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An Investigation on Influential Factors on Students' Perceived Employability in Higher Education, Guangzhou, China

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Abstract

Purpose: This study aims to explore the impacting factors of the perceived employability of graduates from a vocational college in Guangzhou, China. **Research design, data, and methodology:** The researchers designed a 12-week IDI intervention plan. Firstly, interviews were conducted with graduates before the IDI stage, and the required qualitative data and quantitative data from 30 graduates were collected through a questionnaire. Then, using a questionnaire that has undergone reliability and validity testing to distribute the questionnaire to 517 vocational college graduates. Finally, design and implement an IDI intervention plan to compare the changes in the levels of each variable between Pre-IDI and Post-IDI through paired sample t-tests. **Results:** Multiple linear regression analysis shows that career self-management, proactive personality, self-efficacy, and core self-evaluation have a significant impact on the perceived employability of vocational college graduates, while protean career orientations have no significant impact on the perceived employability of vocational college graduates. The results of the paired sample t-test showed significant differences in career self-management, proactive personality, self-efficacy, core self-evaluation, and perceived employability levels among vocational college graduates between pre-IDI and post-IDI. **Conclusions:** The IDI intervention program used in this study effectively improved career self-management, proactive personality, self-efficacy, core self-evaluation, and perceived employability levels of vocational college graduates.

Keywords : Career Self-Management, Proactive Personality, Self-Efficacy, Core Self-Evaluation, Perceived Employability

JEL Classification Code: I23, J28, L2

1. Introduction

College graduates are a very important part of the employment force; their employment affects the hearts of millions of families. In 2022, the number of Chinese university graduates was 10.76 million, breaking the 10 million marks for the first time. In 2023, the number of Chinese university graduates reached 11.58 million, an increase of 820,000 compared to 2022, setting a historic high. The increase in the number of people has pressured college graduates to find jobs. Affected by COVID-19 and the changes in the international situation, many industries and enterprises have encountered difficulties for some time, and the pressure of economic development is great, which weakens the demand for employees of enterprises.

As an important component of China's higher education institutions, vocational colleges are responsible for cultivating highly skilled talents needed for production, construction, service, and management on the front line and play an immeasurable role in China's economic development. According to data from the Ministry of Education, as of June 15, 2023, there are 3072 higher education institutions in China, including 1545 vocational colleges. Vocational colleges occupy half of China's higher education, with 4.7 million graduates.

Being the important group about to enter the job market, the employment issues of vocational college graduates have also received high attention. Wilton (2012) found that improving graduates' employment ability positively correlates with their employment outcomes. However, the

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factors that affect the successful employment of graduates involve their employability and their personal views on their own employability. Fugate et al. (2004) found that employees who perceive their employability to be high can effectively cope with job insecurity because they may perceive other job opportunities, have a positive view of obtaining, maintaining, or changing jobs, and can implement them in job search actions. For vocational college graduates, many factors affect their successful and high-quality employment. External factors are one aspect, and their internal factors also play a crucial role. Among them, their objective employability and perception of their employability will affect their employment. Most of the research on the employability of Chinese college students focuses on the objective aspects and external environment of their employability. There needs to be more exploration of the subjective factors that affect their employability, and there is even less research on Chinese vocational college graduates. Given that psychological factors are important factors that cannot be ignored in influencing individual behavior, this study aims to explore the influencing factors of perceived employability among graduates from a vocational college in Guangzhou, China, and find effective intervention plans.

