

DEVELOPMENT OF A SUSTAINABLE EQUITY STRATEGY  
FOR HIGHER VOCATIONAL EDUCATION  
IN GUANGDONG PROVINCE

GAO SHANZHU

A thesis paper submitted in partial fulfillment of the requirements for the Degree of  
Doctor of Philosophy Program in Educational Management for Sustainable Development

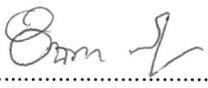
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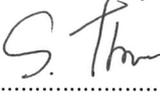
**Thesis Title** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

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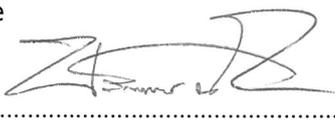
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### ABSTRACT

The objectives of this research were: 1) To study the current situation of equity in higher vocational education in Guangdong Province. 2) To develop a strategy for promoting equity in higher vocational education in Guangdong Province. 3) To evaluate the adaptability and feasibility of the strategy for promoting equity in higher vocational education in Guangdong Province. The sample group of this study includes 400 students from higher vocational colleges, five research tool evaluation experts, 12 participants in structured and focus group interviews, and five strategy evaluation experts. The research tools include questionnaires, structured interview forms, focus group interview forms, and strategy evaluation forms. Quantitative data were analyzed using statistical methods, including frequency, percentage, mean, and standard deviation, along with content analysis. For qualitative data, analytical approaches such as literature review, 4M analysis, PEST analysis, SWOT analysis, and TOWS analysis were employed.

The data analysis results indicate that the Index of Congruence (IOC) of the questionnaire is  $\geq 0.60$ , with Cronbach's Alpha of 0.82 and 0.92 for the surveys. The Kaiser-Meyer-Olkin (KMO) measure was 0.91. By combining the results of quantitative and qualitative analyses, the study identified political, economic, and social factors as the key determinants of equity in higher vocational education in Guangdong Province. Promotion strategies were developed across three dimensions-policy, economy, and

society-including 11 major strategies and 56 specific measures, such as policy support, optimizing the resource allocation mechanism, strengthening industrial support and technical cooperation, enhancing social awareness, and fostering inter-school cooperation. The average values of strategy adaptability ranged from 4.00 to 4.80, while the feasibility evaluations averaged between 3.60 and 4.80. All strategies demonstrated high or very high adaptability and feasibility. These findings will contribute to improving the equity and efficiency of resource distribution in higher vocational education, guiding policymakers and institutions in strategic planning. Furthermore, they provide a robust reference for other regions aiming to address similar challenges and enhance equitable education systems.

**Keywords:** higher vocational education, educational equity, Guangdong Province, sustainable development, strategy

ชื่อเรื่อง	การพัฒนากลยุทธ์ความเสมอภาคอย่างยั่งยืนสำหรับ การศึกษาระดับอาชีวศึกษาในมณฑลกวางตุ้ง
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### บทคัดย่อ

วัตถุประสงค์ของการวิจัยครั้งนี้ คือ 1) เพื่อศึกษาสถานการณ์ปัจจุบันของความเสมอภาคในการศึกษาระดับอาชีวศึกษาในมณฑลกวางตุ้ง 2) เพื่อพัฒนากลยุทธ์ในการส่งเสริมความเสมอภาคในการศึกษาระดับอาชีวศึกษาในมณฑลกวางตุ้ง และ 3) เพื่อประเมินความสามารถในการปรับตัวและความเป็นไปได้ของกลยุทธ์ในการส่งเสริมความเสมอภาคในการศึกษาระดับอาชีวศึกษาในมณฑลกวางตุ้ง กลุ่มตัวอย่างของการศึกษานี้ประกอบด้วย นักศึกษาจากวิทยาลัยอาชีวศึกษา 400 คน ผู้เชี่ยวชาญด้านการประเมินเครื่องมือวิจัย 5 คน ผู้เข้าร่วมการสัมภาษณ์แบบมีโครงสร้างและการสัมภาษณ์กลุ่มเป้าหมาย 12 คน และผู้เชี่ยวชาญด้านการประเมินกลยุทธ์ 5 คน เครื่องมือในการวิจัย ได้แก่ แบบสอบถาม แบบสัมภาษณ์แบบมีโครงสร้าง แบบสัมภาษณ์กลุ่มย่อย และแบบประเมินกลยุทธ์ ข้อมูลเชิงปริมาณถูกวิเคราะห์โดยใช้วิธีทางสถิติ ได้แก่ ความถี่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการวิเคราะห์เนื้อหา ส่วนข้อมูลเชิงคุณภาพถูกวิเคราะห์โดยใช้วิธีต่างๆ เช่น การทบทวนวรรณกรรม การวิเคราะห์ 4M การวิเคราะห์ PEST การวิเคราะห์ SWOT และการวิเคราะห์ TOWS

ผลการวิเคราะห์ข้อมูลพบว่า ค่าดัชนีความสอดคล้องระหว่างข้อคำถามกับจุดประสงค์ (IOC) ของแบบสอบถามมีค่าตั้งแต่ 0.60 ขึ้นไป โดยมีค่าความเชื่อมั่น (Cronbach's Alpha) มีค่าอยู่ระหว่าง 0.82 และ 0.92 และค่าดัชนี Kaiser-Meyer-Olkin (KMO) เท่ากับ 0.91 จากการผลของการวิเคราะห์ผลทั้งเชิงปริมาณและเชิงคุณภาพ การศึกษานี้ได้ระบุปัจจัยทางการเมือง เศรษฐกิจ และสังคมเป็นปัจจัยสำคัญที่มีผลต่อความเท่าเทียมในระบบการศึกษาสายอาชีพระดับสูงในมณฑลกวางตุ้ง กลยุทธ์ส่งเสริมความเท่าเทียมได้ถูกพัฒนาภายใต้ 3 มิติ ได้แก่ นโยบาย เศรษฐกิจ และสังคม โดยประกอบด้วย 11 กลยุทธ์หลักและ 56 มาตรการเฉพาะ อาทิเช่น การสนับสนุนนโยบาย การปรับปรุงกลไกการจัดสรร

ทรัพยากร การเสริมสร้างการสนับสนุนจากภาคอุตสาหกรรมและความร่วมมือทางเทคนิค การเพิ่มความตระหนักในสังคม และการส่งเสริมความร่วมมือระหว่างสถาบันการศึกษา ค่าเฉลี่ยของการประเมินความเหมาะสมของกลยุทธ์มีช่วงตั้งแต่ 4.00 ถึง 4.80 ในขณะที่ค่าเฉลี่ยของการประเมินความเป็นไปได้มีช่วงตั้งแต่ 3.60 ถึง 4.80 ซึ่งแสดงให้เห็นว่ากลยุทธ์ทั้งหมดมีความเหมาะสมและความเป็นไปได้ในระดับสูงหรือสูงมาก. ผลการศึกษานี้จะมีส่วนช่วยยกระดับความเท่าเทียมและประสิทธิภาพในการจัดสรรทรัพยากรในระบบการศึกษาสายอาชีพระดับสูง โดยเป็นแนวทางสำคัญสำหรับผู้กำหนดนโยบายและสถาบันต่างๆ ในการวางแผนกลยุทธ์ นอกจากนี้ยังเป็นข้อมูลอ้างอิงที่มีคุณค่าสำหรับภูมิภาคอื่นๆ ที่ต้องการแก้ไขปัญหาความเท่าเทียมและพัฒนาระบบการศึกษาให้มีความเป็นธรรมมากยิ่งขึ้น

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Gao Shanzhu

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# Chapter 1

## Introduction

### Rationale

As a fundamental issue related to the future development of a country, educational equity is not only an important foundation for social equity but also an important basis for decision-making on higher vocational education. Globally, the pursuit of educational equity has always been the focus of contemporary society, and most countries have included it in their important agendas. The United Nations General Assembly clearly stipulates in Article 26, paragraph 1 of the Universal Declaration of Human Rights (United Nations, 1948) : "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and vocational education shall be generally available. Higher education shall be equally accessible to all based on merit." The International Covenant on Economic, Social and Cultural Rights (United Nations, 1966) recognizes the right of everyone to equal education as a fundamental human right, believing that its basis stems from the inherent dignity and equality of human beings and the inherent connection between this right and other basic human rights.

Although educational equity is an important foundation for social equity, educational inequality still exists widely in reality, bringing many negative impacts on individuals and society. Studies have shown that educational inequality is negatively correlated with residents' sense of happiness, especially for families with children (Zhu Jianwen & Huang Zhendong, 2020). Educational inequality leads to a decline in overall social welfare by restricting educational opportunities and increasing income disparity. It also widens the educational opportunities and economic gap between high-income and low-income groups, hinders social mobility, and exacerbates class solidification (Wang Chuhui, 2020). In addition, the unequal distribution of education is closely related to economic capital and cultural capital, gradually becoming

implicit and spreading between generations, further solidifying social domination relations and hindering social equity and sustainable economic development (Guo Dandan, 2019).

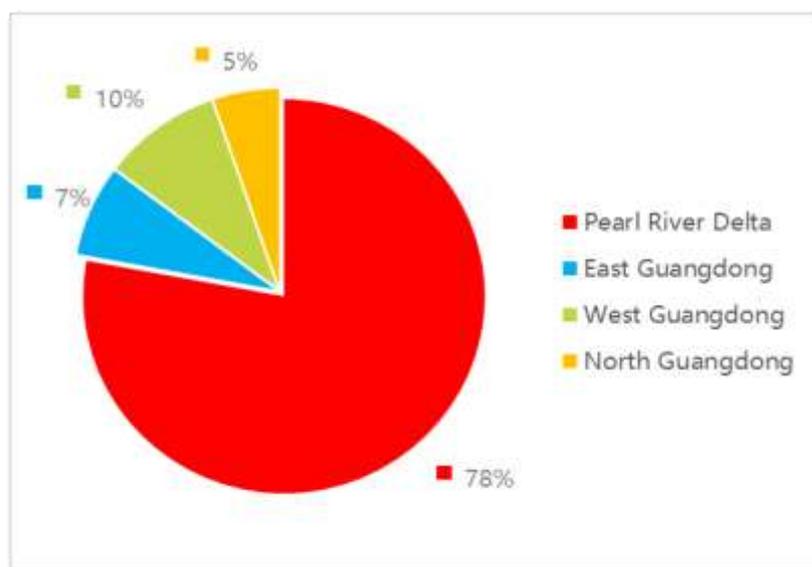
In this context, China is also working hard to achieve this goal as a country that values educational equity. Over the past 70 years since the founding of the People's Republic of China, China's education system has undergone tremendous changes and development, reflecting China's unremitting pursuit of educational equity. From the proposal of "opening up education to workers and farmers" in the early days of the founding of the People's Republic of China to the 21st century "National Medium- and Long-Term Education Reform and Development Plan (2010-2020)" (Ministry of Education, 2010) proposed "promoting educational equity as the basic national education policy" and "improving quality as the core task of education reform and development." China's education system has made great progress, and China's educational equity situation is constantly improving. From the rampant illiteracy in the past to the basic popularization of compulsory education and then to the establishment of a multi-level education system covering junior high school, high school, vocational education, etc., the number of college students ranks first in the world, and the average years of education per capita have increased from 1.6 years in 1949 to 10.9 years in 2022. These data fully reflect the great progress of China's education cause and China's historic achievements in promoting educational equity.

Among them, vocational education, as an important part of the education system, has a far-reaching impact on social equity and economic development and has received increasing attention in recent years. The Opinions on Promoting the High-quality Development of Modern Vocational Education (General Office of the CPC Central Committee and the State Council, 2022) clearly states: "As an important part of the national education system and human resources development, vocational education shoulders the important responsibilities of cultivating diverse talents, inheriting technical skills, and promoting employment and entrepreneurship. " Compared with general education, vocational education pays more attention to the cultivation of practical skills and the improvement of application capabilities, which is

closely related to the needs of the actual industry and the employment market. In the context of the current economic structure adjustment and industrial upgrading, the status and role of vocational education are more prominent. The newly revised Vocational Education Law of the People's Republic of China (CPC Central Committee and the State Council, 2022) clearly states: "Vocational education is an education type that has the same importance as general education." Although vocational education is highly valued at the level of laws and regulations, there is a certain imbalance in its development. For a long time, some places have regarded vocational colleges as a "low-end version" of general education, and there is a phenomenon of emphasizing general education and neglecting vocational education. This misunderstanding has led to discrimination and prejudice against higher vocational education in some local governments, which have tilted educational resources toward other types of education. Compared with undergraduate education, the per capita funding standard for higher vocational education is much lower than that for undergraduate education. Some vocational colleges run vocational education in the same way as general education, with insufficient investment in management, teachers, and teaching facilities, as well as serious lags in curriculum setting and teaching models, which has led to a decline in teaching quality and a mismatch between the students trained and market demand.

However, specifically in Guangdong Province, there are still many problems with the equity of its higher vocational education. These problems are mainly manifested in the imbalance in layout, investment, resource allocation, and talent training results. an unbalanced layout, unbalanced investment, unbalanced possession of educational resources, and unbalanced talent training, which results in This series of problems is affected by multiple factors, including differences in politics, economy, science and technology, population, culture, etc., between regions, as well as common factors such as the country's macro-political system, economic system, higher education management system and policy, and economic development strategy, as well as individual factors such as the natural resource endowment, economic development level, economic structure, and population of the prefecture-level city itself.

