

Educational Choice and the Willingness to Apply of Higher Vocational Students in Guangdong Province, China: The Mediating Role of Career Decision-making Self-efficacy

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Abstracts

The purpose of this study was to explore the influence of educational choice on the intention to enter the examination, and the mediating role of career decision-making self-efficacy. A total of 1391 freshmen from six higher vocational colleges in Guangdong Province of China were investigated with Education Choices Scale, Career Decision-Making Self-Efficacy Scale and Willingness to Apply Scale. The results showed that educational choice and career decision-making self-efficacy had significant effects on the willingness to apply. Career decision-making self-efficacy plays a mediating role in the significant positive impact of educational choice on the willingness to apply. Therefore, China's educational institutions and policy makers should focus on cultivating vocational students' career decision-making self-efficacy and improving their confidence and ability in career decision-making. To help students better understand their interests, values, and career goals, and to help students better understand the career fields they face professionally.

Keywords: educational choice, willingness to apply, career decision-making self-efficacy, mediating role

1. Introduction

In Guangdong, China, higher vocational students' educational choice and willingness to apply is a topic of concern (Xiong Bingqi, 2019). With social development and economic change, vocational education plays an important role in upgrading the national high-tech and high-skill capabilities (Xu, 2020). However, concerns remain about talent development, especially in meeting the needs of sustainable economic development. The government has taken a number of policy measures to address this problem, but in practice gaps remain (Li, 2022). In this context, students' educational choices and willingness to apply for exams become the focus of urgent research, especially the key role of career decision-making self-efficacy in this process (Jiang et al., 2022; Szymkowiak et al., 2021).

Xiong Bingqi (2019) emphasizes the importance of educational choices when vocational students in China are faced with career choices. The Chinese government attaches great importance to the training of high-quality workers, however, from the perspective of the overall needs of society, there are still problems that cannot meet the requirements of sustainable economic development (Li, 2022). Thanh et al. (2022) study states that academically high quality schools and majors are more likely to attract students' interest. Students' negative perceptions of academic aspects can lead to negative willingness to apply, and students often consider future career prospects to decide which school or major to apply for (Jin Ge, 2020; Avolio et al., 2020; Barone & Assirelli, 2020; Bordon et al., 2020).

Liu Shanshan (2020) points out that educational choice behavior reveals a series of complex processes in the field of education. It covers the relationship between social mobility and social stratification, considering the role of anticipation and perception of reality, and ultimately affecting the well-being of residents. When the main body of education choice is the parents, this choice usually represents the parents' expectations for the students' life planning (Sun Hongyan, 2013). However, many students may show this emotion in the subsequent learning

process. This aversion may stem from the individual's pursuit of self-interest and goals that are different from parents' expectations, and therefore the dynamic interaction between individual and family expectations in educational choices (Enrich, 2015). The interactive process can profoundly affect a student's learning experience and well-being.

In addition, social events and policy changes can have an impact on students' willingness to apply, Ochilova (2020). Therefore, students' educational choice is not only a part of individual development, but also a key component of socio-economic development. In this context, the choice of education has a profound impact on students' willingness to apply. Education choice is not only related to individual career development, but also directly related to the quality and structure of social labor force. Research shows that educational choices have a guiding effect on students' career paths and development directions (Enrich, 2015). Therefore, a deeper understanding of the impact of educational choice on the willingness to apply will help to provide students with a more informed career planning and development direction. Therefore, this study put forward hypothesis 1: Guangdong higher vocational students' educational choice has a significant impact on their willingness to apply.

Career decision-making self-efficacy plays a key role in higher vocational college students' educational choice and willingness to apply. The concept stems from the self-efficacy theory of psychologist Bandura (1977), which emphasizes that an individual's confidence in his or her abilities affects his or her behavior and outcomes. Abdul-Rahim et al., (2021) found that career decision self-efficacy is closely related to an individual's ability to make educational choices. Specifically, career decision self-efficacy has incremental predictive power in predicting career decision making and school adaptation (Storme et al., 2017). Muturi and Wangeri (2022) Career decision-making self-efficacy is divided into two categories: high science self-efficacy and low science ability, and points out that there is a positive correlation between low science self-efficacy and career decision-making, while high science self-efficacy is negatively correlated with students' ability to decide career choice. This indicates that students' career decision-making self-efficacy may show differences in the face of different levels of scientific ability, and the influencing factors on career choice are complex and diverse.

