decision-making model, and the study of the factors affecting decision-making. This study focused on the psychological factors that affect decision-making (Germeijs and Boeck, 2003).

Indecisiveness is a theme discussed in most types of career decision-making (Kuzgun and Bacanli, 2006). Indecisiveness refers to the mental state of being unable to make a decision decisively when faced with choices or dissatisfaction with the decisions made. This situation often leads to confusion and anxiety in the decision-making process. Indecisiveness can be divided into two types. In one type of indecisiveness, the person is eager to get rid of the dilemma of choice without a comprehensive review of the options, and then tries to change the situation because they feel uncomfortable with the decision they made. A second type is when during the decision-making process, it is impossible to analyze all options in depth to make a decision (Kuzgun and Bacanli, 2006; Demirsöz et al., 2021) . In the process of career decision-making, indecisiveness is generally a problem that occurs before the decision-making process (Gati and Levin, 2014) and has a negative impact on the decision-making (Brown and Rector, 2008). Indecisiveness is usually accompanied by high anxiety, lack of self-confidence, and dependence on others to obtain self-awareness (Gaffner and Hazler, 2002), which may be a key reason for Indecisiveness.

When people are in a state of anxiety, they may feel uneasy about the decision that needs to be made (Gati et al., 2000). Such uneasiness may cause them to be hesitant and have difficulty making a decision, thus showing indecisive behavior. Anxiety may also lead to excessive thinking and doubt about one’s choice, further increasing the difficulty of decision-making (Jia et al., 2022). High anxiety may lead to limited cognitive ability and excessive sensitivity to threats. In this state, people tend to avoid uncertainty and fall into the dilemma of indecision (Chapman, 2006). In the career field, general trait anxiety was found to be negatively correlated with commitment to career choice, but positively correlated with career indecision (Germeijs et al., 2006). In addition, a study found that career choice anxiety regulated

the relationship between indecision and exploratory behavior, which further confirmed the negative effect of anxiety on career decision-making (Fuqua et al., 1988). In short, anxiety may lead to indecisiveness; when they are anxious, people may feel uneasy about career choices, which leads to overthinking and hesitation.

Fishback and Kanfer (1990) showed that indecision was associated with poor career decisions. Indecisive people often have difficulty making decisions, which may cause them to miss opportunities or choose career paths that are not suitable for them. Klinger (2014) believed that indecisive people tend to pay too much attention to details and irrelevant information when making decisions, rather than focusing on the most important factors. This may cause them to be unable to accurately evaluate the pros and cons of different options. Feldman et al. (2007) found that psychological factors such as anxiety, depression, and self-doubt may also lead to indecision. These psychological factors may interfere with the decision-making process and reduce the quality of decision-making.

Carver and Scheier (1998) showed that there is a positive correlation between indecision and anxiety. Indecisive people are more likely to feel anxious and uneasy when facing career decisions because they may have difficulty bearing the consequences of the decisions they make. Career decision-making is an important life event, which has a certain relationship with anxiety. Feldman and Bolino (2002) showed that in the process of career decision-making, people may feel anxious because of uncertainty and worry about the future.

In summary, the factors of indecisiveness, anxiety, and career decision-making interact; stated alternatively, indecisiveness and anxiety can predict individual career decision-making ability. At present, however, existing research on the differences in demographic variables among these three factors is not comprehensive, and there is little research on the relationship between these three factors—especially among college students. Therefore, this study focused on the relationships between the three factors among college students, to provide support for a model of career guidance for college students.

1.1. Research hypotheses

Based on the review of the literature, the study examined the following hypotheses.

(1) Gender, place of origin, being an only child, having been left behind, and liking one's major course of study in college will be significantly associated with indecisiveness, career decision-making ability, and anxiety.

(2) Indecision is negatively correlated with career decision-making ability.

(3) Anxiety will mediate the relationship between indecisiveness and career decision-making ability.

2. Materials and methods

2.1. Participants

In January 2024, a questionnaire survey was conducted among college students from a college in Hunan Province, China, using convenience sampling. The data were

collected online, using the Questionnaire Star website. A total of 1072 valid responses were collected. Among them, 346 (32.28%) were freshmen, 445 (41.51%) were sophomores, and 281 (26.21%) were junior students; moreover, 221 (20.62%) were men and 851 (79.38%) were women. The participants included 860 (80.22%) students from rural areas and 212 (19.78%) from urban areas, 916 (85.45%) who had siblings and 156 (14.55%) who were the only child, and 245 (22.85%) who were left behind and 827 (77.15%) who were not. The term "left behind" means that these were students who stayed in their place of birth with family, while their parents worked in other places far away for more than one year. Most participants (n = 875, 81.62%) reported that they liked their current major.