2. Literature Review

2.1 Perceived Employability (PE)

Perceived employability refers to an individual's perception (or subjective evaluation) of their likelihood (or opportunity) of obtaining and maintaining employment (Berntson & Marklund, 2007; Vanhercke et al., 2014). Álvarez-González et al. (2017) argue that perceived employability refers to a person's subjective perception of their ability to obtain, maintain, and acquire a new job. Wittekind et al. (2010) conducted an empirical test on the influencing factors of employability. They found that an individual's level of education, support for skills and career development, skill levels related to their current job, and willingness to change jobs can significantly predict perceived employability. The relationship between perceived employability and individual job insecurity and stress can be explained by Lazarus and Folkman's (1984) stress cognitive assessment theory. This theory assumes that whether an individual views their environment (such as graduates looking for jobs or organizations announcing layoffs) as a challenge or threat depends on their perception and assessment of the current situation in their environment. If an individual has coping strategies, they have a sense of control over the environment and will not feel unsafe at work. Therefore, the current environment does not pressure or threaten them. Contrary cognition and evaluation will lead to opposite results. From this, it can be inferred that individuals who believe in their employability will feel that the situation is not very dangerous. Therefore, they will not feel nervous or anxious or will feel less nervous and anxious. They can devote more psychological resources to finding a job and are likely to find a job they are satisfied with. The study by Cuyper et al. (2008) and Berntson and Marklund (2007) also empirically demonstrated the impact of perceived employability on health, happiness, life satisfaction, and other factors. It is necessary to understand better the influencing factors of perceived employability to promote the smooth employment of vocational college graduates. That is to say, the likelihood that vocational college graduates believe they can find a job that meets their qualifications will significantly impact their job search confidence and action.

2.2 Career Self-Management (CSM)

Successful career development requires more career self-management, especially in the constantly changing environment of society. Early and effective career self-management can enable individuals to cope with challenges and have higher life and job satisfaction. CSM has a strong foundation in occupational psychology. Phillips and Blustein (1994) believe that CSM can prepare for career choices, including career exploration, career planning, decision-making, and other processes. Greenhaus et al. (2010) defined career self-management as the process by which an individual sets career goals and related strategic plans tailored to their circumstances and implements and monitors these goals and strategic plans. King (2004) believes that CSM is a dynamic process in which individuals make a series of career plans and behaviors to influence employers to make decisions that benefit their career development. The study by Wilhelm and Hirschi (2019) confirms that CSM is an important predictor of occupational well-being. It can predict an individual's subjective well-being (such as career satisfaction, perceived employability, work engagement, and life satisfaction) and predict some objective gains (such as salary and promotion). Jackson and Wilton (2017) collected relevant research data through online surveys from 480 undergraduate students from UK and Australian universities, respectively. The research results indicate that CSM can have an impact on perceived employability, as proposed in a hypothesis:

H1: Career self-management has a significant impact on perceived employability.

2.3 Proactive Personality (PP)

Proactive personality, also known as prospective personality, is a concept first proposed by organizational behaviorists Bateman and Crant (1993) when exploring the proactive components of organizational behavior. Bateman and Crant (1993) defined proactive personality as an individual's inherent tendency to take proactive actions to change their external environment without being constrained by situational resistance. Individuals with proactive personalities can identify opportunities, take action, and persevere until they achieve their goals. People who lack proactive personalities are negative and passive and are accustomed to adapting to the environment rather than actively changing. Thompson (2005) found that individuals with initiative can better complete important tasks, exhibit more proactive behavior, better manage their careers, and achieve career success. Bateman and Crant (1993) on the characteristics of employees changing work situations when studying proactive behavior. For example, employees with a proactive personality will clarify the organization's goals again to achieve more challenging goals. They will proactively adjust their socialization process to enhance their work experience and abilities (Ashford & Black, 1996). Lambert et al. (2006) and Thompson (2005) found that proactive personality positively predicts individuals' proactive behavior in building social networks. There are varying degrees of positive impacts on individuals' proactive socialization behavior, control behavior, innovative behavior, problem prevention, and constructive feedback. Parker et al. (2006) found that proactive personality can directly impact proactive behavior, while Major et al. (2006) found that proactive personality can also indirectly impact proactive behavior through role breadth self-efficacy, job search self-efficacy, and other factors. Wang et al. (2021) used resource conservation theory as the research foundation. They found through a survey of 903 Chinese university students how a proactive personality affects their career adaptation ability and career growth potential. This study provides a more favorable explanation for developing the career adaptability of Chinese university students and realizing their career growth potential. Thus, a hypothesis is indicated:

H2: Proactive personality has a significant impact on perceived employability.