Jin Ge (2020) from the perspective of career education of freshmen in 2011-2015, the empirical study shows that 73.3% of students are "relatively satisfied" with their major, 85% of students believe that "autonomy" is the deciding factor in choosing school and major. Similar to economic preferences, some personality traits have been shown to correlate with individual choices (Coenen et al., 2021). While another study suggests that Facchinello et al. (2017) Timing and delivery of school information is important, "channels of delivery of school information" in educational settings may also increase inequality. The push and pull factors of this information, as well as the pull factors in the decision-making environment, will ultimately affect the student's decision to enroll (Rembielak et al., 2020). Bettinger et al. (2012) It is found that the combination of assistance and information processing can significantly increase students' willingness to apply and ultimately improve their college enrollment. Therefore, this study proposes hypothesis 2: Educational choice has a significant impact on career decision-making self-efficacy.

Students' confidence in their career decision-making ability is shaped by educational choices, which affects the formation of their career decision-making self-efficacy. Career decision-making self-efficacy, by influencing individuals' confidence and propensity for a particular profession, encourages students to express their willingness to apply for a particular profession more actively (Muturi & Wangeri, 2022; EI Nemar et al., 2020). The results of Muturi and Wangeri (2022) show that there is a positive correlation between career decision-making self-efficacy and career choice in the strong and weak scientific self-efficacy dimensions.

In contrast, Betz et al. (1996) suggested that career decision self-efficacy reflects beliefs about executive success and career decision making. Meanwhile, career decision-making self-efficacy as an adaptive resource and adaptive response mediates between parental autonomy support and academic engagement (Jiang et al., 2022), And attempts to measure the strategies individuals employ when making career decisions. Studies have found that students who have mastered self-efficacy in career decision-making are more likely to achieve self-actualization and thus achieve academic success (EI Nemar et al., 2020). Research by Ebner et al. (2018) has also shown that individual beliefs in internal control are positively associated with professional self-efficacy. Based on these findings, this study proposes hypothesis 3: career decision-making self-efficacy plays a mediating role in the significant impact of educational choice on the willingness to apply.

Prospect theory states that an individual's concern for potential losses leads to greater focus on avoiding potential risks and losses rather than simply pursuing potential gains (Kahneman & Tversky, 1979). Prospect theory provides a useful perspective for understanding the psychological process of Chinese vocational college students' educational choice and their willingness to apply. In the context of higher vocational students, this means that

they are more concerned about possible negative consequences in their educational choices and career decisions, such as leading to professional maladjustment or employment difficulties. In addition, studies have shown that students' decision-making processes are influenced by attitudes and motivations that are sensitive to potential loss, and thus affect their educational choices and willingness to apply (Hameleers, 2021; Falk et al., 2023). Prospect theory provides guidance for understanding and analyzing students' psychological factors in career decision-making, and also provides a theoretical basis for formulating more targeted intervention strategies in the future.

Therefore, the objective of this study is to explore the impact of higher vocational students' educational choices on their intention to enter, and focus on the mediating role of career decision-making self-efficacy in this process. In addition, the study will draw on prospect theory to gain insight into students' concerns about potential losses in educational choices and career decisions, and how this concern affects individuals' attitudes and motivations. Based on the above, this study proposes the following research questions:

- 1) Is there a significant impact of higher vocational students' educational choice on their willingness to apply?
- 2) Is there a significant effect of Chinese vocational college students' educational choice on career decision-making self-efficacy?
- 3) Does career decision-making self-efficacy play a mediating role in the relationship between educational choice and the intention to enter an examination?
- 4) How does prospect theory explain Chinese vocational students' concern about potential losses in their educational choices and career decisions, and the impact of this concern on their willingness to apply the exam?

2. Research Design

2.1 Research Framework

Based on prospect theory, this study explored the relationship between educational choice and career decision-making self-efficacy of vocational college students in Guangdong Province, China. To explore the relationship between educational choice and the intention of entering the exam. To explore the role of career decision-making self-efficacy as a mediator between educational choice and the intention to enter the examination. The research framework is shown in Figure 1.