2.2. Measures

2.2.1. Indecisiveness scale

Germeijs and De Boeck (2002) developed the Indecisiveness Scale to assess difficulty in making all kinds of decisions in specific situations. The scale consists of 22 items that refer to 11 areas of decision-making that are positive and negatively worded. For example, a positively worded item is "I make decisions quickly," whereas the negatively worded item is "I delay deciding." Items are responded to using a 5-point scale. The higher the total score, the higher the degree of indecisiveness. Germeijs and Verschueren (2011) reported an alpha coefficient of 0.92. In this study, Cronbach's α was 0.71. This indicates that the questionnaire had good reliability and consistency.

2.2.2. Career exploration and decision self-efficacy scale

The Career Exploration and Decision Self-Efficacy Scale (Lent et al., 2016) was used to assess career decision self-efficacy or beliefs about being able to manage the career development process. The scale comprises 12 items and two factors: decisional self-efficacy and coping efficacy. This scale uses a 10-point scoring system (0–9). The higher the score, the more confident one is in career decision-making. Lent et al. (2016) reported Cronbach's α coefficients of 0.79 and 0.73. Cronbach's α in this study was 0.98. This indicates that the questionnaire had good reliability and consistency.

2.2.3. Generalized anxiety scale

The Generalized Anxiety Scale-7 (Spitzer et al., 2006) was used to assess the frequency and severity of anxiety symptoms. The respondent is asked how often they have experienced seven symptoms of anxiety over the past two weeks. The items are responded to using a 4-point Likert scale, where 0 = not at all and 3 = nearly every day. The total score range is 0–21. The criteria for determining the level of anxiety are as follows: 0–5 points indicate no anxiety, 6–9 points indicates mild anxiety, 10–14 points indicates moderate anxiety, and 15 points and above indicate severe anxiety. A Cronbach's α of 0.89 has been reported (Spitzer et al., 2006). Cronbach's α in this study was 0.92. Indicating high reliability and consistency.

2.3. Statistical methods

Exploratory factor analysis was conducted to evaluate common method bias. The t-test was used to identify differences in indecisiveness, career decision-making ability,

and anxiety according to demographic characteristics. Correlations were calculated between the main variables of interest. Regression analysis was conducted to test a mediation model. The data was analyzed using the process plug-in designed by SPSS version 26. The significance level was set at 0.05.

3. Results

3.1. Evaluation of common method bias

Exploratory factor analysis was conducted using all items from the scales of indecisiveness, career decision-making self-efficacy, and anxiety using Harman's one-factor test for common method bias. The variance explained by the first factor was 41.361%, which is lower than the standard of 50% (Wen and Ye, 2014). There were four factors extracted with eigenvalues greater than 1, indicating there was no common method bias.

3.2. Indecisiveness and demographic characteristics

Table 1 shows the results of the t-test on indecisiveness according to the demographic characteristics of the participants. There was a significant difference only for whether they liked the major they were studying. Students who liked their major were significantly more indecisiveness.

Table 1. Differences in indecisiveness according to demographic characteristics.

Variable	Demographic variables	Category	*M*	*T*/*F*	*P*-value
Indecision	Gender	Male	3.210	0.479	0.632
		Female	3.188		
	Place of origin	Town	3.213	0.557	0.578
		Countryside	3.188		
	Only child or not	Only	3.271	1.738	0.084
		Has siblings	3.179		
	Left behind or not	Left behind	3.150	−1.415	0.157
		Not left behind	3.205		
	Do you like studying major	Like	3.224	4.052	0.000
		Dislike	3.053		
	Grade	Freshman year	3.172	0.397	0.673
		Sophomore year	3.199		
		Junior year	3.209		

3.3. Career decision-making ability and demographic characteristics

Table 2 shows the results of the t-test on career decision-making ability according to the demographic characteristics of the participants. Significant differences were observed for gender, place of origin, left-behind status, only child vs. having siblings, and feelings about one's major. The career decision-making ability was significantly higher among men than women, participants from urban areas than those from rural areas, non-left-behind participants than those who were left behind,

participants who liked their majors than those who did not, and those who were an only child.