2.4 Self-Efficacy (SE)

Self-efficacy refers to a person's firm belief in their ability to perform certain actions and achieve the desired results (Bandura, 1977). Yang et al. (2023) found that self-efficacy plays a crucial role in the confidence of individuals in their ability to act and persevere when facing challenges in life. Kanfer et al. (2001) found that individuals with high levels of self-efficacy often respond to difficulties and challenges in daily life with confidence. For those in the job search process, having this positive self-belief is very beneficial for their job success. Nauta et al. (2009) studied Dutch people and found a positive correlation between an individual's role breadth self-efficacy and employability. That is, if an individual's role breadth self-efficacy level is high, their employability level will be relatively high. The role breadth self-efficacy here refers to the level of confidence an individual possesses in a role capable of fulfilling and surpassing the traditional level of technical proficiency. Moynihan et al. (2003) designed a longitudinal study. They found that individuals with high job self-efficacy could receive more offers when searching for a job and more offers from their desired employers. Job seekers with high confidence levels have a better chance of obtaining job offers after the interview. Berntson et al. (2008) found that an individual's perceived employability is closely related to self-efficacy. Ngo et al. (2017) studied 414 working adults in Hong Kong, China, and found a positive correlation between self-efficacy and perceived employability. Individuals with higher levels of self-efficacy tend to have higher levels of perceived employability. There is a positive correlation between self-efficacy and job-seeking behavior, which plays a crucial role in the employment of college graduates. Thus, a hypothesis is indicated:

H3: Self-efficacy has a significant impact on perceived employability.

2.5 Core Self-Evaluation (CSE)

The term "core self-evaluation" originates from evaluation theory and belongs to the category of evaluation theory. It refers to an individual's initial understanding of their abilities and values and is a fundamental positioning and overall evaluation of their specific position in the field. Core self-evaluation is a relatively new concept of personality, first proposed by Packer (1985). Evaluation theory suggests that core self-evaluation is the subconscious evaluation of an object, individual, or event by an individual based on their self-perception. Judge (1997) delved deeper into Packer's concept of core self-evaluation based on evaluation theory, believing that the evaluation results of core self-evaluation can change an individual's psychology and behavior, presenting a different lifestyle and style from others. This study used the definition given by Judge et al. (1997): Core self-evaluation (CSE) is an individual's initial perception of their abilities and values and is a fundamental and overall evaluation of their specific position in their field. The research results of Onyishi et al. (2015) show a positive correlation between core self-evaluation level and job preparation behavior, significantly predicting an individual's

perceived employability level. Thus, a hypothesis is indicated:
H4: Core self-evaluation has a significant impact on perceived employability.

2.6 Protean Career Orientation (PCO)

Hall (1976) proposed the concept of a protean career based on the story of the early Greek mythological sea god Proteus to describe the easily changing attributes exhibited by people during their career development. Hall (1976) pointed out that a volatile career is the opposite of a traditional career, where individuals rather than organizations are responsible, with freedom and growth as core values. So, a protean career refers to a person self-managing their career. However, a protean career examines the impact of a person's frequently changing career on themselves from an external perspective (Hall, 2004) rather than exploring how individuals can proactively adjust their attitudes and behaviors, adapt to this career pattern, and achieve career success from the individual's perspective (Inkson, 2006). To make up for this deficiency, Briscoe and Hall (2006) proposed protean career orientation to describe the tendency of individuals to make autonomous career choices in today's career environment and defined protean career orientation as the tendency of individuals pursuing a protean career to achieve self-satisfaction and subjective career success by autonomously managing their careers. For example, in terms of qualitative research, Clarke (2009) analyzed the workplace narratives of middle and senior managers during career transition. The researcher found that protean career concepts are related to perceived employability. He proposed that improving perceived employability is more important than career planning. Regarding empirical research, Direnzo et al. (2015) and Lo Presti et al. (2018) demonstrated the positive impact of protean career orientation on perceived employability. Although the subjects of these studies are in different cultural contexts, belong to different occupational groups, and have very different career experiences, they all found that protean career orientation or subdimensions positively affect perceived employability. Thus, a hypothesis is indicated:
H5: Protean career orientation has a significant impact on perceived employability.