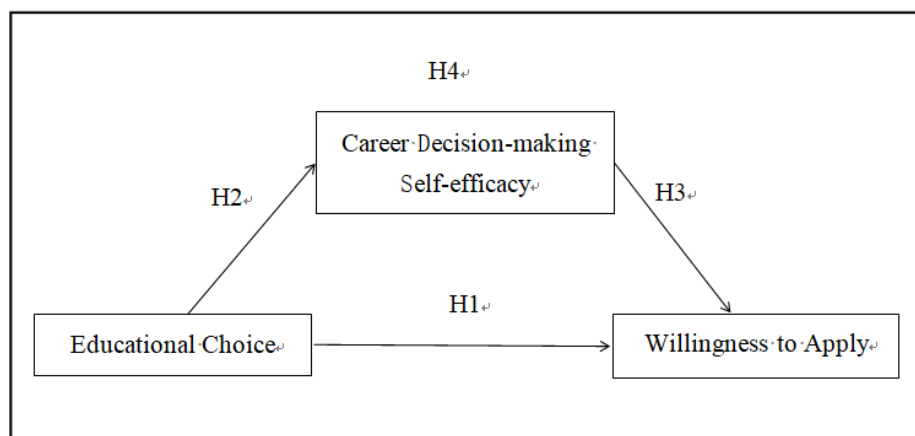


Figure 1. Higher vocational students' educational choice decision model based on prospect theory

2.2 Research Method

The questionnaire investigation approach is adopted in this study. Before the distribution of the questionnaire, first of all, in the questionnaire star design questionnaire setting for quality control, questionnaire setting and Rewards were taken into consideration during the questionnaire process, and participation from star students was voluntary. before the test, the class teachers of the subjects were informed of the intention and purpose of the study. After obtaining the consent of the class teachers, the class teachers were responsible for issuing the questionnaire, and informed consent instructions and notifications were given on the front page of the questionnaire. In order to ensure the objective authenticity of the questionnaire data, the confidentiality of the research results was reiterated to the research subjects, such as: filling in is voluntary, the right to terminate at any time, identity confidentiality, content confidentiality, and explain the purpose of the study.

2.3 Research Objects

This study selects the freshmen of higher vocational colleges in Guangdong Province as the research object, which benefits from the proportion of vocational education in Guangdong province. Vocational colleges in Guangdong Province have expanded from 56 in the early days of the founding of the People's Republic of China to 625 at present (by 2022), accounting for 42% of the national higher vocational colleges, and the total number of students in school has reached 2.805 million. Guangdong Province has the largest vocational education system in China (SouthNet, 2023). Therefore, this study in Guangdong Province within the scope of the selected six higher vocational colleges, the survey covers the comprehensive class, science and engineering and other disciplines of different nature of higher vocational colleges in Guangdong Province. The 6 higher vocational colleges are distributed in the west of Guangdong Province, the east of Guangdong Province and the Pearl River Delta, and are evenly distributed in Guangdong Province.

2.4 Sampling and Measurement

Random convenience sampling was used (Sedgwick, 2013). Ghiselli et al. (1981) suggested that if a study involves the use of a scale, the sample size should be at least 10 times the total number of questions. There are 33 items in the three scales and 16 items in the subjective open-ended questions. The valid data should be collected about 500 items. This study selected freshmen from six higher vocational education institutions in Guangdong Province of China as the experimental subjects. 2,000 questionnaires were distributed, 1,847 were returned, and invalid questionnaires were deleted, resulting in 1,391 samples. Therefore, the sample of this study meets the above sampling criteria. The questionnaire was distributed on 3 May 2023 and completed on 21 May.

2.5 Research Tool

Educational Choices Scale, Career Decision Making Self-efficacy Scale, and the Willingness to Apply scale were used as questionnaires. The following are described separately:

2.5.1 Educational Choice Scale

Educational Choice Scale (ECS), measured with reference to the scale developed by Sojkin et al. (2012). The scale consists of seven items, scored by Likert 5 points, answer options from 1 to 5 are "completely inconsistent, somewhat inconsistent, unclear, somewhat consistent, completely consistent," all items are added up and then the average score is calculated. The higher the score, the higher the student's educational choice support. The total Cronbach's Alpha coefficient was.890. Details of the items are shown in Table 1.