First, the unbalanced in the layout of higher vocational education in Guangdong Province is obvious. According to the Annual Report on the Quality of Higher Vocational Education in Guangdong Province (Guangdong Provincial Department of Education, 2023a), by the end of 2022, there were 95 independent higher vocational colleges in Guangdong, of which 74 were in the Pearl River Delta, accounting for 78 %; 7 were in the eastern Guangdong region, accounting for 7 %; 9 were in the western Guangdong region, accounting for 10%; and five were in the northern Guangdong region, accounting for 5%. Data show that the number of higher vocational colleges and educational resource allocation in economically developed regions in the Pearl River Delta, such as Guangzhou and Shenzhen, far exceeds that in the economically underdeveloped eastern, western, and northern Guangdong, and the development of higher vocational education is more mature, while the conditions for higher vocational education in the eastern, western and north Guangdong are relatively poor, with a limited number of schools, insufficient teaching facilities, and teaching staff. This imbalance in educational resources within the region directly affects the equity of higher vocational education in Guangdong Province. See Figure 1.1 for the distribution of higher vocational colleges in Guangdong Province.



**Figure 1.1** Distribution of Higher Vocational Colleges in Guangdong Province  
(Guangdong Provincial Department of Education, 2023a)

Secondly, the imbalanced investment in higher vocational education in Guangdong Province is also a prominent problem. Some regions have unreasonable guidance in the allocation of higher vocational education resources and have failed to fully reflect the concept of educational equity. The Pearl River Delta region has a higher proportion of vocational education funding than the eastern, western, and northern regions of Guangdong. This unequal policy and unbalanced investment have led to an uneven distribution of educational resources, exacerbating the imbalance in development between higher vocational colleges in different regions and between different higher vocational colleges in the same region. The imbalanced investment in higher vocational education in Guangdong Province not only affects the quality of education but also affects students' learning opportunities and development prospects.

Thirdly, the differences in economic development levels and industrial structures in various parts of Guangdong Province are also important reasons for the imbalance of educational resources. According to the Guangdong Development Blue Book: Guangdong Development Report (Development Research Center of Guangdong Provincial People's Government & Zhong Xuanhui, 2023), economically backward regions lack sufficient financial support and educational resources, making it difficult to provide good policies and sufficient financial support for the development of higher vocational education. This phenomenon is particularly prominent in the economically underdeveloped areas of eastern, western, and northern Guangdong, which restricts the development of local higher vocational education.

Finally, the uneven talent training results of higher vocational education in Guangdong Province is also a realistic problem. According to the Annual Report on the Quality of Higher Vocational Education in Guangdong Province (Department of Education of Guangdong Province, 2023a), there are large differences in the teaching quality and talent training level of vocational education in different regions. In the economically underdeveloped areas of eastern, western, and northern Guangdong, graduates face greater challenges in the job market, which affects their employment and career development prospects.

Therefore, an in-depth exploration of the causes of equity issues in higher vocational education in Guangdong Province and proposing sustainable solutions are of great practical significance for promoting educational equity. Only by deeply analyzing the reasons for this unbalanced situation and formulating corresponding policies and measures can we promote the balanced development of higher vocational education in Guangdong Province, the equitable distribution of educational resources, and ensure that students can enjoy equal educational opportunities.

### **Research Question (s)**

1. What is the current status of equity in higher vocational education in Guangdong Province?
2. What are the strategies to promote sustainable equity in higher vocational education in Guangdong Province?
3. What is the adaptability and feasibility of the strategy to promote sustainable equity in higher vocational education in Guangdong Province?

### **Objective (s)**

1. To study the current situation of equity in higher vocational education in Guangdong Province.
2. To develop the strategy for promoting equity in higher vocational education in Guangdong Province.
3. To evaluate the adaptability and feasibility of the strategy for promoting equity in higher vocational education in Guangdong Province.

### **Research Hypothesis/ Hypotheses**

1. The implementation of a series of targeted policies and measures can effectively improve the equity of higher vocational education in Guangdong Province.
2. Political, economic, and social factors such as government and school policies, regional economic development levels, and social recognition have an

important impact on the equity of higher vocational education in Guangdong Province.

3. Factors such as government and school policies, regional economic development level, and social recognition are key independent variables affecting the equity of higher vocational education in Guangdong Province.

## **Scope of the Research**

### **Population and the Sample Group**

#### **Population**

This study adopts a stratified sampling method. First, Guangdong Province is divided into four regions: the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong, according to geographical location and political, economic, and cultural factors; secondly, two higher vocational colleges are selected from each of the four regions, and the total number of higher vocational colleges selected is 8. Among them, the schools selected from the Pearl River Delta region are Shenzhen Polytechnic and Guangdong Light Industry Polytechnic, the schools selected from the East Guangdong region are Jieyang Polytechnic and Shanwei Polytechnic, the schools selected from the West Guangdong region are Yangjiang Polytechnic and Maoming Polytechnic, and the schools selected from the North Guangdong region are Heyuan Polytechnic and Qingyuan Polytechnic.

The population of this study was 142,051 students, 5,971 teachers, and 2,474 administrators from Shenzhen Polytechnic, Guangdong Light Industry Polytechnic, Jieyang Polytechnic, Shanwei Polytechnic, Yangjiang Polytechnic, Maoming Polytechnic, Heyuan Polytechnic, and Qingyuan Polytechnic.

#### **The Sample Group**

##### **1. Sample Questionnaire**

According to the sampling table of K Rejcie & Morgan (1970), this study's sample consists of 384 students from 8 vocational colleges in the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong regions of Guangdong Province. The researchers increased the sample size to 400 students to improve the

reliability and accuracy of the questionnaire data. The questionnaire sample group table is shown in Table 1.1.

**Table 1.1** Survey sample group table

Area	School Name	Number of students	Sample group
Pearl River Delta	ShenZhen Polytechnic	33475	94
	GuangDong Industry Polytechnic	25794	72
Eastern	JieYang Polytechnic	8260	23
Guangdong	ShanWei Polytechnic	9786	28
Western	YangJiang Polytechnic	12725	36
Guangdong	MaoMing Polytechnic	17599	50
Northern	HeYuan Polytechnic	17664	50
Guangdong	QingYuan Polytechnic	16748	47
<b>Total</b>		<b>142051</b>	<b>400</b>

## 2. Structured interview and focus group interview sample group

The subjects of structured and focus group interviews in this study are the same. A purposive sampling method was adopted to select eight full-time teachers and eight administrative staff from 8 higher vocational colleges. The sample group table of structured and focus group interviews is shown in Table 1.2.

(1) Teachers must meet the following conditions: Associate Professor or above; More than 5 years of teaching experience or student management experience in higher vocational colleges.

(2) Administrative personnel must meet the following conditions: deputy department position or above; more than 5 years of administrative management experience in higher vocational colleges; familiarity with government laws, regulations, and local policies on higher vocational education.

**Table 1.2** Structured interview and focus group interview sample table

Area	School Name	Focus group respondents	
		Teacher	Administrative Staff
Pearl River Delta	ShenZhen Polytechnic	1	1
	GuangDong Industry Polytechnic	1	1
Eastern Guangdong	JieYang Polytechnic	1	1
	ShanWei Polytechnic	1	1
Western Guangdong	YangJiang Polytechnic	1	1
	MaoMing Polytechnic	1	1
Northern Guangdong	HeYuan Polytechnic	1	1
	QingYuan Polytechnic	1	1
<b>Total</b>		<b>8</b>	<b>8</b>

### 3. Samples of strategy evaluation

To ensure the objectivity of the strategy evaluation, the researchers invited a deputy director of the Provincial Department of Education and one expert from each of the four major regions to evaluate the sustainable equity strategy for higher vocational education in Guangdong Province. The target group sample of evaluation experts is shown in Table 1.3.

#### **Experts must meet the following qualifications:**

- (1) Associate professor or above, or department deputy or above;
- (2) More than 10 years of work or management experience in higher vocational education;
- (3) Have scientific research achievements in the field of educational management;
- (4) Be familiar with the policy documents of the national, provincial, and municipal governments on higher vocational education, the economic development

status of various regions in Guangdong Province, and the basic situation of regional university development.

**Table 1.3** Evaluation Expert Target Group table

Area	School Name	Number of evaluation experts
provincial level (e.g., government)	Provincial Department of Education	1
Pearl River Delta	ShenZhen Polytechnic University	1
Eastern Guangdong	ShanWei Polytechnic	1
Western Guangdong	YangJiang Polytechnic	1
Northern Guangdong	HeYuan Polytechnic	1
<b>Total</b>		<b>5</b>

#### The Variable

Independent Variable

1) Politics; 2) Economy; 3) Society.

#### Dependent Variable

Sustainable equity strategy for higher vocational education in Guangdong Province.

#### Time

**Phase I** Data Collection and Literature Review (August-December 2023)

- Collect relevant information on higher vocational education in Guangdong Province, including government documents, statistical data, academic research reports, etc., to fully understand current educational equity challenges and problems. At the same time, a literature review and in-depth research on domestic and foreign theories, policies, and practices on equity in higher vocational education will be conducted to provide theoretical support and research references for subsequent research.

**Phase II** Problem Analysis and Research Design (January-July 2024)

- The literature and SWOT-PEST matrix analysis methods were used to conduct an in-depth analysis of the previous data to clarify the internal and external equity factors in higher vocational education in Guangdong Province. Based on the analysis results, a research plan was designed to determine the objects, methods, and tools of the research, and experts were invited to verify and evaluate the research tools to obtain real and detailed data and information, providing a basis for subsequent strategy formulation.

**Phase III** Data Collection and Field Research (August-September 2024)

Implement the research plan and collect data through questionnaires, interviews, etc. Communicate with students, administrative staff, and teachers of higher vocational colleges to obtain more comprehensive information and data and provide more targeted data support for the formulation of specific strategies.

**Phase IV** Strategy Development and Program Design (October 2024)

- Conduct a detailed analysis of the information and research results collected in the early stage, combine the actual situation and feasibility, formulate a strategic and effective evaluation plan that is highly operational and can effectively solve the problem, and clarify the implementation steps and goals.

**Phase V** Strategy Implementation and Effectiveness Evaluation (November 2024)

- evaluate the draft strategy's adaptability and feasibility, adjust and optimize the plan in a timely manner, ensure the strategy's implementation's effectiveness and sustainability, and provide strategic support for all parties to promote the equity of higher vocational education in Guangdong Province.

**Phase VI** Summarization of Results and Publication of Paper (December 2024)

- Summarize research results, complete paper writing, and publish the paper.

## Advantages

1. For students: It will help provide a more equitable learning and development environment for students of higher vocational colleges in Guangdong Province, improve their sense of gain and satisfaction, and promote students' better realization of their personal values and career goals, thereby enhancing their confidence and investment in education.

2. For schools: Help higher vocational colleges better plan the direction of educational development and resource allocation and improve the school's quality of education and competitiveness.

3. For Government: It provides a scientific basis and guidance for government decision-making, promotes government departments' deep understanding of and effective resolution of issues related to equity in higher vocational education, and helps to improve the government's management level and governance capabilities in the field of education.

4. For the Social: It will help to enhance the social recognition and reputation of higher vocational education in Guangdong Province. By promoting educational equity, all sectors of society will have more trust and support for developing higher vocational colleges, thereby cultivating more talents with practical ability and professional qualities for society.

## Definition of Terms

### Equity

Equity is a concept and practice that aims to ensure that everyone can enjoy equal rights and opportunities in society and institutions and not be treated inequitably due to differences in personal attributes or social status. Equity not only involves the equitable distribution of resources and opportunities but also includes the equal protection of rights and the correction of inequity phenomena.

### Educational Equity

Educational equity has two meanings: The first is equity (Equality), which ensures that personal and social factors such as gender, socioeconomic status, and

race do not prevent people from reaching the level of education allowed by their abilities. The second is inclusion (inclusion), which ensures that all people receive basic and minimum-standard education.

#### **Educational Resources**

Educational resources refer to various material and non-material conditions that affect the equity of higher vocational education in Guangdong, including but not limited to resources in terms of laws and regulations, financial appropriations, school policies, and school conditions.

#### **Politics**

The political aspect refers to the core part of the superstructure established on a specific social and economic basis, which is reflected in the legal system, administrative management, and policy system, with state power as the core. It directly affects the formation and implementation of the equity strategy of vocational education through the formulation and implementation of education laws and regulations and the allocation of educational resources.

#### **Economy**

The economic refers to the sum of social production relations, covering the production, exchange, distribution, and consumption of material resources. It determines the level of allocation of vocational education resources and the sustainable support capacity of the employment market and is the material basis for achieving educational equity.

#### **Social**

The social refers to the sum of production relations formed by human interaction, reflecting the culture, folklore, and group consciousness of human beings at a specific historical stage. Society indirectly shapes the external environment and social value of vocational education equity through its cognition and recognition of vocational education, public opinion guidance, and public support.

#### **4M analysis**

The 4M method, also known as the 4M verification method, refers to the first four English letters of the operator (Man), machinery (Machine), raw materials

(Material), and operating method (Method). These four Ms are used in the quality defect method as the four major elements. It is the most useful method in tracing the causes of poor-quality defects and engineering management.