3. Research Methods and Materials

3.1 Research Framework

This study is based on four theoretical frameworks from previous studies, namely Ma and Bennett (2021), Ngo et al. (2017), Rodrigues et al. (2019), and Cortellazzo et al. (2020). Researchers have developed a new conceptual framework based on the above theoretical framework (as shown in Figure 1).

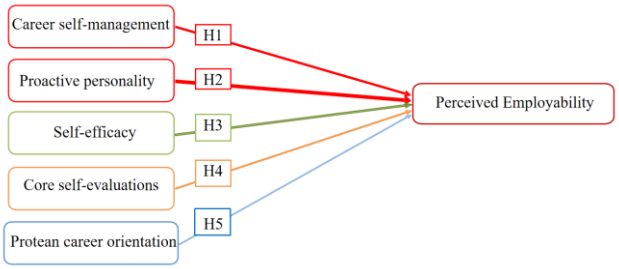

Figure 1: Conceptual Framework

H1: Career self-management has a significant impact on students' perceived employability.
H2: Proactive personality has a significant impact on students' perceived employability.
H3: Self-efficacy has a significant impact on students' perceived employability.
H4: Core self-evaluation has a significant impact on students' perceived employability.
H5: Protean career orientation has a significant impact on students' perceived employability.

3.2 Research Methodology

This study adopts a combination of qualitative and quantitative methods. In the qualitative research stage, face-to-face interviews are used to understand the perception of vocational college graduates towards their employability, using a pre-designed interview outline. In the quantitative research stage, a random sampling method is used to distribute questionnaires to graduates. Multiple linear regression analysis is performed on the collected valid data to determine which independent variables significantly impact the dependent variable. During the IDI intervention stage, paired sample t-tests were used to test the levels of each variable before and after the IDI stage to determine whether the intervention plan effectively improved the levels of each variable.

3.3 Research Population, Sample Size, and Sampling Procedures

3.3.1 Research Population

This study focuses on graduates from a vocational college in Guangzhou, which has a population of approximately 12000, including 5300 males and 6700 females. These graduates come from third-year students of 8 secondary colleges and various majors in the university.

3.3.2 Sample size

Firstly, a random sampling method was used to distribute a questionnaire to the vocational college graduates, which had undergone reliability and validity testing. A total of 517 valid questionnaires were received from the graduates.

3.3.3 Sampling Procedures

The researchers used a total of three sampling methods, as follows:

First sampling: used for reliability testing of questionnaires.

Researchers randomly selected 30 graduates from a vocational college in Guangzhou and asked them to complete a questionnaire. The collected data was used to test the reliability of the questionnaire.

Second sampling: used to test whether the five independent variables significantly impact the dependent variable.

The researchers distributed a questionnaire that passed the reliability and validity test to graduates of a vocational college in Guangzhou through random sampling. Five hundred forty graduates participated in the questionnaire survey, with 517 valid questionnaires.

Third sampling: intervention study for the IDI stage.

Researchers randomly selected 30 graduates from a vocational college in Guangzhou who were willing to participate in IDI intervention for the IDI stage intervention study.

3.4 Research Instruments

3.4.1 Design of Questionnaire

The questionnaires used in this study are based on previous relevant research and have been appropriately modified. The career self-management questionnaire is from a study by Ma and Bennett (2021) and consists of 4 items. The proactive personality questionnaire also came from a study by Ma and Bennett (2021), consisting of 3 items. The self-efficacy questionnaire comes from a study by Schwarzer and Jerusalem (1995) of 10 items. The core self-evaluation questionnaire comes from a study by Judge et al. (2003) of 12 items. The protean career orientation questionnaire comes from a study by Baruch (2014) and consists of 7 items. The perceived employability questionnaire also comes from a study by Ma and Bennett (2021), which includes three items. All research projects have passed IOC and Pilot tests.

3.4.2 Components of Questionnaire

The questionnaire in this study consists of two parts.

The first part mainly focuses on population information.