Table 1. Educational Choice Scale

Item number	Item content
JX12_01	Family's opinions and expectations
JX12_02	Yearning for student life
JX12_03	Family Financial Support
JX12_04	Best chance of finding a job
JX12_05	Career development
JX12_06	In line with their life aspirations
JX12_07	Start an independent life.

Note 1: JX12=Educational Choice.

Note 2: This table presents the contents of the Education Choice Scale . Adapted from "Determinants of Higher Education Choices and Student Satisfaction: The Case of Poland," by B. Sojkin, P. Bartkowiak and A. Skuza, 2012, Higher Education, 63(5), p. 572 (<https://doi.org/10.1007/s10734-011-9459-2>). Copyright 2012 by the Higher Education.

2.5.2 Career Decision Making Self-Efficacy Scale

Career Decision Making Self-efficacy Scale (CDMSE), using a simplified version of the Career Decision Self-efficacy Scale (CDSES-SF) from the Fu Yang-Hong (2015) study. This scale is combined with Betz et al. (1996) Based on the adaptation of the scale, the questions are composed of 24 items, and the answers are scored by the 5-point Likert scale, with scores ranging from 1-5, ranging from completely inconsistent, relatively inconsistent, unclear, relatively consistent, completely consistent. The overall scale has a Cronbach's Alpha coefficient of.94. The items are shown in Table 2.

Table 2. Career Decision-Making Self-Efficacy Scale

Item number	Item content
ZC13_01	You can use the Internet or other media to find school information or professional information of interest
ZC13_02	Choose a major that suits you from one you are considering or recommended by others
ZC13_03	Plan your learning goals for the next three or four years based on future school and professional information
ZC13_04	Adjust your approach to the difficulty of learning in your chosen profession, based on what you know about the institution or profession.
ZC13_05	Be able to accurately evaluate your ability based on known school or professional information
ZC13_06	The future major is chosen from the career that he has solved
ZC13_07	Be able to determine the course of action to be taken in order to successfully complete the course of study based on known school and professional information
ZC13_08	Remain committed to your professional or career goals in the face of setbacks
ZC13_09	From what I know, I can roughly determine what my ideal job is in the future
ZC13_10	For the future 3-5 years of professional development trends and professional future oriented career development trends, through a variety of ways to understand and judge
ZC13_11	According to your current situation, you can clearly choose a career or major that matches your desired lifestyle
ZC13_12	According to their current learning progress, the future employment goals, to design the current stage of professional learning plans and future job plans
ZC13_13	Know your current professional learning focus, to facilitate the future better docking career requirements
ZC13_14	Know the average annual income of employees in a particular occupation or profession
ZC13_15	For the current study of professional and professional future oriented occupation, the heart can maintain a calm face
ZC13_16	If you are not satisfied with your chosen career or profession, you intend to change your career immediately
ZC13_17	In order to achieve the future professional learning goals or career goals to be employed, can distinguish the importance of learning content at this stage
ZC13_18	Communicate with people who are already working in a career or professional field they are interested in
ZC13_19	Choose a career or profession that matches your interests
ZC13_20	Before you volunteer to apply for the examination, you can determine the company information or school information related to your possible major study
ZC13_21	Now know what kind of lifestyle you want to live
ZC13_22	Before enrolling for the examination volunteer, I have already understood the professional requirements to be selected in the future and the enrollment information of the colleges and universities where the major is located
ZC13_23	Volunteer can successfully make more accurate judgments on the professional ability evaluation of the expected school before applying for the examination
ZC13_24	Identify reasonable alternatives when you can't get your preferred major or occupation before volunteering

Note 1: ZC13=Career decision-making self-efficacy.

Note 2: This table presents the contents of the Education Choice Scale. Adapted from "Evaluation of a Short Form of the Career Decision-making Self-efficacy Scale," By Fu Yu Hong, 2015, Jilin university, Ph. D. thesis, p.131.(<https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CDFDLAST2015&filename=1015595188.pdf>). Copyright 2015 by China Knowledge Network.

2.5.3 Willingness to Apply Scale

The Willingness to Apply Scale (WA) is a self-made scale. This study combines two research variables: educational choice and career decision-making self-efficacy, and takes the scale of willingness to apply for the examination as the scoring topic. The higher the score is from 1 to 5, the more important the score proportion of each dimension of this study in the minds of higher vocational students is. The Cronbach's Alpha coefficient for

the total table is. 912, and the contents of the item are shown in Table 3.