#### **PEST analysis**

The PEST analysis method analyzes the research object from the four external macro-environmental influencing factors of politics (P), economy (E), society (S), and technology (T), explores the opportunities and threats brought to the enterprise by the external macro-environment, and provides analysis, decision-making and reference for the formulation of corporate strategy. It is a basic tool for analyzing the external environment of corporate strategy.

#### **SWOT analysis matrix**

SWOT analysis is to list the internal strengths (Strengths), weaknesses (Weaknesses), external opportunities (Opportunities), and threats (Threats) that are closely related to the research object through investigation and analysis and list them in a matrix form in a certain order, and then use the system analysis research method to match the factors with each other for analysis and research, and draw a series of corresponding conclusions

#### **TOWT matrix analysis**

TOWS matrix analysis belongs to the situational analysis method, that is, on the basis of analyzing the internal and external environment of an economic entity, various influencing factors are classified respectively, and four strategic factors of strengths (S), weaknesses (W), opportunities (O) and threats (T) can be obtained; internal strengths are combined with external opportunities, internal weaknesses are combined with external opportunities, internal strengths are combined with external threats, and internal weaknesses are combined with external threats, and then a TOWS matrix is formed; the TOWS matrix can also derive four corresponding strategic plans such as SO strategy, WO strategy, ST strategy and WT strategy, and then determine the feasible strategy for the future development of the economic entity based on the strategic plan.

### **Strategy**

Strategy refers to a significant or global plan to ensure survival and promote development. Its basic characteristics include: first, strategy is international, not only involving the arrangement of a single local or individual equity, but also related to the long-term planning of overall survival and development; second, strategy is futuristic, the focus is not on the present, but on the long-term development of the future; third, strategy is hierarchical, each level has its independent global vision and corresponding strategy; finally, strategy is stable, once determined, changes in the external environment or leadership changes do not readily change it.

### **Strategic Assessment**

Strategic evaluation refers to the evaluation and estimation of the entire strategic management process, including the comprehensive evaluation of strategy formulation, implementation, and results. It covers three stages: strategic analysis and evaluation, strategic selection and evaluation, and strategic performance evaluation. It aims to confirm strategic plans' feasibility, effectiveness, and sustainability.

### **Higher vocational education**

Higher vocational education is an important part of higher education. It is a higher vocational school education implemented to cultivate high-quality technical and skilled talents and enable the educated to have the comprehensive professional qualities and ability to act, such as professional ethics, scientific culture, professional knowledge, technical skills, etc., required to engage in a certain profession or achieve professional development.

## **Research Framework**

In this study, the research process includes three stages: the first stage is to study the current situation of equity in higher vocational education in Guangdong Province; the second stage is to formulate strategies to promote sustainable equity in higher vocational education in Guangdong Province; the third stage is to evaluate the adaptability and effectiveness of strategies to promote sustainable equity in higher vocational education in Guangdong Province. Research tools such as questionnaires,

structured interview forms, focus group interview forms, SWOT analysis matrices, TOWS analysis matrices, and evaluation forms were used. Finally, experts were invited to evaluate the adaptability and feasibility of the draft strategy and come up with the final strategy. The research framework of this study is shown in Figure 1.2.

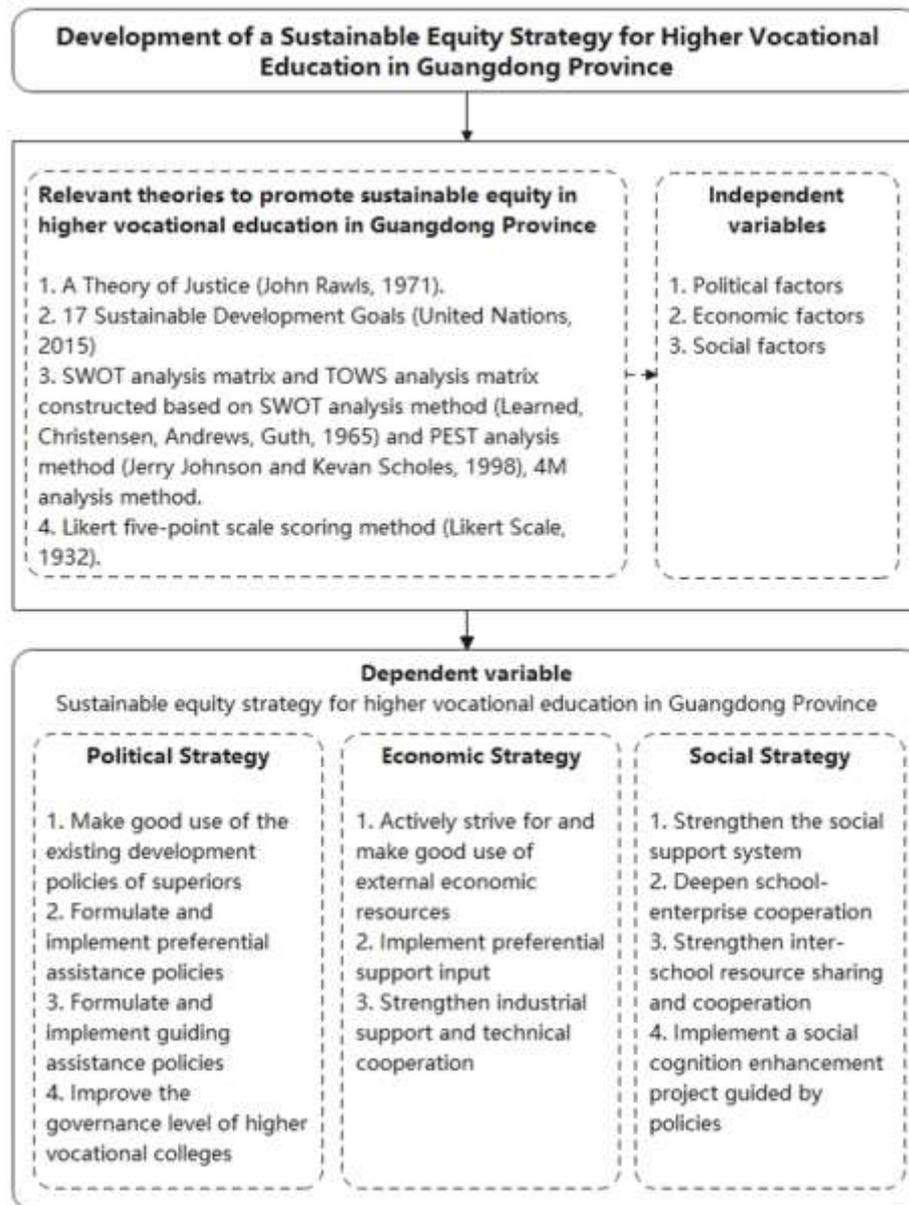


Figure 1.2 Research Framework

This study takes the sustainable equity strategy of higher vocational education in Guangdong Province as the research theme and constructs a theoretical basis and research framework. The theoretical basis includes John Rawls's (1971) "A Theory of Justice," the 17 Sustainable Development Goals (SDGs) proposed by the United Nations (2015), the SWOT analysis matrix, and the TOWS analysis matrix constructed based on the 4M analysis method, the PEST analysis method (Jerry Johnson & Kevan Scholes, 1998), and the SWOT analysis method (Learned, Christensen, Andrews, Guth, 1965). In addition, the Likert Scale (1932) is used for quantitative measurement. The study revolves around two major variables. The independent variables include the three major elements of politics, economy, and society, and the dependent variable focuses on the sustainable equity strategy of higher vocational education in Guangdong Province. Strategies covering the three dimensions of politics, economy, and society are formulated around the dependent variable. This study strives to provide a scientific basis and practical path for the equity and sustainable development of higher vocational education in Guangdong Province.

## Chapter 2

### Literature Review

This study reviewed domestic and foreign theories and research results on educational equity, educational resource allocation, higher vocational education, and other aspects through Google Scholar, CNKI, Wanfang Database, CQVIP Database, Chaoxing Database, and other platforms, and conducted a detailed review. On this basis, the researcher analyzed the literature and related research results from the following aspects.

1. Educational Equity
2. Politics
3. Economy
4. Society
5. Strategy
6. Strategic Assessment
7. Higher Vocational Education
8. Related Research
9. Literature Review Conclusion

The details are as follows.

#### Education Equity

##### Definition of Equity and Educational Equity

1. Equity

The concept of equity has a long tradition in human history and has different interpretations and applications in different fields. Since ancient Greek times, equity has been regarded as an important part of justice. Today, equity not only receives attention in ethics, sociology, economics, and education but also plays an important role in practice, especially in the fields of social policy and education.

During the ancient Greek period, Solon was the first to give equity, which means "giving a person his due." This means that in daily life, it represents the consequences of individual behavior, such as rewards and punishments; it also represents the philosophical category that belongs to the individual and himself (Liao Shenbai, 2002). Aristotle inherited Solon's idea of "deserving" and embodied it into distributive equity and corrective equity. The core of distributive equity is to give equal distribution to equals and unequal distribution to unequal people. Unequal distribution to the unequal is not an equal distribution in the arithmetic sense but a distribution in the sense of geometric proportion. The two dimensions of distribution and acceptance include four types: the first type, two people have equal conditions, but the distribution is also equal; the second type, the two people have equal conditions, but the distribution is unequal; the third type, the two people have unequal conditions, but the distribution is equal; the fourth type, the two people have unequal conditions and the distribution is also unequal. Among them, the second and third types do not comply with the principle of distributive equity. Correctional equity occurs in the interaction between people and is divided into two situations: voluntary and involuntary. (Wang Shuqin & Cao Yisun, 2008). Plato clearly pointed out in "The Republic": "Equity is justice" (Zhang Fakun, 2007).

In modern times, Western thinkers' understanding of the concept of equity is increasingly used as a moral standard to evaluate social systems and is regarded as the primary value of social systems. It has a greater influence among contemporary researchers on the concept of equity. The two principles proposed by John Rawls in his book "A Theory of Justice": The first principle is that each person has a similar freedom that is compatible with the most extensive and equal system of basic liberties that all people have. All systems should have equal rights. The second principle is that social and economic inequalities should be so arranged that they are adapted to the greatest interests of the least favored, consistent with the stockpile principles of justice, and are subject to equity and equality of opportunity. In ethics, equity is more commonly understood as equity and justice (John Rawls, 2011); in sociology, sociologists Husen and Coleman believe that the focus of equity lies in the

extent to which opportunities and rights are obtained; in economics, economist Heitman believes that the core of equity is the rationality of resource allocation (Yan Lingyan, 2021).

The development of the times has given the mark of the "equity" era. Based on the analysis of the above literature, in this study, equity is a concept and practice that aims to ensure that everyone can enjoy equal rights and opportunities in society and institutions and is not treated unequally due to differences in personal attributes or social status. Equity involves not only the equitable distribution of resources and opportunities but also the equal protection of rights and the correction of injustices.

## 2. Educational Equity

The concept of educational equity occupies an important place in academia and policymaking. In academia, Hu Sen's understanding of the connotation of educational equity has had a wide impact, and he proposed three major categories of educational equity, namely starting point, process, and outcome equity. Starting point equity means that everyone should have equal opportunities to receive education, regardless of their individual differences or family background; process equity means that individuals can be treated in the same way or based on individual needs based on individual differences. Equity treatment: equity of outcome means that equality in the academic achievement of individuals can lead to equality in socioeconomic aspects (Hu Sen & Zhang Renjie, 1987). Coleman further emphasized equality of educational opportunities as the core concept of educational equity in his study "Equality of Educational Opportunities"(James S. Coleman, 1968) and believed that everyone should have equal educational opportunities in order to fully realize their potential. Jiang Shihui (2004) proposed that educational equity refers to the educational ideal that under specific social conditions, everyone enjoys equal rights and opportunities to receive education so that their potential can be fully and freely developed. Educational equity has a profound social, political, and economic foundation, and its basic structure can be divided into macro-level and micro-level. Educational equity at the macro level includes equity in educational rights and

educational opportunities; educational equity at the micro level includes equity in curriculum, equity in teaching, and equity in educational evaluation.

Jiang Shihui (2003) believes that with in-depth research on educational equity, the current academic community has formed a relatively unified view on the connotation of educational equity, which divides educational equity into three levels: equity in the starting point of education, equity in the educational process, and equity in educational results. An equity starting point for education, that is, equal access to education, means that the state gives every citizen an equal right to education through legislation. This right guarantees that every citizen has equal access to education and the right to develop freely. This right has nothing to do with a citizen's origin, status, ethnicity, occupation, etc. It is a basic human right and a natural right of every citizen. Equity in the educational process means that students enjoy equal educational conditions such as courses, majors, teaching methods, teachers, and campus facilities when entering the education system to receive education so that every student can enjoy equity treatment in the process of receiving education. Obtain an education suitable for personal development. Equity in educational outcomes, that is, equal employment opportunities, refers to the equality of educational quality and goals in terms of students' employment achievements. Equity in educational results means that students gain corresponding knowledge and abilities by learning relevant content after entering the education system, and achieve a relative balance of success opportunities and academic performance. The starting point of equity education is the premise and foundation of the educational process and equity educational results. The equity educational process is the bridge and transition between an equity educational starting point and equity educational results. Equity educational results are the purpose of equity educational starting point and equity educational process.