The second part measures perceived employability, career self-management, proactive personality, self-efficacy, core self-evaluation, and protean career orientation.

3.4.3 IOC Results

This study invites three experts to provide their opinions on whether the questionnaire questions can measure the content to be measured. Three experts are all Chinese and all from Ningbo University. Two of them are professors in psychology research, both holding doctoral degrees in psychology. The other expert is a professor in the field of management and holds a doctoral degree in management. During the IOC process, these three experts independently evaluated six questionnaires. Finally, after calculation, the scores of all items on the questionnaire were greater than 0.67.

3.4.4 Pilot survey and Pilot test results

Cronbach (1951) pioneered the first reliability testing technique, Cronbach's Alpha (CA). Hair et al. (2017) described internal consistency as a reliable estimate of the interrelationships between each item in the same variable. In the Pilot test, a questionnaire was distributed to 30 graduates from a vocational college in Guangzhou through purposive sampling, and the reliability was tested using the collected questionnaires. The results showed that all items passed the reliability test, scoring 0.7 or above. The career self-management score was 0.807, the proactive personality score was 0.748, the self-efficacy score was 0.878, the core self-evaluation score was 0.904, the protean career orientation score was 0.903, and the perceived employability score was 0.923.

Table 1: Pilot Test Result

Variables	No. of Items	Sources	Cronbach's Alpha	Strength of Association
Career self-management (CSM)	4	Ma and Bennett (2021)	0.807	Very Good
Proactive personality (PP)	3	Ma and Bennett (2021)	0.748	Good
Self-efficacy (SE)	10	Schwarzer and Jerusalem (1995)	0.878	Very Good
Core self-evaluation (CSE)	12	Judge et al. (2003)	0.904	Excellent
Protean career orientation (PCO)	7	Baruch (2014)	0.903	Excellent
Perceived employability (PE)	3	Ma and Bennett (2021)	0.923	Excellent

4. Results and Discussion

4.1 Results

4.1.1 Demographic Profile

This study first used a random sampling method to distribute questionnaires to vocational college graduates in Guangzhou, China. A total of 517 valid questionnaires were collected. Among them, there are 120 male students (23%) and 397 female students (77%); 83 (16%) graduates had work experience in student unions, while 434 (84%) graduates had no work experience in student unions; 109 (19%) graduates had work experience, while 408 (81%) graduates had no work experience. The survey data from these 517 graduates will be used to test whether the five independent variables significantly impact the dependent variable. Then, purposive sampling was used to select 30 vocational college graduates, all of whom voluntarily participated, for the IDI intervention stage study. Among them are 15 male students (50%) and 15 female students (50%). The demographic information is shown in Table 2.

Table 2: Demographic Profile

Entire Research Population (n= 517)		**Frequency**	**Percent**
Gender	Male	120	23%
	Female	397	77%
Year	Third year	517	100%
Major	Surveying and mapping geographic information technology	85	16%
	Mold design and manufacturing	98	20%
	Big data and accounting	93	18%
	Industrial and commercial enterprise management	55	10%
	Automobile marketing and service	88	17%
	Preschool education	98	19%
Student associations	None	434	84%
	Yes	83	16%
Work experience	None	408	81%
	Yes	109	19%
Total		**517**	**100%**
IDI Participants (n=30)		**Frequency**	**Percent**
Gender	Male	15	50%
	Female	15	50%
Methods of career guidance	Class teaching	30	100%
	Group guidance	0	0
	Individual guidance	0	0
Practical experience	Each year	6	20%
	Ever	12	40%
	Never	12	40%
Total		**30**	**100%**

4.1.2 Results of multiple linear regression

Researchers used multiple linear regression (MLR) to analyze the results of 517 valid survey questionnaires collected and attempted to test whether hypotheses 1-5 in the study were supported. The results of multiple linear regression analysis indicated that the five predictors explained 50.2% of the variance (R2 = .502, F(5, 511)=103, P<.001). It was found that Career self-management has a significant impact on Perceived employability (β= .28, p< .001). Proactive personality significantly impacts Perceived employability (β= .14, p=0 .004). Self-efficacy significantly impacts Perceived employability (β= .35, p< .001). Core self-evaluations significantly impact Perceived employability (β = .17, p = <.001). Protean career orientation has no significant impact on Perceived employability (β = -0.08, p = 0.072). Therefore, H1, H2, H3, and H4 are supported, but H5 is not.