Table 3. Willingness to Apply Scale

Item number	Item content
BK31_01	Educational choices
BK31_02	Career decision-making self-efficacy

Note 1: BK31=Willingness to Apply.

Note 2: Data source collated for this study.

2.6 Research Ethics

This study follows National Research Council of Thailand (2015) The principles of respect (2.2), compassion (2.3), and justice (2.4) were observed during the study. Undergo ethical review by the Ethics Committee of Boren University in Thailand and conduct relevant research after obtaining approval from the University. according to National Research Council of Thailand (2015) This study was subject to an ethical review conducted by the Ethics Committee of Burren University, Thailand, and consent was given to start collecting all study data after obtaining approval from the Ethics Committee of Burren University, Thailand (review number: 057 / 65). At the same time, the author also applies for academic ethics review to the working university and obtains the review of the working university (review date: March 10, 2023). Questionnaire survey data acquisition date for May 3 - May 21, 2023.

3. Data Analysis and Results

3.1 Research Sample

A total of 2, 000 questionnaires were sent out, 1, 847 were returned, and 1, 391 formal samples were returned after the invalid questionnaires were deleted. Of these, 718 (51.6%) were boys and 673 (48.4%) girls.

3.2 Reliability and Validity Analyses

This study conducted internal consistency tests on the measurement tools of the Educational Choice, Career Decision-Making Self-Efficacy, and Willingness to Apply Oneself Scale. The results are shown in Table 4. The overall Cronbach's Alpha coefficient of the Education Choice Scale was.891, the overall Cronbach's Alpha coefficient of the Career Decision-Making Self-Efficacy Scale was.932, and the overall Cronbach's Alpha coefficient of the Willingness to Apply Scale was.929. Composite reliability (CR) values of.810,.970,.928 were all greater than the standard value of.600. The Average Variance Extracted (AVE) values for each potential variable were.382,.576, and .723 greater than the.500 standard value. Among them, the Average Variance Extracted (AVE) value of potential variables in the educational choice scale is.382 less than.500 standard value, and the standard value should be greater than.500. Chin (1998) suggested that the square root of the factor load is AVE, if the AVE is greater than. 360; Fornell and Laecker (1981) suggest that if the AVE is less than.500 but the CR is greater than the standard value of.600, the scale still has convergent validity and is still acceptable. Therefore, the convergence validity of the Educational Choice Scale is acceptable. The consistency of educational choice, career decision-making self-efficacy, and willingness to apply (Cronbach's Alpha >.700) indicated that the three measurement tools in this study had good reliability and validity (Nunally, 1978; Raykov & Marcoulides, 2011).

Table 4. Reliability and Validity of Three Scales

Scale	Number of Questions	Cronbach's α		CR	AVE
		Dimension	Whole		
Educational Choice	6		.891	.810	.382
Career Decision-making Self-efficacy	24		.932	.970	.576
Willingness to Apply	2		.929	.928	.723

Note 1: Cronbach's α =Cronbach's Alpha.

Note 2: CR=Composite Reliability.

Note 3: AVE=Average Variance Extracted.

Note 4: Data source collated for this study.

3.3 Common Method Deviation Test

This study used the model adaptation between single factor CFA model and multi-factor CFA model. If the multi-factor CFA model fits well, it means that the answer does not have the problem of classification, mainly depends on the size of the fitness index χ^2 , the smaller χ^2 value means that the common method deviation problem is not serious, and the recovered samples have good population representation. In this study, the multifactor CFA model was moderately well matched, the χ^2 value was less than the unifactor CFA, and the p value was significant ($p < .001$), indicating that the questionnaire did not have CMV common method bias, and the recovered samples had good population representation, as shown in Table 5.

Table 5. Comparative analysis of single factor CFA model and multi-factor CFA model

Modelling	χ^2	df	$\Delta\chi^2$	Δdf	p	GFI	AGFI	CFI	RMR	RMAEA
Single -Factor CFA	31556.366	1274	28207.354	785	.000	.323	.268	.542	.091	.131
Multi-Factor CFA	3349.012	489				.855	.834	.921	.072	.065
Ideal Adaptation Index	小	大	—	—	—	>.900	>.900	>.900	<.050	<.080

Note 1: Single-factor CFA sets a factor structure for all items; Multi-factor CFA is a seven-factor model .