At the practical level, Shi Zhongying (2008) emphasized the importance of educational equity in law, policy, and practice, believing that educational equity not only means that everyone enjoys equal educational rights but also needs to ensure that everyone is treated equally in educational activities. Have equal academic

achievement and employment opportunities. Feng Jianjun and Gao Zhan (2022) linked educational equity with social equity and believed that people-centeredness is the basis for educational equity in our country. Shan Shiliang (2022) pointed out that educational equity is the embodiment of social equity in the field of education and is an important driving force in promoting personal and social development. Fan Genping and Wang Lingling (2022) believe that educational equity is a historical category, and its connotation has evolved with social development. Educational equity in the future will highlight substantive equity and personality development.

Entering the 21st century, the Organization for Economic Cooperation and Development (OECD) gave an authoritative explanation of "education equity" in the report "No More Failure: Ten Initiatives for Educational Equity" (S. Field et al., 2007) , which contains two meanings: the first meaning is equity (Equality), which is to ensure that personal and social factors such as gender, socioeconomic status, and race do not prevent people from reaching the educational heights allowed by their abilities. The second meaning is inclusion, which is to ensure that all people receive basic and minimum standards of education.

To sum up, educational equity not only involves equal educational opportunities for everyone but also includes equity in the educational process and educational results. In theory and practice, multiple dimensions of educational equity need to be comprehensively considered to promote the overall development of individuals and society. The definition of "education equity" used in this study is the Organization for Economic Co-operation and Development (OECD)'s report on "Education Equity" in "Fail No More: Ten Initiatives for Education Equity" (S. Field et al., 2007). definition.

### **Related theories on educational equity**

#### 1. Theory of Justice

"A Theory of Justice"(John Rawls, 2001) is an important work of social and political philosophy. In this classic work, Rawls proposed his famous "justice as an act" equity" principle, and constructed a theory of social justice called the "difference principle".

John Rawls (2001) believes that justice should be based on the principle of equity, that is, all people should have equal opportunities and rights to pursue their own goals and interests. In order to achieve this goal, he proposed two basic principles: The first principle is that everyone should have an equal right to a similar system of freedoms compatible with the most extensive equal system of basic freedoms possessed by all people. The second principle is that social and economic inequalities should be so arranged that they are adapted to the greatest interests of the least favored, consistent with the stockpile principles of justice, and are subject to equity and equality of opportunity. Rawls places his theory within the framework of an imaginary "just social contract" and assumes that individuals formulate principles of social justice without knowing which class of society they will belong to in the future. This "unknown" state of love is called the "veil of ignorance."

In general, "A Theory of Justice" has very important theoretical significance and practical value, emphasizing the importance of equal rights and opportunities for everyone and promoting the most vulnerable groups in society through reasonable inequality. Interests. This theory had a profound impact on subsequent social policy and the formulation of just laws. The development of the country is not only about economic construction but also about promoting social equity and justice and promoting equitable development of education so as to continuously meet people's growing material and cultural needs (See Table 2.1).

## 2. Postmodernism

Postmodernism is a philosophical and cultural trend popular in Western society in the second half of the 20th century. The perspective of postmodernism provides a unique thinking framework for challenging the power structure and knowledge authority in the traditional education system, emphasizing the democratization and liberation of education. French philosopher Michel Foucault's theory of power and knowledge and Stanley Aronowitz's critical pedagogy, etc., represent important perspectives from the postmodernist perspective.

Liu Beicheng (1995) mentioned in his book "Portrait of Foucault's Thought" that postmodernism reflects a new understanding of equality and emphasizes a

heterogeneous view of equality. Traditionally, equality is mainly reflected in homogeneous equality, that is, using the same standard to evaluate diverse objects. Postmodernism, on the other hand, advocates a heterogeneous concept of equality, emphasizes the differences between everyone, advocates "removal of authority," "decentering," and "dismantling structures," and recognizes heterogeneous concepts of equality.

In the field of education, postmodernism emphasizes the power structure and knowledge monopoly existing in the education system, which may lead to unequal distribution of educational resources and unequal educational opportunities. Foucault's knowledge theory of power points out that power is closely related to knowledge, and the power structure in the education system is often based on a specific knowledge system.

Postmodernist critical education theory emphasizes the democratization and liberation of education. The traditional education system may be based on authoritarianism and standardization, which may restrict students' free development and individual expression.

Additionally, a postmodernist perspective also emphasizes the importance of diversity and inclusion. When studying educational equity, it is necessary to take into account the needs and characteristics of different groups and take corresponding measures to ensure equality and equity of educational opportunities. This includes paying attention to the educational issues of disadvantaged groups such as underdeveloped areas and poor families, and providing them with equal educational resources and support.

To sum up, postmodernism provides important theoretical support for studying equity in higher vocational education. Equitable educational opportunities can be better achieved by challenging power structures and knowledge monopolies in education, promoting the democratization and emancipation of education, and focusing on diversity and inclusion (See Table 2.1).

### 3. Sustainable development theory

The theory of sustainable development originated from understanding the devastating disasters that may be caused by separating the economy, society, and environment to pursue development, and it was gradually formed in the 1980s. In November 1983, the United Nations established the World Commission on Environment and Development (WECD). In 1987, WECD, led by Mrs. Brundtland, the former Prime Minister of Norway, submitted the report "Our Common Future"(Burton, 1987) after four years of research to the United Nations General Assembly, formally proposing the concept and model of "sustainable development". This concept has been widely recognized and supported by the international community and has become an important strategic idea for the future development of mankind.

In 2015, the United Nations Sustainable Development Summit was held at the New York headquarters, and 193 United Nations member states adopted 17 sustainable development goals. These goals aim to comprehensively solve development problems in the three dimensions of society, economy, and environment and guide global development policies and fund use from 2015 to 2030 (Jin Shuqin et al., 2023).

The importance of sustainable development theory lies in the organic combination of economic development, social justice, and environmental protection, and proposes a comprehensive development model. By achieving the Sustainable Development Goals in education, we can contribute to building a more equitable, harmonious, and sustainable world.

This research is directly related to SDG4 and SDG10 among the 17 Sustainable Development Goals. SDG4 is to ensure inclusive and equitable quality education, provide all people with lifelong learning opportunities, and achieve universal access to quality education; SDG10 is to reduce inequality within and between countries, focusing on reducing inequality between different social groups (Ensuring inclusive and equitable quality education and lifelong learning opportunities for all, 2015). By exploring aspects such as the distribution of educational resources and the equity of educational policies, this study provides

practical suggestions for realizing SDG4. Promoting educational equity will help reduce inequities in higher vocational education between different regions and different social groups, thereby helping the region under study gradually achieve the goals of SDG10(See Table 2.1).

#### 4. Marx and Engels' views on educational equity

After the 19th century, with the development of capitalist social economy and politics, the contradictions and struggles between the proletariat and the bourgeoisie became increasingly intensified. In this context, Marx and Engels had important discussions on the issue of educational equity and formed the idea of educational equity, including educational rights, equality of educational opportunities, and all-round personal development.

Marx (1985) pointed out that, on the basis of criticizing the bourgeois concept of equality, "Education is a normal condition for human development and the real interest of every citizen." Marx and Engels believed that striving for the proletariat's right to education and realizing the rights of all members of society, including opportunities to receive education and allowing all members of society to enjoy equal opportunities to receive education, are the basic requirements for educational equity. "Education is a normal condition of human development and is in everyone's true interest, since everyone has the indisputable right to the full development of his or her talents, and society is inimical to ignorance when it makes it the inevitable consequence of poverty. People have committed a double sin." They emphasized that giving everyone the opportunity to receive education is a basic requirement to achieve educational equity because access to education is not only a necessary condition for normal human development but also in line with the fundamental interests of every citizen. While recognizing that equal rights to education and educational opportunities are the basic requirements for achieving educational equity, equity in educational conditions is also an important component of educational equity.

Marx and Engels tried to ensure the realization of educational equity through legal means. They believe that establishing a sound legal system that meets

the requirements of the people's interests guarantees educational equity. Only by establishing a sound socialist legal system can the human ideal of pursuing educational equity be realized.

In today's society, the issue of educational equity has become increasingly prominent, especially in the field of higher vocational education in Guangdong Province. The concept of educational equity proposed by Marx and Engels provides important inspiration for this study. They emphasize that education is a normal condition for human development and that everyone should have equal access to education, which is closely related to this study. Therefore, it is necessary to learn from their ideas and promote educational equity by formulating reasonable policies and laws, thereby promoting the development and progress of higher vocational education in Guangdong Province (See Table 2.1).

**Table 2.1** List of theories related to educational equity

Theory name	Core ideas	Implications for this study
Theory of justice	<p>1. Everyone shall have an equal right to a similar system of liberties compatible with the most extensive and equal system of basic liberties available to all.</p> <p>2. Social and economic inequalities should be so arranged that they conform to the principles of justice, serve the greatest interests of the least favored, and depend on equity and equality of opportunity.</p>	<p>The development of the country is not only about economic construction but also about promoting social equity and justice and promoting equitable development of education so as to continuously meet people's growing material and cultural needs.</p>

Table 2.1 (Continued)

Theory name	Core ideas	Implications for this study
Theory of justice	<p>1. Everyone shall have an equal right to a similar system of liberties compatible with the most extensive and equal system of basic liberties available to all.</p> <p>2. Social and economic inequalities should be so arranged that they conform to the principles of justice, serve the greatest interests of the least favored, and depend on equity and equality of opportunity.</p>	<p>The development of the country is not only about economic construction but also about promoting social equity and justice and promoting equitable development of education so as to continuously meet people's growing material and cultural needs.</p>
Postmodernism	<p>1. Advocate a heterogeneous concept of equality, emphasize the differences between everyone, advocate "removal of authority," "decenter," and "dismantle structures," and recognize heterogeneous concepts of equality.</p> <p>2. Emphasize the importance of diversity and inclusion.</p>	<p>Equitable educational opportunities can be better achieved by challenging power structures and knowledge monopolies in education, promoting the democratization and emancipation of education, and focusing on diversity and inclusion.</p>
Sustainable development theory	<p>1. SDG4 aims to achieve universal access to quality education</p> <p>2. SDG10 focuses on reducing inequalities between different social groups</p>	<p>Promoting educational equity will help reduce inequities in higher vocational education between different regions and different social groups, thereby helping the region</p>

Table 2.1 (Continued)

Theory name	Core ideas	Implications for this study
		under study gradually achieve the goal of high-quality education.
Marx and Engels's Views on Educational Equity	<ol style="list-style-type: none"> <li>1. Giving everyone the opportunity to receive education is a basic requirement to achieve educational equity;</li> <li>2. Ensure the realization of educational equity through legal means</li> </ol>	<p>Promote educational equity by formulating reasonable policies and laws to promote the development and progress of higher vocational education in Guangdong Province.</p>

### Impact of inequity education

Research by Zhu Jianwen & Huang Zhendong (2020) found that educational inequality is negatively correlated with residents' happiness. The more unequal education is, the lower the residents' happiness. Educational inequality affects the well-being of residents by affecting individuals' educational attainment and income levels, especially those with children.

Wang Jiaqi & Min Weifang (2021) found that the degree of educational equity has an inverted U-shaped relationship with the level of provincial economic development. When the degree of educational equity reaches a certain level, it is most beneficial to economic development. Fan Gang & Wang Xiaolu (2005) found in their research that high-income groups have significantly more educational opportunities than low-income groups. The former have greater opportunities to enter higher education and have higher wages. Unequal educational opportunities are a key factor leading to excessive income gaps. Haim & Shavit (2013) analyzed ESS (European Social Survey) data from 24 countries, and the study showed that unequal educational opportunities from the 1950s to the 1970s exacerbated the overall social

income gap in Europe. Mao Jianqing & Li Xiaolan (2014) compiled literature published at home and abroad in recent years and came to a similar conclusion, believing that while the overall education in our country has improved, unequal distribution of education has widened the income gap. From the perspective of education quality, Xu Qinghong & Zhang Xiaoqian (2017) used CFPS 2010 data and found that family background has a significant impact on education quality inequality, thus further maintaining income inequality. Research by Li Li (2022) shows that educational inequality will significantly expand the income gap. For every 1% increase in educational inequality, the income gap will increase by 2.9%. Especially in the field of higher education, educational inequality has a more significant impact on income gaps.

In addition, Wang Chuhui (2020) believes that in modern society, individuals obtaining diplomas through education are the main way to achieve social mobility, and educational inequality may lead to the phenomenon that the strong with education become stronger and the weak become weaker, hindering social mobility. Increase the risk of class consolidation. Guo Dandan (2019) pointed out that in today's China, educational inequality is becoming more and more invisible and spreading more and more widely. Educational inequality creates differences not only at the individual level but also among groups and generations. This trend gradually accumulates, manifesting various explicit and implicit inequalities in school education and social transformation. At present, educational inequality based on resource distribution has gradually become prominent. This distribution inequality is closely related to economic capital, cultural capital, and other relationships, leading to unequal distribution and thus re-rationalizing and solidifying the original dominance relationship.

To sum up, educational inequality affects individual happiness and economic status and hinders social development and national rejuvenation. Therefore, we should strengthen the emphasis on education, promote educational equity, form a relatively equitable and balanced educational development ecology, and create basic conditions for the development of each member of society (See Table 2.2).