Table 2. Differences in career decision-making ability according to demographic characteristics.

Variable	Demographic variables	Category	*M*	*T*/*F*	*P*-value
Career decision-making	Gender	male	7.204	4.438	0.000
		female	6.620		
	Place of origin	town	7.020	2.501	0.013
		countryside	6.671		
	Only child or not	only	6.980	1.958	0.050
		Has siblings	6.700		
	Left behind or not	Left behind	6.436	−3.293	0.001
		Not left behind	6.830		
	Do you like studying major	Like	6.927	8.018	0.000
		Dislike	5.911		
	Grade	Freshman year	6.762	1.739	0.176
		Sophomore year	6.640		
		Junior year	6.872		

3.4. Anxiety and demographic characteristics

Table 3 shows that there are no significant differences in anxiety between genders, places of origin, whether they are the only child, and whether they are left behind. However, there was a significant difference in whether they liked their major ($t = -6.133$, $P = 0.000$). The anxiety of students who liked their major was significantly lower than that of students who did not like their major.

Table 3. Differences in anxiety according to demographic characteristics.

Variable	Demographic variables	Category	*M*	*T*/*F*	*P*-values
Anxious	Gender	Male	1.743	−0.025	0.980
		Female	1.745		
	Place of origin	Town	1.747	0.065	0.948
		Countryside	1.744		
	Only child or not	Only child	1.720	−0.603	0.547
		Has siblings	1.748		
	Left behind or not	Left behind	1.790	1.651	0.099
		Not left behind	1.731		
	Do you like studying major	Like	1.696	−6.133	0.000
		Dislike	1.957		
	Grade	Freshman year	1.721	1.049	0.351
		Sophomore year	1.738		
		Junior year	1.783		

3.5. Descriptive statistics: Indecisiveness, career decision-making ability, and anxiety

Table 4 presents the means, standard deviations, and correlations for indecisiveness, career decision-making ability, and anxiety. The mean for career decision-making indicated that the participants had a moderate level of career decision-making ability. The mean for anxiety indicated the participants were experiencing a moderate level of anxiety. The mean for indecisiveness indicated the participants were experiencing a medium level of indecisiveness.

The correlational analysis indicated indecisiveness was negatively correlated with career decision-making ability and anxiety. Additionally, career decision-making negatively correlated with anxiety.

Table 4. Means, standard deviations, and correlations among indecisiveness, career decision-making ability, and anxiety.

Variable	*M* ± SD	Career decision-making	Anxiety
Career decision-making	6.740 ± 1.654	1	
Anxiety	1.744 ± 0.549	−0.221**	1
Indecisiveness	3.193 ± 0.539	−0.283**	−0.109**

Note: **$P < 0.01$.

3.6. Relationship between indecisiveness and career decision-making ability: The mediating role of anxiety

The results of the correlation analysis met the statistical requirements for a test of the mediating effect (Wen and Ye, 2014) of anxiety on the relationship between indecisiveness and career decision-making ability. The results of the analyses are illustrated in **Figure 1** and presented in **Table 5**. Indecisiveness significantly predicted career decision-making. When anxiety was added to the regression equation, indecisiveness remained a significant predictor. Indecisiveness significantly predicted anxiety and anxiety significantly predicted career decision-making. **Table 6** shows the results of bootstrapping using 95% confidence intervals. The confidence interval for the mediating effect did not include 0, which means that the mediating effect was significant. Thus, indecisiveness directly predicted career decision-making ability but also indirectly predicted career decision-making through anxiety. The direct effect and mediating effect accounted for 92.52% and 7.48% of the total effect, respectively.

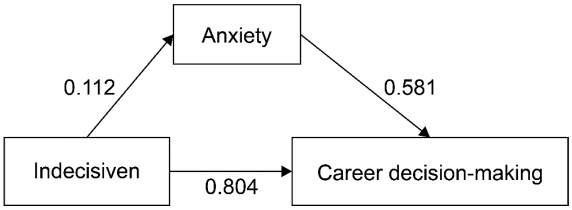

Figure 1. Anxiety as a mediator in the relationship between indecisiveness and career decision-making.