Note 2: Data source collated for this study.

3.4 Descriptive Statistical Analyses

Table 6 shows that the absolute values of skewness are less than 2 and kurtosis are less than 7 for 1, 391 samples. (Curran et al., 1996), satisfying the normality distribution.

Table 6. Normal test analysis table

Scale	Dimension	M	SD	Skewness	Kurtosis
Educational Choice		3.406	.742	-.552	.697
Career Cecision-making Self-efficacy		3.551	.634	-1.018	2.548
Willingness to Apply		3.456	.798	-.712	.915

Note 1: M=Mean Value, SD=Standard Deviation.

Note 2: Data source collated for this study.

3.5 Correlation Analysis

The results show that the correlation coefficients between. 365-. 590 are significantly lower than. 800, $p < .001$. Wu Minglong (2009) pointed out that correlation analysis reflects the linear relationship between the criteria, the greater the correlation coefficient, the stronger the linear relationship. In this study, there was a significant positive correlation between the variables. Wu (2009) also proposed that the correlation coefficient should not exceed. 800, indicating that there is no serious collinearity. Therefore, there is no collinearity in this study. The diagonal line data is the square root of AVE. The AVE score is larger than the correlation coefficient, which indicates that the AVE score has enough discriminant validity (Hulland, 1999). Details are shown in Table 7.

Table 7. Summary table for correlation analysis of variables

	JX	ZC	BK
JX	.618		
ZC	.587**	.759	
BK	.365**	.448**	.850

Note 1: JX=Educational Choice; ZC=Career Cecision-making Self-efficacy; BK=Willingness to Apply.

Note 2: The diagonal line is the square root of the AVE.

Note 3: Data source collated for this study.

3.6 An Analysis of the Mediating Effect of Career Decision-making Self-efficacy

Based on the hierarchical regression analysis, the bootstrap approach used in the Hayes (2018) study was used. The study provides case analysis to estimate parameters through bootstrap sampling, and is particularly suitable for dealing with uncertainties in moderating and mediating effects, providing more reliable inferences and interpretation of results for the study. SPSS Procss is mainly used to deal with the mediating hypothesis and

index based on linearity, and different types of mediating and moderating effects can be discussed.

Using Process v3.5, the data is first standardized, and then the 95% confidence interval (CI) is calculated using the bootstrap method, setting the repeat sample 5000 times. In this process, we pay attention to the significance of mediating effect and moderating effect. Among them, the upper and lower limits of the bootstrap confidence interval CI values do not contain 0, indicating that the product term coefficient is significant, supporting the significance of the intermediary effect. For a moderating effect, if the 95% confidence interval (ci) of its estimate is observed to contain no 0, this indicates that the moderating effect may also be statistically significant (Hayes, 2018; MacKinnon et al., 2004; Preacher & Hayes, 2008).

According to the test procedure proposed by Wen Zhonglin and Ye Baojuan (2014), the results showed that the direct effect of educational choice → admission intention was .068 ($p < .01$; CI = .015-.121); The indirect effect of educational choice → career decision self-efficacy → admission intention was 0.052 (ci = .012-.096). The 95% confidence interval CI value of career decision-making self-efficacy does not contain 0, which shows that career decision-making self-efficacy plays a significant role in the mediation. Through career decision-making self-efficacy, education choice has a significant mediating effect on the willingness to apply an examination. Through the analysis of mediating validation, career decision-making self-efficacy plays a mediating role in the impact of educational choice on the intention to enter the examination, which also accords with the three steps of mediating validation proposed by Baron and Kenny (1986). The results are shown in Table 8.

Table 8. Intermediate Effect Test Analysis Table

Path	Type of Action	Effect Value	SE	t	95% CI
JX→BK	Total Effect	.366	.025	14.622***	.317-.415
	Direct Effect	.068	.027	2.518*	.015-.121
JX→ZC→BK	Indirect Effect	.052	.021		.012-.096

Note 1: JX=Educational Choice; ZC=Career Decision-making Self-efficacy; BK=Willingness to Apply.

Note 2: SE=Standard Error.

Note 3: * $p < .05$, *** $p < .001$.

Note 4: 95% CI=Confidence Interval.

Note 5: Data source collated for this study.