**Table 2.2** Statistical table of the impact of educational inequality

Author	Educational opportunities	Personal income	Happiness	Regional economic development	Class mobility
Huang Zhendong&Zhu Jianwen	√	√	√		
Wang Jiaqi&Min Weifang				√	
Fan Gang&Wang Xiaolu	√	√			
Haim EB		√			
Mao Jianqing&Li Xiaolan		√			
Xu Qinghong&Zhang Xiaoqian		√			
Li Li		√			
Wang Chuhui					√
Guo Dandan					√
<b>Total</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>2</b>

### Main factors affecting educational equity

Many factors affect educational equity, including politics, the economy, the environment, and others. These factors have varying degrees of impact on educational equity in different periods and social backgrounds.

Hou Cao (2020) pointed out that the government, as the main provider and allocator of public resources and services, plays a crucial role in the issue of educational equity. Promoting educational equity is not only the mission of the current government, but also a responsibility and responsibility. The government should actively participate in the issue of educational equity and formulate relevant policies and measures to promote educational equity. Li Mengjie (2019) pointed out that local governments have biases and lack of responsibility on issues of educational equity, including moral responsibilities, legal responsibilities, administrative responsibilities, and

political responsibilities. This shows that the government faces a series of challenges and problems in achieving educational equity.

Jiang Xiaodie & Zhang Chunkun (2021) pointed out that higher vocational education funding investment is affected by factors such as regional economic development level, industrial structure adjustment, policy systems, and cultural concepts, thus forming regional effects of higher vocational education funding investment in different regions. Based on U.S. data from 1950 to 1990, Fernandez & Rogerson (1997) constructed a general equilibrium model and found that the development of educational investment has a synergistic relationship with economic development and that per-student education expenditures and per-capita income have the same growth rate. Busemeyer's (2007) study, based on data from OECD democratic countries, found that the level of economic development is the core determinant of public education investment in each country. Luo Qin (2004) also found through an empirical analysis of China's total public education investment that educational opportunities and educational investment levels in economically developed areas are often ahead of those in economically underdeveloped areas. In addition, research by Wang Shanmai et al. (1998) shows that the level of economic development is closely related to the level of public education expenditures of local governments. This shows that uneven economic development will lead to uneven distribution of educational resources, thus affecting educational equity.

When the central government and local residents evaluate the fiscal expenditure performance of local governments, they usually use gross domestic product (GDP) as the main indicator (Zhou Li'an, 2004). Therefore, local governments are driven by local interest goals and tend to use increased tax revenue to invest in infrastructure spending to meet the needs of regional economic growth rather than investing in public services such as education (Bucovetsky S, 1991). Fu Yong and Zhang Yan's (2007) study based on China's public expenditure structure also showed that local finance tends to invest incremental resources in infrastructure. In addition, Ma Wenwen (2020) also pointed out that political factors, economic factors, and environmental factors have an important impact on the allocation of educational

resources and educational equity, including differences in economic development levels between regions, the tendency of government policies, geographical location and humanistic environment and other factors.

Taken together, these literature provide an in-depth understanding of the various factors that affect equity in higher vocational education. These factors are multifaceted and can generally be summarized into three categories: politics, economy, and environment. These factors interact with each other, jointly shaping the current status and challenges of educational equity. These factors need to be considered comprehensively when formulating strategies to achieve a more equitable and inclusive higher vocational education (See Table 2.3).

**Table 2.3** Statistical table of main factors affecting educational equity

Researcher	Political Factors	Economic factors	Environmental factor
Houcao	√		
Li Mengjie	√		
Jiang Xiaodie & Zhang Chunkun		√	√
Fernandez & Rogerson		√	
Busemeyer		√	
Luo Qin		√	
Wang Shanmai	√	√	
Zhou Li'an	√		
Bucovetsky	√	√	
Fu Yong & Zhang Yan	√		
Ma Wenwen	√	√	√
<b>Total</b>	<b>7</b>	<b>7</b>	<b>2</b>

## **Educational resources**

### 1. Definition of educational resources

Resources initially refer to natural resources, including water, air, sunlight, land, petroleum deposits, etc. With the development and progress of society, the meaning of resources continues to expand. In contemporary times, resources refer to the sum of natural resources and social resources required by human beings to engage in various activities. Social resources mainly refer to human resources, information resources, institutional resources, etc. Educational resources are a type of social resource. They are soft resources in terms of form and are based on human intelligence.

"Education Dictionary" (Gu Mingyuan, 1998) defines Educational resources as also called "educational, economic conditions." The human, material, and financial resources occupied, used, and consumed in the educational process, that is, the sum of educational human resources, material resources, and financial resources. Human resources include educator human resources and educated human resources, that is, the number of students in school, the number of students in classes, the number of enrollments, the number of graduates, the number of administrative staff, the number of teaching staff, the number of teaching assistants, the number of workers and production staff Count, etc. Material resources include fixed assets, materials, and low-value consumable items in schools. Fixed assets are divided into shared fixed assets, fixed assets for teaching and scientific research, and other general equipment fixed assets.

Luo Yaguang (2006) believes: "Educational resources can be divided into broad and narrow senses. Educational resources, in a broad sense, refer to various teaching equipment, library materials, land, buildings, number of faculty and staff, professional business capabilities, and various types of teaching equipment that are closely related to educational activities. The sum of all persons, property and property including management activities; educational resources in a narrow sense only refers to teaching equipment, education funds, etc."

Jiang Yan (2021) believes that: From a macro perspective, the allocation of educational resources is a process in which the government evenly allocates total social resources to various regions, various education departments, and various types of education at all levels based on the principle of equity. On the micro level, the government allocates educational resources equally in accordance with the principle of equity and is supplemented by the market mechanism to differentially allocate educational resources in accordance with the principle of efficiency to complete the reasonable allocation of educational resources among different education entities at all levels and types.

The development of higher vocational education cannot be separated from the support of educational resources. Therefore, optimizing and integrating the allocation of educational resources is of great significance in providing talent security and intellectual support to society.

In summary, this study defines Educational resources as various material and non-material conditions that affect the equity of higher vocational education in Guangdong, including, but not limited to, laws and regulations, financial allocations, school policies, school running conditions, and other resources.

## 2. Related theories of educational resources

### 1) Theory of balanced regional economic development

The basic connotation of the regional economic balanced development theory in regional economic theory refers to the mutual coordination of industries and departments in the national economy, the common development, and synchronous growth of all regions. The theory of regional economic balanced development is developed based on the Harrod-Domar neoclassical economic growth model. Among them, Rosenstein Rodin's grand push theory and Nax's balanced development theory are representative theories of regional balanced development theory.

The core of the great push theory is the external economic effect, which creates a market of mutual demand through mutual complementation and solves the problem of insufficient demand that hinders economic development. The grand

push theory believes that regional balanced development not only emphasizes the balance between departments and industries but also emphasizes the balanced development between regions or within regions, that is, spatial balancing. This theory advocates adopting a balanced development strategy in terms of spatial layout and regional economic development to minimize the gap between regions as the goal of regional development. In terms of spatial development methods, it advocates balanced layout and balanced investment ("Great Advance Theory and Unbalanced Development Theory," 1994).

The theory of balanced development advocates paying attention to the correlation and complementarity between regions and industries as the starting point for promoting coordinated industrial development and narrowing regional gaps. Regional economic theory also includes regional economic development stage theories, including economic growth stage theory, inverted "U"-shaped theory, bell-shaped development theory, and coordinated regional economic development theory ("Great Advance Theory and Unbalanced Development Theory," 1994).

Based on this theory, solving the problem of uneven regional development of higher vocational education in Guangdong Province requires relying on regional economic, policy, and financial support, and the development of higher vocational colleges themselves (See Table 2.4).

## 2) Government intervention theory

The theory of government intervention is mainly divided into two parts: market failure theory and the economic functions of the government. It was proposed by the famous American economist Stiglitz. The government intervention theory believes that the main role of the government is to compensate for market failure, so the research on market failure theory is included in the government intervention theory. Stiglitz's government intervention theory challenges the traditional market failure theory. It not only demonstrates market failure from superficial phenomena but also involves the core principles of welfare economics. Welfare economics believes that market mechanisms will lead to Pareto optimality, but Stiglitz believes that these theorems themselves have wrong assumptions.

Stiglitz's government intervention theory is more solid than the traditional government intervention theory. When the market cannot adjust itself to achieve optimal results, government intervention is particularly necessary. In the case of uneven regional development of higher vocational education, if no intervention is carried out, the educational gap between developed and underdeveloped regions will be further widened, leading to a "vicious causal cycle" and affecting social stability. Therefore, government intervention is crucial.

The government can start from an overall perspective and make overall plans for the development direction of higher vocational education by formulating and improving relevant systems, regulations, policies and measures. This includes guiding the development of higher vocational education in different regions and promoting the balanced development of higher vocational education regions. Government intervention can help balance the allocation of educational resources in different regions and ensure that each region has access to equal educational opportunities, thus promoting the sustainable development of the entire society (Liu Wei, 2007) (See Table 2.4).

### 3) New institutionalism theory

New institutionalism theory spans multiple subject areas, including political science, economics, and sociology, and has become a trend of thought that transcends traditional subject boundaries. This theory focuses on the impact of social systems on educational equity, covering aspects such as government policies, laws and regulations, and organizational structures. In the theoretical framework of new institutionalism, institutions are regarded as a kind of equilibrium, norms, and rules; institutions can be formal or informal; they are both the result of human behavior and constraint of human behavior, showing a two-way interaction. constraining relationship.

Liu Yan (2014) proposed that according to the new institutionalism theory, higher vocational education policy itself is a system, and the organization and environment for policy implementation also form part of the system. The implementation of education policies is carried out within the institutional

framework, and the implementation subject interacts with the implementation environment. The implementation subject pursues adaptation to the environment and also improves the environment, while the implementation environment affects the behavior of the implementation subject and itself is constantly changing. The policy implementation environment includes various aspects such as politics, economy, society, and culture. A good implementation environment is conducive to the effective implementation of policies, while a poor implementation environment will cause resistance to policy implementation.

The new institutionalism theory provides an important theoretical perspective for studying equity in higher education in Guangdong Province. By considering the institutional arrangements in government education policies, education laws and regulations, and educational organizations, we can conduct an in-depth analysis of the challenges faced by higher education equity in Guangdong Province, and propose corresponding reforms and improvement measures to promote the realization of educational equity (See Table 2.4).

#### 4) Human capital theory

Human capital theory was formed in the 1960s, proposed by American economists Schultz and Becker, and was considered an important theoretical tool for economic growth in Western developed countries in the 1970s. Its basic theoretical points and methodology are It still occupies the mainstream position of educational economics in the world.

Human capital theory's research on income growth and poverty issues in developing countries has found that investment in human capital in education and training is the main determinant of personal wealth and income in developing countries and their distribution. There is a relationship between education and personal economic success. Some kind of close and regular connection (Min Weifang, 2020).

Schultz believes that "education is not an investment, but a consumption." It is an "investment in people." Education is believed to be the fundamental way to improve workers' ability to deal with changes in economic

conditions. Schulz clearly recognized education's role in improving people's economic adaptability. Through in-depth discussions on the relationship between education and the economy, he believed that education is the key to improving labor productivity. The formation of human capital mainly relies on education. The formation and improvement of various abilities embodied in workers cannot be separated from education. Improving human quality is an important factor in social and economic development. Therefore, education plays a special and important role in the social economy. status (Zuo Lingling, 2004).

Human capital theory believes that educational investment is productive, and the return from education on human capital investment is greater than the return on physical capital investment. The quality of a country's labor force directly affects the role of physical capital. The focus of capital investment should shift from physical capital to human capital, and the growth rate of human capital investment should be faster than that of physical capital investment (Ma Xian, 2004).

Hou Ning et al. (2013), based on human capital theory research, found that higher vocational education is the main way to form and accumulate human capital, and its investment can promote economic growth. Investment in higher vocational education can improve workers' knowledge, production skills, and proficiency, thereby effectively increasing labor productivity, providing intellectual support for economic growth, and achieving sustainable development of society.

To sum up, human capital theory emphasizes the importance of education to personal and socioeconomic development and has important theoretical guidance for guiding education policy formulation and government investment (See Table 2.4).

**Table 2.4** List of theories related to educational resources

Theory name	Core ideas	Implications for this study
Regional Economic Balanced Development Theory	<p>1. Grand push theory: In terms of spatial layout and regional economic development process, a balanced development strategy should be adopted to minimize the gap between regions as the regional development goal. In terms of spatial development methods, we advocate a balanced layout and balanced investment.</p> <p>2. Balanced development theory: Pay attention to the correlation and complementarity between regions and industries and use this as the starting point to promote coordinated industrial development and narrow regional gaps.</p>	<p>To solve the problem of uneven regional development of higher vocational education in Guangdong Province, we need to rely on regional economic, policy, financial support, and the development of higher vocational colleges themselves.</p>
Government intervention theory	<p>The main role of the government is to compensate for market failures. Government intervention is particularly necessary when the market cannot adjust itself to achieve optimal results.</p>	<p>The government can start from the overall perspective and make overall plans for the development direction of higher vocational education by formulating and improving relevant systems, regulations,</p>

Table 2.4 (Continued)

Theory name	Core ideas	Implications for this study
		policies, and measures, balancing the allocation of educational resources in different regions, and promoting the balanced development of higher vocational education regions
New institutionalism theory	Institutions are regarded as a kind of equilibrium, norms, and rules. They can be formal or informal. They are both the result of human behavior and the constraint of human behavior, showing a two-way interactive restriction relationship.	Considering the institutional arrangements in government education policies, education laws and regulations, and educational organizations, we can conduct an in-depth analysis of the challenges facing higher education equity in Guangdong Province and propose corresponding reform and improvement measures.
Human capital theory	1. Investment in human capital in education and training is the main determinant of personal wealth and income and their distribution in developing countries. There is a close and regular link between education and personal economic success. 2. Investment in education is a productive investment. The return from investment in	It has important theoretical significance for guiding education policy formulation and government investment.