Table 5. Test of model for anxiety as mediator.

	Career decision-making		Anxiety		Career decision-making	
	B	***t***	***B***	***t***	***B***	***t***
Indecisiveness	0.869	9.643***	−0.112	−3.602***	0.804	9.049***
Anxiety					−0.581	−6.660***
R	0.283		0109		0.342	
R^2	0.080		0.012		0.117	
F	92.992***		12.972***		70.559***	

Note: ***$P < 0.001$.

Table 6. Total, direct, and mediating effects.

Effect	Effect value	Boot standard error	Lower limit confidence interval	Upper limit confidence interval	Relative effect value
Total effect	0.869	0.090	0.692	1.045	
Direct effect	0.804	0.089	0.630	0.978	92.52%
Mediating effect	0.065	0.031	0.012	0.132	7.48%

4. Discussion

This study found that students who liked their current major were more indecisive than those who did not. Lunneborg (1975) showed that interest significantly increased the ability to predict indecision in a regression equation. This suggests that students' liking for their major may make them more hesitant, or students who like their major may be more thoughtful and indecisive in the career decision-making process. This result may be related to professional identity and decision-making style (Smith and Caruso, 2015). When students have a high degree of identification with their major, they may be more cautious in decision-making, because they are more concerned about the long-term impact of their decision (Knaus and Remmers, 1978). In addition, it may be that students who like their major have higher expectations and sense of responsibility for their choices, so they are more cautious when making decisions related to their future career (Knaus and Remmers, 1978).

The study findings indicated that the career decision-making ability of college men was significantly higher than that of college women. Chen et al. (2021) showed that male high school students were more confident than female students in career decision-making. Salim and Preston (2019) surveyed 824 high school students and found that the career decision-making score of boys was significantly higher than that of girls. This result may be related to many factors, such as social and cultural background, gender role stereotypes, and personal experiences (Bender and Bushey, 2014).

The study results indicated the career decision-making ability of students from cities and urban areas was significantly higher than that of students from rural areas. Fengxia (2015) found that college students from urban areas had significantly higher career decision-making self-efficacy than those from rural areas, mainly because college students from urban areas receive a better education, have more educational resources, and gain more knowledge and comprehensive information.

The results also Indicated the career decision-making ability of students who were an only child was significantly higher than those students with siblings. Wen's (2019) study showed that the career decision-making self-efficacy of those who were an only child was higher than those who had siblings. Comparatively, an only child may get more attention and resources in the family, which may help them perform better with career decision-making.

The career decision-making ability of college students who were not left behind was significantly higher than that of left-behind college students. These results are consistent with Huiyong and Yongfang (2010), who found that the career decision-making self-efficacy of non-left-behind college students was significantly higher than that of left-behind college students. A possible explanation for this finding is that non-left-behind college students may benefit from a wider social network, more information sources, and more available support from parents, which helps them obtain more information and suggestions in the process of career decision-making (Huiyong and Yongfang, 2010).

Students who liked their major had significantly higher career decision-making ability than students who did not like their major. Gagne and Deci (2005) pointed out that interest is one of the important factors in career decision-making because it can affect personal career choice, career satisfaction, and career achievement. When people are interested in a certain field or career, they are more likely to choose the related career and show higher enthusiasm and commitment in their work. Interest can also help people better adapt to the career environment and improve career satisfaction and sense of achievement. In addition, the results showed that students who liked their major had significantly lower levels of anxiety than students who did not like their major. This finding is consistent with Zhang et al. (2021) 's findings that professional identity negatively correlated with anxiety. Similarly, students who identify with their major may experience less stress and anxiety related to their major studies. When students believe that their major is consistent with their values and goals, they will pursue their goals more firmly, which helps to enhance their psychological resilience and ability to cope with pressure (Wang et al., 2013). The possibility that students who like their study major may be more hesitant when choosing a career is not universally true; however, it does reveal some of the dilemmas that students may face when choosing a career. Students who like their major may face more contradictions and dilemmas when choosing a career. On the one hand, they may love their major very much, and therefore hope to be able to use their talents and passion in that field. On the other hand, they may also realize that the employment prospects in that field are not optimistic, or they may worry that their professional knowledge and skills cannot meet the needs of other fields. This contradiction may lead them to hesitate and be indecisive when choosing a career. However, this does not mean that all students who like their major will be indecisive. Some students may be able to clearly recognize their strengths and interests, and also be able to rationally analyze employment prospects and market demand, to then make wise career choices (Deng, 2012).