4. Discussion

Based on Prospect Theory, this study explores the educational choice decision and enrollment intention of vocational college students in Guangdong Province, China, and constructs a framework of educational choice decision based on Prospect Theory. Based on the research of freshmen in higher vocational colleges in Guangdong Province, China, the results show that educational choice has a significant impact on career decision-making self-efficacy. Career decision-making self-efficacy has a significant impact on the willingness to apply. The research model verified in this study shows that career decision-making self-efficacy plays a mediating role in the significant impact of educational choice on the willingness to apply an examination.

4.1 The Influence of Higher Vocational Students' Educational Choice on Their Willingness to Apply for Examination

Studies have shown that academically high quality schools and majors are more likely to attract students' interest, a view supported by research by Thanh et al. (2022). However, studies have also pointed out that students' negative perceptions of academic aspects may lead to negative enrollment intentions (Avolio et al., 2020; Barone & Assirelli, 2020; Bordon et al., 2020). This suggests that educational choice is influenced not only by the attractiveness of schools and majors, but also by students' perceptions and assessments of academic quality. Therefore, educational choice decision is not only an academic decision, but also a strategic decision for career planning and development. At the same time, students usually consider future career prospects to decide which school or major to apply for (Jin Ge, 2020). Educational choices are influenced by students' expectations and expectations for future career development, further emphasizing the complexity of choice itself.

In addition, social events and policy changes can also have an impact on students' willingness to apply (Ochilova, 2020), for example, certain social events and policy changes may cause students to increase or decrease their interest in a particular school or major. This further emphasizes that educational choice decision is a dynamic process, which is influenced by many factors. These factors interweave with each other and together shape the

decision-making process of students' educational choice.

4.2 The Influence of Career Decision-making Self-efficacy of Higher Vocational College Students on Their Willingness to Apply Examinations

Abdul-Rahim et al. (2021) The results show that career decision-making self-efficacy is closely related to students' career choice ability, which means that students with higher career decision-making self-efficacy are more likely to actively participate in the examination process. However, it is worth noting that for some students, the willingness to apply the exam is influenced not only by the individual's self-efficacy, but also by the support and information provided by the school. Bettinger et al. (2012) It is found that the combination of assistance and information processing can significantly increase students' willingness to apply and ultimately improve college enrollment. This finding is related to the impact of the timing and delivery of school information on students' willingness to apply, as mentioned in study hypothesis H2. This illustrates the importance of schools in supporting and providing information, especially when it comes to students making educational choices and career plans. Therefore, schools have a vital role to play in providing information and support about educational choices, as well as in fostering students' career decision-making self-efficacy.

However, it is debatable that although the support and information provided by the school have a positive impact on students' willingness to apply, the quality and timeliness of the information also need to be considered. Research by Coenen et al. (2021) suggests that an individual's economic preferences and personality traits may also influence educational choices. Therefore, when developing education policies and providing support, schools and policy makers need to take into account individual differences and needs to ensure that the information and support provided meets the needs of different student populations. Future research can also further explore the impact of different types of support and information on the willingness of different groups of students to Apply, in order to develop more effective educational policies and practice strategies.

4.3 The Mediating Role of Career Decision-Making Self-Efficacy in the Influence of Educational Choice on the Willingness to Apply

The study shows that career decision-making self-efficacy plays an important role as a mediator between higher vocational college students' educational choice and their willingness to apply. Muturi and Wangeri (2022) Found that there is a positive correlation between career decision-making self-efficacy and career choice in strong and weak scientific self-efficacy dimensions, which shows the importance of career decision-making self-efficacy to students' career choice. At the same time, other studies have pointed to incremental predictive power between career decision self-efficacy and career decision ambiguity tolerance (Storme et al., 2017), This further strengthens the discussion on the mediating role of career decision-making self-efficacy between educational choice and the intention to apply for an examination.

Through mediating test analysis, our results support the hypothesis that career decision-making self-efficacy mediates the impact of educational choice on enrollment intention, consistent with Baron and Kenny (1986). Three-step mediation verification is proposed. This means that students' confidence in their own career decision-making ability can indirectly affect their willingness to apply. However, it is important to note that there may be differences between the results of different studies. For example, Betz et al. (1996) argued that career decision self-efficacy reflects an individual's beliefs about executive success and career decision making, which is slightly different from our view. This difference may be due to differences in research methods and sample characteristics and deserves further study in the future.