Table 2.4 (Continued)

Theory name	Core ideas	Implications for this study
	<p>human capital from education is greater than the return from investment in physical capital.</p> <p>The quality of a country's labor force directly affects the role of physical capital.</p>	

### 3. Main factors affecting the allocation of educational resources

The main factors affecting the allocation of educational resources cover many aspects, ranging from educational policies and economic investment to economic development levels, regional characteristics, and other factors that have an important impact on the allocation and allocation of educational resources.

Ruan Liqun and Hu Yunthong (2009) believe that educational policies and systems are the main ways for the government to regulate higher education resources. The main consideration in formulating educational policies and systems is achieving equity and effectiveness in education.

Wang Yiqing (2023) proposed that the balanced allocation of higher education resources that takes into account both equity and efficiency must rely on the equity preference of the allocation subject. That is, the balanced allocation of higher education resources must be achieved under the leadership of the government.

Li Yingxuan (2022) proposed that the government's public education investment expansion strategy is related to private education needs, and the choice of private education strategy is mainly affected by the policy dividends of the expansion of public education investment and the education needs of other residents. The heterogeneity of residents' consumption preferences, the existence of the "voting with their feet" mechanism, and the strategic choice under the game

equilibrium between the government and residents will lead to the concentration of educational resources and human capital in advantageous areas, thereby amplifying the gap between public and private education investment between regions. The level of public education investment of local governments is affected by local characteristics such as local economic foundation, population density, fiscal budget, and educational foundation, as well as the positive spatial spillover effects between local government public education investments.

Li Hang et al. (2018) found through analysis that there is a positive relationship between the level of funding investment, regional per capita education level, educational resource allocation structure and personnel structure, regional economic development level, and higher education efficiency.

He Yun & Zhang Liangqiao (2019) found that the proportion of local fiscal expenditures on science expenses accounted for the local fiscal general budget expenditures and that the per capita science expenditure amount in the area where higher vocational colleges are located is directly proportional to the science and technology investment in higher vocational colleges. Relationship, while the per capita GDP of the region has a negative impact, which means that optimizing the external environment will be more effective in improving its efficiency.

Wu Hongchao & Ma Congying (2020) found that the regional economic level, the degree of local and foreign exchanges and communication are negatively related to the scientific and technological innovation efficiency of universities, but these factors have little effect on the level of efficiency; while local transportation conditions will affect the scientific and technological innovation of universities. Efficiency brings obvious positive effects.

Hu Fang & Liu Hongfeng (2022) Economic, social, demographic, and other external factors have an extremely significant impact on the efficiency of higher education expenditures in ethnic provinces and regions.

In summary, the above factors interact to jointly shape the distribution pattern of educational resources and the path to educational equity, which has

important guiding significance for formulating educational policies and improving the allocation of educational resources (See Table 2.5).

**Table 2.5** Statistical table of main factors affecting the allocation of educational resources

Researcher	Education policy	Economic investment	The level of economic development	Other regional characteristics
Ruan Liquan & Hu Yunthong	√			
Wang Yiqing	√			
Li Yingxuan	√	√	√	√
Li Hang	√	√	√	√
He Yun & Zhang Liangqiao		√		
Wu Hongchao & Ma Congying			√	√
Hu Fang & Liu Hongfeng		√	√	√
<b>Total</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>

#### 4. Strategies for rational allocation of educational resources

The rational allocation of educational resources is crucial to educational equity and efficiency. In his research, Weng Wenyan (2001) proposed the principle of equity in the distribution of educational resources, including the principle of equal resource distribution, the principle of fiscal neutrality, the principle of adjusting special needs, the principle of cost sharing and cost compensation, and the flow of public resources from rich to poor, etc. in principle. This is the ultimate standard for scholars from various countries to judge whether the distribution of educational

resources is equitable at this stage. It is the highest goal of educational financial equity and the most fundamental financial requirement to achieve equal educational opportunities.

Albrecht and Ziederman summarized four forms of higher education resource distribution: 1) state-dominated model, that is, the government directly allocates funds to universities, or through university foundations; 2) cost-compensation model, where the government provides direct funding to students (such as Loans); 3) Income diversification model, including government appropriations, direct government funding for students (including scholarships and loans), tuition and miscellaneous fees, scientific research contract income, industrial and commercial investment in schools, etc.; 4) Resource transfer model, including direct funding And through foundation grants, and the government providing students with direct loans and scholarships and bursaries to pay the school tuition fees. They pointed out that resource allocation methods under different models will have different impacts on educational equity and efficiency, and it is necessary to choose a suitable model for resource allocation based on the actual situation (Weng Wenyan, 2003).

Wang Yiqing (2023) proposed a unified theory of equity and efficiency in higher education resource allocation, emphasizing the unity of equity and efficiency. He believes that sufficient financial resources for higher education are the key to achieving equity and efficiency. Students from different regions receive homogeneous higher education levels only through sufficient resource investment.

Liang Shuang & Jiang Wenning (2021) studied the allocation of higher education resources in the context of urban agglomerations, pointing out that in the context of urban agglomerations, the allocation of educational resources should consider the development needs and characteristics of urban agglomerations and the number of enrolled students is distributed in multiple centers. It is more beneficial to innovation in urban agglomerations while teaching and application-oriented universities should adopt a multi-center structure in urban agglomerations,

while research-oriented universities should be laid out according to the city's scientific research base.

Yang Xiaoli & Chen Hao (2020) discussed the issue of resource allocation in higher vocational education from the perspective of the regional economy. They believe that the optimal allocation of higher vocational education resources should be based on the actual situation of regional economic development, have an overall concept, plan in advance, make early operations, and adhere to higher vocational education's unity of scale, structure, quality, and efficiency. Government participation is needed to optimize the allocation of educational resources, combine educational resources, and increase the utilization rate of educational resource allocation; promote the sustainable development of higher vocational education by improving policies and regulations, optimizing the structure of the teaching staff, promoting regional cooperation, and establishing a scientific outlook on development.

Zhang Wanpeng & Li Mengqi (2020) focused on the government's role in allocating educational resources and proposed that the government's way of allocating educational resources should focus on the following aspects: 1) Adhere to the government's leading role in allocating educational resources, clarify and improve Responsibilities and functions, strengthen the investment and management of educational resources; 2) Give full play to the decisive role of the market in resource allocation and transform the concept of educational resource allocation; 3) Actively introduce market competition mechanisms to improve the efficiency of educational resource allocation; Fourth, establish collaborative cooperation awareness to maximize the benefits of educational resource allocation.

To sum up, the rational allocation of educational resources needs to consider equity and efficiency comprehensively. The government plays an important leading role in this process. At the same time, it needs to focus on the role of market mechanisms and establish a sense of collaboration to promote educational equity and the sustainable development of the business.

## Politics

From a historical and etymological perspective, the word politics comes from the Greek word *ta politika*. It refers to the art or science of government management. It represents the formulation and implementation of individual and collective organizations, administration, systems, rights, laws and regulations, and relations with other countries within a country (Trumble & Brown, 2002). According to the Encyclopedia of China (Encyclopedia of China, 2024), the word "politics" was also used in China before the Qin Dynasty, but "politics" and "governance" were usually separated. "Politics" refers to the rights, systems, order and laws of the country; "governance" refers to managing and educating the people, and also refers to achieving a stable state.

Marxism believes that politics is a social phenomenon that emerges at a certain stage of human history. It is the core part of the superstructure built on a certain economic foundation. It is the sum of various social activities and social relations based on certain class relations and centered around the state power. It mainly includes political and legal systems, various political organizational forms and facilities with state political institutions as the main body, and political ideology (Reform and Innovation as the Driving Force, 2013).

Politics also determines the right to education. The political and economic inequality between different classes is reflected in education, which leads to unequal rights to education. In modern society, on the one hand, the development of social economy requires the general improvement of the people's cultural and scientific knowledge level. On the other hand, the people's democratic awareness is also increasing. Educational democracy and educational equality have become the general requirements of society. In response to this, the state must respond and has therefore formulated corresponding laws to guarantee citizens' right to education (Wang Ping, 2012).

The political definition of this study refers to the core part of the superstructure established on a specific social and economic basis, which is reflected in the legal system, administrative management and policy system with the state

power as the core. It directly affects the formation and implementation of the equity strategy of vocational education through the formulation and implementation of education laws and regulations and the allocation of educational resources.

## **Economy**

"economy" originated from Greek, and gradually evolved from the words "household" and "management". It originally described the organization and utilization of resources in slave society. In ancient China, "economy" emphasized governing the country and saving people's livelihood (such as "govern the country and help the world"), while the modern sense of "economy" was introduced into China through Japanese translation in the 19th century, indicating the comprehensive process of wealth production, distribution and resource management (Bradley Shiller, 2011).

Marxism regards the economy as the sum of social production relations, that is, the circular movement of production, exchange, distribution and consumption. Economic development directly determines the allocation and use of educational resources. In higher vocational education, regional economic differences have significantly affected educational equity between the eastern, western and northern regions of Guangdong and the Pearl River Delta region. This difference is not only reflected in financial support and infrastructure, but also in the connection and support capabilities of the employment market (Natural Dialectics Research, 2013).

The economic definition of this study refers to the sum of social production relations, covering the production, exchange, distribution and consumption of material resources. It determines the level of allocation of vocational education resources and the sustainable support capacity of the employment market, and is the material basis for achieving educational equity.

## Social

The concept of society has evolved from a broad understanding from the perspective of culture and civilization to a scientific explanation centered on social relations.

In ancient Chinese literature, "she" refers to a place for worshipping gods. "hui" means gathering. The original meaning of the two words together refers to gatherings held by people centered on worshipping gods. Later, it meant that many people gathered in one place to carry out certain activities for a common purpose. Western sociologists mostly associate the word "society" with concepts such as culture, civilization, system, group, and community. For example, Park (I.J.E.Park) believes that society is a kind of heritage including human behavior habits, sentiments, folk customs, etc.; Durkheim (Emile Durkheim) believes that society means collection, an independent entity based on personal consciousness. Some scholars also propose that society is the totality of relationships between people (Zhao Mengying, 2006).

Marxism believes that society is the product of people's interaction and the sum of social production relations. This social relationship will constantly adjust with the changes in material production materials and productivity, and manifest itself in specific social forms in different historical stages (Selected Works of Marx and Engels, 2012).

In the context of educational equity, society is both the recipient of resource allocation and the driving force for achieving equity. The social recognition of vocational education, public opinion orientation, and the image shaping of vocational education will have a profound impact on educational equity. For example, in the eastern, western and northern regions of Guangdong, the social recognition of vocational education is relatively low, which directly weakens the employment competitiveness and career attractiveness of vocational education graduates, and constitutes a social constraint on the development of educational equity.

The social definition in this study refers to the sum of production relations formed by human interaction, reflecting the culture, folklore and group consciousness of human beings at a specific historical stage. Society indirectly shapes the external environment and social value of vocational education equity through its cognition and recognition of vocational education, public opinion guidance and public support.

## **Strategy**

### **Definition of strategy**

"Strategy" originates from military science and is a military term. In ancient China, strategy was often referred to as strategy, strategy, strategy, strategy, military strategy, etc. The word "strategy" was first seen in the book "Strategy" written by Sima Biao, a historian of the Western Jin Dynasty. It was later frequently seen in historical books such as "Three Kingdoms" and "Twenty-One Histories." Its core meaning is not only combat strategy but also sometimes includes politics, Diplomatic strategy, and tactics. In the West, the word strategy comes from the Greek "Strategos (general)" and later evolved from "Stragia (campaign, strategy)," both of which refer to the art and science of commanding the army. Therefore, regardless of East or West, strategy comes from military affairs. Strategy initially refers to military strategy and is only used in the military field. Its original meaning is the overall, long-term, and basic war planning. The term strategy has begun to be generalized, and its application extends to various fields such as politics, economy, and education (Ma Peipei, 2007). There are still different opinions on the meaning of strategy. To sum up, there are about five explanations:

One is to define strategy as decision-making. Alfred D. Chandler believed that strategy is a method of designing an organization's long-term goals and decisions, as well as the actions and asset allocation required to achieve these goals. Byars believes that strategy is decision-making, including the formulation and evaluation of various programs to achieve organizational goals and missions and the final selection of programs that should be implemented. Kenny Andersen's definition of strategy is:

Strategy is the form of goals, as well as the main policies and plans to achieve the goals, determines the cause of the design organization and the category to which the organization should belong (Industrial Business Strategy, 1990).

The second is to define strategy as a plan. Quinn believes that strategy is a pattern or plan that combines the main purpose, policies, and activities of an organization in a certain order to form a tight whole. Von Newman believed that strategy is a complete plan designed to explain what choices should be made in each situation. W. F. Glueck believes that strategy is a set of unified, coordinated, extensive, and integrated plans designed to achieve the basic goals of the organization (Bias.L. L, 1988).

The third is to interpret strategy as a means. The Stanford Strategy Research Center believes that strategy is a means to pursue goals. The formation process of means reflects changes in the design organization's environment, the use of major resources, and guidance for the development direction of the design organization.