Table 3: The multiple linear regression of five independent variables on perceived employability

Variables	**Standardized Coefficients Beta value**	**t-value**	**p-value**	**R^2**
Career self-management (CSM)	.280	6.90**	<.001	0.502
Proactive personality (PP)	.142	2.89*	0.004	
Self-efficacy (SE)	.346	9.10**	<.001	
Core self-evaluation (CSE)	.167	3.23**	<.001	
Protean career orientation (PCO)	-0.081	-1.80*	0.072	

Note: p-value <0.05*, p-value <0.001**

Subsequently, the researchers designed an IDI intervention plan, attempting to enhance the level of the dependent variable by improving the levels of four independent variables that significantly impact the dependent variable. The assumptions made are as follows:

H6: There is a significant mean difference in career self-management between pre-IDI and post-IDI stages.

H7: There is a significant mean difference in proactive personality between pre-IDI and post-IDI stages.

H8: There is a significant mean difference in self-efficacy between Pre-IDI and Post-IDI stages.

H9: There is a significant mean difference in core self-evaluations between pre- and post-IDI stages.

H10: There is a significant mean difference in perceived employability between pre- and post-IDI stages.

4.2 IDI Intervention Stage

The researchers designed a 12-week IDI intervention plan. Firstly, interviews were conducted with graduates before the IDI stage, and the required qualitative data and quantitative data from 30 graduates were collected through a questionnaire. Subsequently, the researchers began intervening with 30 graduates according to the designed IDI intervention plan. As shown in Figure 2.

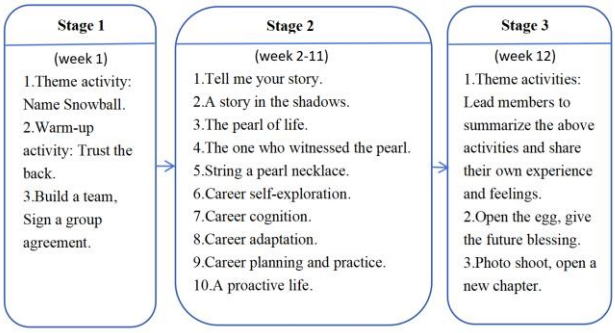

Figure 2: IDI Activities

4.3 Results Comparison between Pre-IDI and Post-IDI

Researchers used paired sample t-tests to analyze whether there were significant differences in career self-management, proactive personality, self-efficacy, core self-evaluation, and perceived employability levels among vocational college graduates before and after the IDI stage. The results are shown in Table 4:

Table 5: Paired-Sample T-Test Results

Variables	Mean	SD	p-value
Career self-management (CSM)			
Pre-IDI	3.23	0.653	0.029
Post-IDI	3.55	0.362	
Proactive personality (PP)			
Pre-IDI	2.69	0.454	<0.001
Post-IDI	3.51	0.324	
Self-efficacy (SE)			
Pre-IDI	2.69	0.804	<0.001
Post-IDI	3.50	0.337	
Core self-evaluation (CSE)			
Pre-IDI	3.10	0.372	<0.001
Post-IDI	3.51	0.324	
Perceived Employability (PE)			
Pre-IDI	2.84	0.997	0.002
Post-IDI	3.51	0.324	

The paired sample t-test results for each variable before and after the IDI stage are as follows:

There is a significant increase in career self-management at the post-IDI stage (M= 3.55, SD= 0.362) than the pre-IDI stage (M= 3.23, SD= 0.653); t(29)= -2.30, p= 0.029. The average difference is 0.32. Therefore, hypothesis 6 supports that there is a significant difference in career self-management between Pre-IDI and Post-IDI stages, which is based on P= 0.029, which is less than 0.05.