The findings of Jiang et al. (2022) further support this view, noting that career decision self-efficacy mediates between parental autonomy support and academic engagement. At the same time, research by Ebner et al. (2018) shows that individual beliefs of internal control are positively associated with professional self-efficacy, which further strengthens our argument. These findings together support the role of career decision-making self-efficacy as a mediator in the impact of educational choice on the willingness to apply. At the same time, understanding the role of career decision-making self-efficacy as a mediator between education choice and the willingness to apply oneself for has important reference value for the enrollment management department of higher vocational schools. This will help them to design more targeted recruitment strategies, improve students' willingness to apply, and better meet the needs of society for high-quality talents.

4.4 The Application of Prospect Theory in the Field of Educational Choice Research

By studying the educational choice dilemma of higher vocational students in Guangdong Province, China, we find that prospect theory provides a unique perspective for understanding students' educational choice decision. The prospect theory proposed by Kahneman and Tversky (1979) emphasizes people's sensitivity to potential

gains and losses, which is particularly critical in the educational selection process. When students are faced with different school and professional choices, they often make decisions based on a framework of possible outcomes, and this framing effect plays an important role in their choices. Falk et al., 2023).

Especially in the context of higher vocational students, academic quality and employment prospects are primary considerations. Prospect theory suggests that students may be more concerned about the possible negative consequences of their educational choices, such as professional maladjustment or employment difficulties, and that this concern may influence their eventual choice of school and profession (Hameleers, 2021). Through the framework of prospect theory, we can understand the psychological process of students in education choice more comprehensively, and provide a theoretical basis for formulating more targeted enrollment strategies. This is of practical significance for higher vocational school enrollment management departments, to help them better understand students' preferences in educational choice decision making, and improve enrollment effect.

However, while prospect theory provides theoretical insight, its application to educational choice research also faces some challenges. For example, prospect theory ignores the fact that individual attitudes to uncertainty and risk may vary from person to person, and that consideration of such differences may enrich our understanding of educational choice decisions. Carleton et al., 2012; Weber & Hsee, 1998). In addition, prospect theory does not take into account other psychological factors, such as individual interests, values and social background, which may also play an important role in educational choice decision-making.

Therefore, although prospect theory provides us with an important theoretical perspective, other psychological factors need to be considered comprehensively when applying it to practical educational choice research, and the influence of individual differences on educational choice needs to be explored more deeply.

5. Conclusion

The results show that career decision-making self-efficacy plays a key role in higher vocational college students' educational choice and their willingness to apply. This means that students' ability and confidence in their own self-efficacy in career decision-making is critical to students' educational choices. Vocational college students should believe that they can make a wise choice of education, which is not only related to the future career development of students, but also related to students' personal career satisfaction and sense of accomplishment. Therefore, vocational colleges and enrollment management departments need to take measures to cultivate, strengthen and guide students' career decision-making self-efficacy.

Although this study has made some useful findings, there are still some issues to consider. This study uses a quantitative research method, through the use of questionnaires to collect the respondents' views, opinions, experiences and other information about research topics or variables. Respondents provide information by choosing predefined answers or free answers. Questionnaire investigation approach is an effective way to obtain a lot of quantitative data. But there can also be problems such as measurement errors and methodological bias. The choice of these methods depends on the research question, the availability of data, and the research objectives of the researcher. Therefore, it is suggested that future research should pay attention to the complexity of research issues, choose appropriate methods or combine multiple methods to reveal the mechanism behind higher vocational students' educational choice more comprehensively.

6. Recommendations for Future Research

The findings of this study provide some useful enlightenment to the policy and practice of higher vocational education. It is suggested that higher vocational education institutions and policy makers in China should focus on cultivating students' career decision-making self-efficacy and improving students' confidence and ability in career decision-making. This can be achieved through the provision of career counseling, which vocational schools and educational institutions can offer to help students better understand their interests, values and career goals; Vocational colleges can also provide mental health support to help students deal with anxiety and stress that may arise when making career decisions; The enrollment management department of higher vocational colleges can provide more practical experience activities for higher vocational students, including professional experience activities, professional volunteer activities and practical professional experience activities. Help students better understand the professional career field.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Obtained.

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The Publication Ethics Committee of the Canadian Center of Science and Education.

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Data sharing statement

No additional data are available.

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