The fourth is to interpret strategy as a guiding ideology. For example, Bates and Eldredge believe that strategy can be defined as an organization's guiding philosophy to invest resources and achieve its goals. It provides constraints and limitations for the organization to make necessary action decisions (Eldredge, 1984). Domestic scholars have also proposed a similar definition, believing that strategy is the guiding ideology that runs through the decision-making or activities of a system in a certain historical period and the major plans related to the overall development made under the guidance of this ideology (Xie Zhihua, 2007).

To sum up, strategy refers to a major, overall plan or plan that determines the overall direction in order to ensure survival and promote development. Its basic characteristics include: first, the strategy has an overall nature, which does not only involve the arrangement of a single part or individual affairs but is related to the long-term plan for the overall survival and development; secondly, the strategy has a future nature, and the focus is not on the present, but on the future. Pay attention to the long-term development in the future; third, the strategy is hierarchical, and each level has its own independent overall vision and corresponding strategy; finally,

the strategy is stable. Once determined, the strategy is not easily affected by changes in the external environment or leadership changes.

### **Related theories and research tools of strategy**

#### **1. Marxist philosophy**

Marxist philosophy is a science that studies the nature and general laws of nature, society, and human thinking. It is also the theoretical basis of Marxist theory. In the process of formulating and implementing the development strategies of higher vocational colleges, the basic viewpoints and methods of dialectical materialism and historical materialism must be used for in-depth analysis. Marxist philosophy believes that people can understand the objective world in practice and transform the world through practice. Scientific methods of understanding include observation and experiment, induction and deduction, analysis and synthesis, abstraction and concreteness, etc. as well as functional simulation, systematic thinking, information feedback, etc. (Gao Qinghai & Sun Litian, 2001).

As an important part of higher education, higher vocational education has its own laws, and its development must follow them. Only in accordance with these laws can a practical development strategy be formulated. The basic viewpoints, methods, and historical materialism of Marxist philosophy can guide people to correctly understand the connections, laws, status, and functions of higher vocational education, thereby establishing a solid foundation for promoting equity strategies in higher vocational education in Guangdong Province (See Table 2.6).

#### **2. 4M Analysis Matrix**

The 4M method ("4M method," 2022), also known as the 4M inspection method, refers to the first four letters of the English alphabet of the operator (Man), machinery and equipment (Machine), raw materials (Material), and operating method (Method). These four Ms are used in the quality defect method as the four major elements. It is the most useful method in tracing the causes of poor-quality defects and engineering management. Gao Xiaoxu pointed out in his research (2011) that the international community usually uses the "4M" method for analyzing internal influencing factors. This definition was formulated by the National Aeronautics and

Space Administration (NASA). "4M" refers to the operator (Man), machinery and equipment (Machine), raw materials (Material), and operating method (Method).

### 3. SWOT-PEST Analysis Method

SWOT analysis was first proposed by Learned, Christensen, Andrews, and Guth in the book "Corporate Policy: Principles and Cases" in 1965. With the publication of Ansoff's "Corporate Strategy" and Andrews' "The Concept of Corporate Strategy", it has become more and more popular. The strategic research foundation represented by SWOT analysis has been established (Song Jiexi & Pan Jianwei, 2010). The so-called SWOT analysis lists the internal strengths (Strengths), weaknesses (Weaknesses), external opportunity factors (Opportunities), and threats (Threats) that are closely related to the research object through investigation and analysis and then uses the matrix in a certain order. List the factors in various forms and then use the research method of system analysis to match each factor with each other for analysis and research and draw a series of corresponding conclusions (Li Na, 2000). The core goal of SWOT analysis is to provide effective information about the organization's internal and external environment and problems, clearly present the organization's strengths and weaknesses, and motivate the organization to integrate strengths to maximize opportunities and avoid risks (Chen Ying, 2016). The SWOT analysis diagram is shown in Figure 2.1.

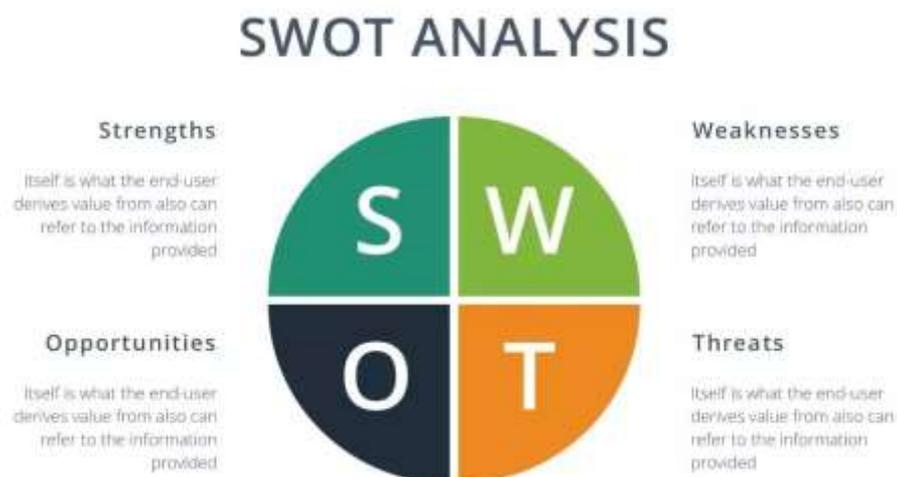


Figure 2.1 SWOT Analysis

PEST analysis was proposed by British scholars Jerry Johnson and Kevan Scholes in 1998 in their book *A Tutorial on Corporate Strategy*. The PEST analysis method analyzes the research object from the four external macro-environmental factors: politics (P), economy (E), society (S), and technology (T), and explores the opportunities that the external macro-environment brings to the enterprise. and threats, providing analysis, decision-making and reference for formulating corporate strategy. It is a basic tool for analyzing the external environment of corporate strategy (Liang Weijun, 2012). The PEST analysis framework is shown in Table 2.6.

By applying the PEST analysis model, the external environment of higher vocational education in Guangdong Province can be clearly analyzed through the four aspects of politics, economy, society, and technology.

**Table 2.6** PEST analysis framework table

abbreviation	Elements of PEST Analysis	Subdivision features
P	Political and legal environmental factors	Political systems and institutions, government macroeconomic policies, industrial policies, fiscal and taxation policies, government subsidy policies, laws and regulations
E	Economic environment factors	Socio-economic structure, economic development level, economic system, market mechanism, gross domestic product (GDP), energy supply cost, market demand
S	Social environment factors	Cultural traditions, social customs, environmental concerns, demographics
T	Technical environment elements	Product innovation, knowledge application, new technology application

Both SWOT and PEST analysis methods have their own advantages and disadvantages. SWOT focuses on the analysis of the internal microstructure of the institutional system, while PEST focuses on the analysis of the external macro-environment of the system (Wang Han & Tang Guangrui, 2018). In order to give full play to the advantages of the two analysis methods and make up for their shortcomings, this study uses the SWOT analysis and introduces the PEST analysis method to form a SWOT-PEST analysis matrix model to conduct a systematic analysis and research on the current situation of equity in higher vocational education in Guangdong Province.

The SWOT-PEST analysis matrix refers to systematically combining the internal micro-environment and the external macro-environment of the research object to construct a SWOT-PEST analysis matrix to systematically analyze the political, economic, social, and technological advantages and disadvantages of the research object, and identify the opportunities and risks to be faced, identify key influencing factors, and formulate strategic development plans (Wang Ana, 2014). In addition to being suitable for strategic guidance of profit-oriented social enterprises, the SWOT-PEST analysis method is also suitable for systematic analysis of the development environment of national government departments, public institutions, and other public service institutions to determine whether the research object has broad development prospects. Prospect is a research method that focuses on solving practical problems (Bai Chunhou, 2015). The SWOT-PEST analysis framework is shown in Table 2.7.

**Table 2.7** SWOT-PEST analysis matrix table

PEST Factors SWOT Factors	Politics (P)	Economy (E)	Society (S)	Technology (T)
Advantages (S)	SP	SE	SS	ST
Disadvantage (W)	WP	WE	WS	WT
Opportunity (O)	OP	OE	OS	OT
Threat (T)	TP	TE	TS	TT

The SWOT-PEST analysis method allows for a more comprehensive analysis of the internal strengths, internal weaknesses, external threats and external opportunities of higher vocational education equity in Guangdong Province from the political, economic, social and technological perspectives, on the basis of which alternative strategic plans can be developed.

#### 4. TOWS Analysis Matrix

TOWS analysis method is Harvard Business School Andrews in his "Enterprise Strategy Concept" (Andrews, 1980) proposed in the book, TOWS in the four letters of the alphabet respectively represent Threat, Opportunity, Weakness, and Strength. TOWS Matrix Analysis Belongs to the situational analysis method, that is, on the basis of the analysis of the internal and external environment of an economic entity, respectively, the various influencing factors are categorized, you can get the advantages (S), disadvantages (W), opportunities (O) and threats (T) four kinds of strategic factors; respectively, the internal advantages and external opportunities, internal disadvantages and external opportunities, internal strengths and external threats, internal disadvantages and external threats, and then form the TOWS matrix; TOWS matrix can be derived from SO strategy, WO strategy, ST strategy and WT strategy and other corresponding four strategic programs, and then based on the strategic programs to determine the feasible strategy for the future development of economic entities.

In "Corporate Strategy and Management" (2007), Kim Yun-gyu points out that SO (Opportunity-Opportunity) strategy is a strategy in which a company effectively seizes and utilizes external opportunities by exploiting its internal strengths, and WO (Weakness-Opportunity) strategy aims to compensate for the internal weaknesses of the company by effectively utilizing external opportunities. ST (Strengths-Threats) strategy utilizes a firm's internal strengths to avoid or mitigate the impact of external threats. WT (Weaknesses-Threats) strategy is a strategy that overcomes internal weaknesses and avoids threats from the external environment.

The TOWS analysis can reflect the firm's strategic panorama through the TOWS matrix (see Tables 2-8).

**Table 2.8** TOWS Analysis Matrix

TOWS Portfolio Strategy	Strength	Weakness
Opportunity	SO strategy Build on strengths, capitalize on opportunities	WO Strategy Capitalize on opportunities, compensate for disadvantages
Threat	ST Strategy Capitalize on Strengths, Avoid Threats	WT Strategy Reduce disadvantages and avoid threats

Through the SWOT-PEST analysis method, a more comprehensive analysis of the internal advantages, internal disadvantages, external threats, and external opportunities in the equity of higher vocational education in Guangdong Province can be conducted from political, economic, social, and technological aspects and based on this, we can formulate alternative strategic options.

#### 5. Likert five-point scale scoring method

Since Likert (1932) proposed the Attitude Measurement Method, the Likert Scale has become the most widely used measurement tool in survey research,

especially in educational evaluation, market research, environmental assessment, etc. The scale consists of a set of statements. Each statement has five responses: "strongly agree," "agree," "indifferent," "disagree," and "strongly disagree," with corresponding scores of 5, 4, 3, 2, and 1, respectively. The total attitude score of each respondent is the sum of the scores obtained by answering each question, which is used to indicate the strength of the respondent's attitude towards a certain statement or the different states on this scale (Liu Yingxia, 2024).

The design of the scale includes two steps: the first step is "assignment", which assigns different values to different attitude characteristics according to the set rules. The second step is "positioning," which involves arranging or forming a sequence of these numbers and positioning the respondents on this sequence according to their different attitudes. The numerical nature of attitudes in scales serves two purposes. First, numbers facilitate statistical analysis; second, numbers make attitude measurement activities themselves easier to compare (Yan Ping et al., 2008).

Using the Likert five-point scale scoring method can provide an objective, comparative, and actionable evaluation for this study, thereby supporting the formulation and implementation of sustainable equity strategies for higher vocational education in Guangdong Province.

In summary, this study will use the 4M method to analyze internal factors and the PEST method to analyze external factors; construct SWOT and TOWT analysis matrices based on 4M and PEST analysis, formulate a strategy draft; use the Likert scale to evaluate the strategy draft, and finally obtain the sustainable equity strategy for higher vocational education in Guangdong Province. See Table 2.9 for a list of strategy-related theories and research tools.

**Table 2.9** List of strategies-related theories

Theory name	Core ideas	Implications for this study
Marxist Philosophy	<p>1. People can understand the objective world through practice and transform the world through practice.</p> <p>2. Scientific methods of understanding include observation and experiment, induction and deduction, analysis and synthesis, abstraction and concreteness, etc.</p>	It can guide people to correctly understand the connections, laws, status, and functions of higher vocational education.
4M Method	<p>It refers to the first four letters of the English letters of operator (Man), machinery (Machine), raw material (Material), and method (Method). These four M's are used in the quality defect method and are called the four major factors.</p> <p>Internationally, the "4M" method is usually used to analyze internal influencing factors.</p>	The use of the 4M method can provide a more comprehensive analysis of the internal factors of equity in higher vocational education in Guangdong Province.