There is a significant increase in proactive personality at the post-IDI stage (M 3.51, SD= 0.324) than in the pre-IDI stage (M 2.64, SD= 0.454); t(29)= -7.78, p< 0.001. The average difference is 0.87. Therefore, hypothesis 7 supports that there is a significant difference in proactive personality between Pre-IDI and Post-IDI stages, which is based on P< 0.001, which is less than 0.05.

There is a significant increase in self-efficacy at the post-IDI stage (M= 3.50, SD= 0.337) than the pre-IDI stage (M= 2.69, SD= 0.804); t(29)= -4.64, P< 0.001. The average difference is 0.81. Therefore, hypothesis 8 is supported that there is a significant difference in self-efficacy between Pre-IDI and Post-IDI stages, which is based on P< 0.001, which is less than 0.05.

There is a significant increase in self-evaluation at the post-IDI stage (M= 3.51, SD= 0.324) than the pre-IDI stage (M= 3.10, SD= 0.372); t(29)= -4.18, P< 0.001. The average difference is 0.41. Therefore, hypothesis 9 is supported that there is a significant difference in self-evaluation between Pre-IDI and Post-IDI stages, which is based on P< 0.001, which is less than 0.05.

There is a significant increase in perceived employability at the post-IDI stage (M= 3.51, SD= 0.324) than the pre-IDI stage (M= 2.84, SD= 0.997); t(29)= -3.44, p= 0.002. The average difference is 0.67. Therefore, hypothesis 10 supports a significant difference in perceived employability between Pre-IDI and Post-IDI stages, based on P= 0.002, which is less than 0.05.

Based on the paired sample t-test results, the following conclusions can be drawn: Firstly, there are significant differences in career self-management, proactive personality, self-efficacy, core self-evaluation, and perceived employability before and after IDI intervention. Secondly, the IDI intervention program designed and implemented in this study can improve vocational college

graduates' career self-management, proactive personality, self-efficacy, and core self-evaluation, enhancing their perceived employability.

5. Conclusions, Recommendations and Limitations

5.1 Conclusions & Discussions

Scholars are conducting in-depth research on perceived employability, but there needs to be more research on Chinese college graduates and even less on Chinese vocational college graduates. This study mainly explores the influencing factors of the perceived employability of graduates from a vocational college in Guangzhou, China, through literature review, interviews, sampling surveys, regression analysis, and other methods. Firstly, through a literature review, identify five factors that may affect the perceived employability of graduates from a vocational college in Guangzhou, China, and make five hypotheses. Then, the researchers used a random sampling method to distribute reliability and validity-tested questionnaires to graduates of a vocational college in Guangzhou, China, and ultimately obtained 517 valid data. After multiple linear regression analyses, the results showed that career self-management, proactive personality, self-efficacy, and core self-evaluation significantly impacted perceived employability. In contrast, variable career orientation had no significant impact on perceived employability. Subsequently, the researchers surveyed the current status of career self-management, proactive personality, self-efficacy, and core self-evaluation levels of graduates from a vocational college in Guangzhou, China, from both quantitative and qualitative perspectives. They found that these aspects were all at a relatively low level.

Given that these aspects are important factors affecting the perceived employability of vocational college graduates, the researchers have designed an intervention plan. Finally, according to the pre-designed intervention plan, the study intervened with 30 vocational college graduates selected using the purposive sampling method and used a paired sample t-test to compare the levels of various variables before and after the intervention. The research results showed that the intervention plan designed in this study effectively improved the career self-management, proactive personality, self-efficacy, and core self-evaluation of vocational college graduates. The perceived employability level indicates that this study's intervention plan is extremely effective.

5.2 Recommendations

Incorporate career self-management for vocational college graduates into talent cultivation programs, help students develop a sense of career self-management from the beginning of enrollment, and provide effective courses and activities to intervene in students' career self-management. Starting from the first year of college, the school should arrange career assessments for students, allowing them to develop career goals and long-term plans based on the assessment results. Although this career plan often changes, through this process, students at least begin to think about their future development path, recognize the importance of classroom professional knowledge learning and the necessity of practical ability training, adjust their learning attitude, constantly enrich and improve themselves, and continuously save energy for future career development. When formulating career plans, students should clearly understand their hobbies and characteristics, weigh their strengths and social support, and rationally view the obstacles in the process of career development. Do not keep your confidence high in the future due to family constraints, parental cultural limitations, or insufficient personal abilities.