The test of the mediation model indicated that indecisiveness had a direct effect on career decision-making ability as well as an indirect effect through anxiety. Germeijs and Soenens (Germeijs et al., 2006) found that indecisiveness can predict the individual's doubts about whether they have enough information to make decisions.

Nauta (2007) pointed out that indecisive students are uncomfortable with their professional choices because they are unwilling to make commitments to any choice. Germeijs and Verschueren's (2011) longitudinal study confirmed that indecision poses risks not only for short-term post-decision problems, but also for longer-term post-decision problems. In addition, they found that indecisive individuals showed more uncertainty in the decision-making process, which in turn led to decision-making instability. Anxiety has a clear mediating effect in the career decision-making process. When college students face career decisions, they may feel anxious about the possible negative consequences of their choices. This anxiety may lead them to become indecisive when making career decisions, because they are afraid of making the wrong choice. At the same time, indecisiveness may also affect an individual's anxiety, making them unable to make sensible decisions. When facing career decisions, college students' anxiety may stem from uncertainty about the future, doubts about their own abilities, concerns about others' evaluations, and the characteristics of indecisiveness (Elaydi, 2006). Germeijs et al. (2006) conducted a study on the relationship between career decision-making tasks and indecisiveness among students at the end of grade 12, and the mediating role of career anxiety in the relationship between indecisiveness and career decision-making. The results showed that anxiety played a mediating role in the relationship between self information, depth information, decision-making status, and commitment and indecision. Their findings are consistent with the results of the current study.

Hesitant students tend to show low self-awareness and depth of understanding information, less progress, low decision-making ability, and a lack of determination. A reason for this phenomenon is that hesitation is related to more anxious career choices. Consequently, their performance in career decision-making tasks will be mediocre (Germeijs et al., 2016). Indecisive students will have some limitations in their self-cognition. They may lack in-depth understanding of their abilities, interests, and values, which makes it difficult for them to make decisions when facing choices (Feldman et al., 2007). Because their information processing is superficial, it would be difficult to deeply explore various possibilities and their potential effects. This may lead them to rely too much on the opinions or suggestions of others in the decision-making process, because they lack the ability of independent thinking and judgment (Germeijs et al., 2016). Moreover, indecisiveness correlates with anxiety related to career choice. Indecisive students may hesitate because of fear of failure or uncertainty about the future, which further affects their performance in career decision-making tasks (Feldman et al., 2007). They may be too anxious to make a wise choice, or give up easily in the face of difficulties and challenges.

5. Conclusion and possible contributions

There are significant differences in terms of indecision, career decision-making, and anxiety when it comes to whether a student likes their major. Career decision-making also varies significantly based on gender, place of origin, whether they were an only child, and whether they were left behind. Career decision-making is significantly negatively correlated with indecision and anxiety. This study found that indecisiveness had a significant impact on career decision-making, and that anxiety

partially mediated this association. Thus, in the process of cultivating students' career decision-making ability, it would be important to evaluate and address the student's psychological characteristics where indicated, such as their information processing ability, self-awareness, and level of anxiety.

There are several interventions that can be implemented to enhance college students' career decision-making ability, such as career education, helping students understand their own interests and abilities, and improving their career cognition. It would be important to advocate for gender equality, encourage male and female students to give full expression to their respective advantages, and improve students' career decision-making abilities. Rural students may require particular attention. In this regard, the allocation of educational resources needs to be optimized for students from rural areas to narrow the gap in resources between urban and rural areas. At the family level, interventions could address educating the family, assisting parents in providing support and guidance, and helping children establish appropriate professional values. Students should be encouraged to explore their own interests, and interventions should be implemented to increase self-confidence, enhance self-awareness, and develop the ability to deal with career decision-making challenges. Psychological counseling could address mental health issues and treat anxiety disorders, while career counseling can address career decision-making ability, improve information processing ability, and cultivate students' ability to rationally analyze career decision-making factors. These strategies are expected to improve college students' career decision-making ability and lay a foundation for their future development. Future research can explore other factors and practical applications that affect career decision-making to promote the improvement of college students' career decision-making ability.

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