Incorporate the cultivation of proactive personality among vocational college graduates into talent cultivation programs, helping students realize the important role of proactive personality in their academic, internship, and employment processes from the moment they start learning and offering relevant courses and activities to promote the cultivation of individual proactive personality. A proactive personality is closely related to academic performance and an innovative spirit. Cultivating students' proactive personalities is beneficial for improving their career adaptability. Students with higher levels of proactive personality have stronger autonomy and initiative and will actively discover, study, and solve problems. In this way, they will not be afraid of encountering obstacles during the job search process and will find ways to solve them. The school should provide more opportunities for them to exercise, post-training information, and internship introductions and encourage them to participate actively. At the same time, they can gradually be given more challenging work and tasks, and their personal abilities and comprehensive qualities can be continuously enhanced during activities. Schools should also encourage and support college students to start businesses, establish incubation parks for entrepreneurial students, and provide suitable growth environments. For students with low proactive personalities, appropriate incentive policies should be implemented while assigning tasks to encourage them to participate in activities. Under the stimulation of rewards, they should be encouraged to actively step out of a "static" state and be able to move. They often lack self-confidence

and are afraid to express and showcase themselves. At this time, it is necessary to constantly appreciate and help them build confidence. Cultivating their resilience, setting up some setback tasks, and honing their willpower are also necessary.

Incorporate the cultivation of self-efficacy among vocational college graduates into the talent cultivation plan. As the main place for college students to live and study, the university campus has the most contact with peer groups and teachers, significantly impacting their career choices. On the one hand, schools can provide a platform for college students with low self-efficacy during their career selection period to learn and communicate with each other through linking peer group resources and indirectly learn to obtain career information that suits them. On the other hand, schools should actively organize counselors and relevant teachers to assist college students. For college students, the mastery of career information, employment rates, and employment policies by school teachers and counselors is the most comprehensive and authentic, as well as the most understanding of each student's personality traits. Therefore, based on understanding college students' characteristics, actual situation, and individual needs, counselors provide them with careful guidance, develop targeted solutions, and encourage them to approach employment positively, enhancing their self-efficacy during the employment period.

Incorporate the cultivation of core self-evaluation among vocational college graduates into talent cultivation plans, integrate the cultivation of core self-evaluation among students with curriculum learning, and timely affirm the progress of students in knowledge and skills by professional course teachers. Make students feel the teacher's affirmation and let them express their feelings of achievement and progress. College counselors and class teachers should also pay attention to the progress and achievements of students in various learning and activities and give timely recognition. For students with lower core self-evaluation, it is important to help them create opportunities for progress and success so that they can also recognize their abilities and increase their recognition of themselves.

5.3 Limitations for Future Research

This study focuses on graduates from a vocational college in Guangzhou. Due to the limitations of the research sample, the results may not apply to graduates from other vocational colleges in Guangdong Province, making it difficult to generalize them to graduates from other provinces of China. The intervention plan adopted may not necessarily be promoted. So, future research can expand the sampling range to make the samples nationally representative so that the research conclusions and intervention plans will have more practical significance.

The study's Sampling and data analysis methods can be further optimized and supplemented. Considering factors such as gender, urban-rural differences, whether they are only children, parental education level, and family socio-economic status, they may all affect an individual's career self-management, proactive personality, self-efficacy, core self-evaluation, and perceived employability. Therefore, in subsequent research, these factors should be considered, and more data analysis methods should be used to facilitate deeper exploration and find better intervention plans, which can more effectively promote the smooth employment of graduates.

The intervention plan used in the study was improved based on numerous research plans. Although it effectively improved the level of variables in this study, it still needs to be further optimized. For example, mindfulness training can be added to enhance individuals' cognition and feelings and reduce anxiety during graduation and job seeking. Positive training is very helpful in improving their negative emotional levels.

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