Table 2.9 (Continued)

Theory name	Core ideas	Implications for this study
SWOT-PEST Analysis Matrix	Systematically combine the internal micro-environment and external macro-environment of the research object to construct a SWOT-PEST analysis matrix to systematically analyze the political, economic, social, and technological advantages and disadvantages of the research object, as well as the opportunities and risks it faces. , identify the key influencing factors.	Through the SWOT-PEST analysis method, a more comprehensive analysis of the internal advantages, internal disadvantages, external threats, and external opportunities in the equity of higher vocational education in Guangdong Province can be conducted from political, economic, social, and technological aspects and based on this; we can formulate alternative strategic options.
TOWS Analysis Matrix	Taking into account the external and internal factors faced, four types of strategies are designed for strategic managers. By matching factors, these strategies help organizations or individuals develop more focused strategies.	The use of the TOWS analysis matrix can fully consider the internal and external factors facing higher vocational education in Guangdong Province and make targeted efforts to grasp the opportunities, fully exploit the advantages, compensate for the disadvantages, and properly deal with the threats so as to formulate a more scientific and feasible strategy.

Table 2.9 (Continued)

Theory name	Core ideas	Implications for this study
Likert five-point scale scoring method	Decompose the evaluation target into several indicators and assign weights. Design a scale to distinguish grades for each indicator. Then, the respondents were surveyed using the scale. The obtained survey data will be weighted and aggregated to obtain the score of the evaluation target.	Using the Likert five-point scale scoring method can provide an objective, comparative, and actionable evaluation for this study, thereby supporting the formulation and implementation of sustainable equity strategies for higher vocational education in Guangdong Province.

### Main influencing factors of strategy

Strategy formulation is a very complex process, affected by various macro and micro factors. Strategies formulated for different areas have different influencing factors.

Andrews proposed in the book "Strategic Management Concepts" that four factors should be considered in the strategy formulation stage. What you can do (market opportunities), what you can do (internal resources and capabilities), what you want to do (Personal ambition), and what you should do (social responsibility), among which market opportunities and social responsibility are the external environmental factors for the survival and long-term development of the enterprise; the company's strength and personal values and desires are the internal motivations for the sustainable development of the enterprise. The formulation stage is about finding the best fit for four factors. Andrews also gives a list of key questions that should be considered in formulating a company's strategy: 1) Can this strategy be identified and understood? 2) Is it unique? 3) Has this strategy fully considered and

utilized various domestic and foreign opportunities? 4) Does this strategy match the company's capabilities? 5) Are the company's actions consistent with this strategy? 6) What is the economic and human resources level of risk and feasibility? 7) Does the strategy match the personal values and expectations of key managers? 8) Does the strategy contribute to society's expectations? 9) Does the strategy help inspire organizational commitment? And efforts? 10) Are there signs of early market reaction to this strategy? (Xiang Baohua & Luo Qingjun, 2002)

Li Yugang and Bai Pu (2000) believe that factors affecting strategy formulation behavior can be divided into internal and external influencing factors. Internal factors that affect strategy-making behavior mainly include the decision-making style of the decision-maker, business scope, size, and development stage. External factors that affect strategy-making behavior generally include the type of industry, competitive conditions, political, economic, technological, cultural, and other conditions.

Wang Hongwei & Wang Qingjun (2007) in the famous strategic management scientist Henry. Based on Mintzberg's classification of ten schools of thought on strategy, he divided some schools of thought on strategic management into external factors school, internal factors school, and comprehensive factors school according to the standard of the source of strategic factors. They believe that there are many factors that influence corporate strategy. Simply emphasizing internal and external factors is relatively one-sided when formulating or executing a strategy; internal and external factors must be brought together.

To sum up, the formulation of strategies is affected by many internal and external factors. We cannot consider external factors or internal factors one-sidedly, but we should comprehensively consider both to guide the formulation of scientific strategies.

### **Principles and steps for formulating strategies**

#### **1. Principles for formulating strategies**

Zhou Peiyu (2008) proposed that the principal purpose of formulating strategic planning has only one purpose, which is to ensure that strategic planning is

scientific and guiding. The scientific nature is to prevent the strategy from deviating from the actual situation of the enterprise, while the guiding nature is to prevent the strategy from being ineffective, wasting the company's material and financial resources, and ultimately leading to the failure of the company. The following are the basic principles of strategic planning, mainly:

1) Principle of Purpose

Strategic planning has a strong purpose. It should be able to help enterprises choose the development direction, where to go, and how to go. From the results point of view, it is about how to achieve the goals at each stage, and from the value form point of view, it is related to the needs of the entire enterprise. What kind of organization should we build, and what ideals and aspirations should we achieve? Therefore, the principle of purpose is the most important principle of strategic planning.

2) The principle of highlighting the key points

No focus means no direction and no strategic focus. This principle requires that key issues that significantly impact the survival and development of the enterprise should be the focus of strategic planning. Efforts should be concentrated on the most important points to find breakthroughs rather than spreading energy and using resources evenly.

3) Principles of sustainable development

Sustainable development is the ideal form of enterprise growth and a necessary condition for an enterprise to remain viable. The core of sustainable development is the scientific outlook on development, which means adhering to the people-oriented approach, establishing a comprehensive, coordinated, and sustainable development outlook, and promoting the all-round development of the economy, society, and people. For enterprises, sustainable development must, on the one hand, solve the substitution problems of technology, products, systems, industries, etc.; on the other hand, it must also solve the problems of enterprise development and environmental protection, with the focus being on how to develop a circular economy. The faster the substitution of technologies, products,

systems, industries, etc., indicates the more development potential the enterprise has, and the stronger the circular economy capability, the more vitality the enterprise has for development.

#### 4) Dynamic principle

Strategic planning requires full prediction of the future of the enterprise, especially scientific foresight of the future development environment of the entire enterprise and the changes that the enterprise itself may experience. The corporate strategic cycle is generally 3 to 5 years. No matter how scientifically predicted, it is difficult to completely predict the changes in the internal and external environment of the company in the next 3 to 5 years. Therefore, strategic planning must leave room for and maintain a certain degree of dynamics. If the strategy itself is too rigid, the company will be at a loss when the internal and external environments undergo major changes after one day of implementation.

#### 2. Steps in formulating strategies

In the development process of strategic management, the original and most influential theoretical model was the model jointly established by Hofer and Schendel. The strategic management model they established clearly pointed out the six major aspects of the strategic management process. The elements are strategy formulation, strategy proposing, strategy evaluation, strategy selection, strategy implementation and strategic control (Chen Yijun, 2006). Strategic planning is generally divided into four stages: strategic analysis, strategy formation, strategic evaluation, and strategy implementation (He Haiyan, 2009). The strategic management model of Hoffer and Schendel (see Figure 2.3) laid the foundation for strategic management theory and is, therefore, a major contribution they made to the development of strategic management theory.



**Figure 2.2** Hofer and Schendel's Strategic Management Model Diagram

Xu Erming (2002) proposed that strategy formulation is a process in which an enterprise's decision-making body organizes all aspects of power and selects an appropriate business strategy for the enterprise in accordance with certain procedures and methods. The general process of formulating a strategy can be divided into the following four steps:

1) Analyze the internal and external environment of the enterprise

By measuring and evaluating various qualities of the enterprise, enterprises can find out their own situation and clarify their own strengths and weaknesses.

Investigating, analyzing, and predicting the external environment of an enterprise is the basis for formulating corporate strategy. Through environmental analysis, strategy makers should identify the main opportunities and threats faced by the enterprise, be aware of the intentions and future actions of existing and potential competitors, and understand the development of society, politics, economy, military, culture, etc. in the future period. Trends, and the opportunities and challenges that companies face as a result.

2) Prepare a strategic plan

According to the development requirements and business objectives of the enterprise, and based on the opportunities and opportunities faced by the

enterprise, the enterprise lists all strategic plans that may achieve the business objectives.

### 3) Evaluate and compare strategic options

Enterprises determine the evaluation criteria for strategic plans based on the values and expectations of shareholders, managers, and other relevant interest groups and evaluate and compare alternatives according to the standards.

### 4) Determine a strategic plan

On the basis of evaluating and comparing strategic plans, the company selects the most satisfactory strategic plan as a formal strategic plan. Sometimes, in order to enhance the adaptability of the strategy, companies choose one or more backup strategic options.

## **Strategic Assessment**

### **Definition of Strategic Assessment**

Deng Xiaojun et al. (2006) believe that strategic evaluation refers to management activities that take the implementation process and its results of strategy as the object and judge whether the strategy achieves the expected goals by summarizing and analyzing the various elements that affect and reflect the quality of strategic management. Strategic evaluation is generally divided into three levels: pre-event, ongoing, and ex-post evaluation. Pre-event evaluation, that is, strategic analysis and evaluation, is an assessment of the current environment of the enterprise, and its purpose is to discover the best opportunities; in-event evaluation, that is, strategic choice evaluation, is carried out during the execution of the strategy and is The timely acquisition and timely processing of the differences between strategy implementation and strategic goals is a dynamic assessment and belongs to in-process control; post-event evaluation, that is, strategic performance assessment, is the analysis, evaluation, and prediction of the completion of strategic goals in the later period. It is a comprehensive assessment and is an after-the-fact control.

Guo Biyu (2010) believes that strategic assessment is the overall evaluation and evaluation of strategic management, which is divided into strategic analysis

assessment, strategic choice assessment, and strategic performance assessment. The three assessments are interconnected and support each other.

Zhang Qinghui (2013) believes that strategic evaluation is the behavior of strategic subjects to conduct real-time evaluation and dynamic adjustment of strategies as the environment changes. It runs through the entire process of strategic management and is divided into strategic analysis links, strategic selection links, and strategy implementation link evaluations. In the strategic analysis link, strategic evaluation focuses on applicability analysis. In the strategy selection process, strategic assessment focuses on feasibility analysis. In the strategy implementation phase, strategy evaluation focuses on acceptability analysis.

Zheng Junsheng (2020) believes that strategic assessment refers to the work carried out after proposing many strategic plans based on various strategic assumptions. Its purpose is to confirm the feasibility and effectiveness of each strategic plan and, according to its feasibility and effectiveness, identify a few corporate strategy alternatives among many.

To sum up, this study defines strategic assessment as the evaluation and estimation of the entire strategic management process, including the comprehensive evaluation of strategy formulation, implementation, and results. It covers three stages: strategic analysis and evaluation, strategic option evaluation, and strategic performance evaluation, aiming to confirm the feasibility, effectiveness, and sustainability of the strategic plan.

### **The role of strategic assessment**

Zheng Junsheng (2020) proposed that the evaluation of corporate strategy plays the following important roles in strategic management:

- 1) Strategic evaluation is an important part of strategic management, which ensures the effective implementation of strategy.
- 2) The strategic assessment ability level determines the strategy implementation ability level. With strong strategic evaluation capabilities, strategic decision-makers can formulate risky strategic goals.

3) Strategic evaluation can provide important feedback for strategic decision-making and help decision-makers clarify what is realistic and feasible in decision-making and what is unrealistic and unfeasible. This plays an important role in improving strategic decision-makers' adaptability and decision-making capabilities.

4) Strategic evaluation has a motivating effect, can mobilize the enthusiasm of all employees, and coordinates employees' personal goals with the organization's strategic goals. The assessment results can be used as the basis for corporate personnel decisions and rewards and punishments.

### **Principles of strategic assessment**

Jin Rungyu (2007) proposed that the evaluation principles mainly include the following four points:

1) Comprehensiveness. Many companies conduct evaluations, often evaluating only a certain performance. This is not only one-sided but also dangerous. The evaluation should comprehensively analyze the strategy, combine short-term and long-term indicators, and make corresponding changes.

2) Economical. Assessment requires the investment of a certain amount of manpower, material resources, and financial resources and must follow the principle of economy to make the assessment produce corresponding benefits. Take the collection of strategic assessment information as an example. This requires a certain cost. Excessive information will not only consume a lot of resources but also be not necessarily beneficial to the assessment. It may also affect the timeliness of the assessment.

3) Objectivity. The evaluation should truthfully reflect the implementation of the strategy, make an equity evaluation, and communicate the evaluation results to relevant departments in a timely manner so that measures can be taken to ensure the effective implementation of the strategy.

4) Scientific pieces. Assessment must be based on correct ideas, determine reasonable content, and use scientific methods to make correct assessments.

### **The framework of strategic assessment**

Liu Ligang (2010) proposed that the framework of evaluation strategy includes:

1) Information input for strategic plan evaluation. Strategic plans have different contribution rates in different organizational environments. The first step in program evaluation is to determine the adaptability of the strategic program to the organizational characteristics and the possibility of each selected strategy;

2) Evaluation of program applicability. Adaptability is mainly evaluated from the perspectives of strategic logic, culture, and empirical evidence. Practicality is used to assess how well the proposed strategy fits the company's own actual circumstances and how it will maintain or improve the company's competitive position.

3) Feasibility and acceptability evaluation mainly analyzes the rate of return, risks, stakeholder expectations, and feasibility of the strategic plan. Feasibility mainly describes whether the enterprise can successfully implement the strategy, that is, whether the resources and capabilities required to implement the strategy exceed the constraints of the enterprise or are what the enterprise can afford. Acceptability depends largely on the expectations of stakeholders during strategy implementation. The acceptability of a strategic plan is higher if its outcomes are consistent with stakeholder expectations.

## **Higher Vocational Education**

### **Definition of Higher Vocational Education**

After years of development, the concept of higher vocational education has gradually become clear in China's legal and policy documents. In 1996, Article 13 of the Vocational Education Law of the People's Republic of China ("Vocational Education Law of the People's Republic of China," 1996) clarified the status and scope of higher vocational education for the first time, dividing it into elementary, secondary and higher vocational school education., and stipulates that higher vocational school education shall be implemented by higher vocational schools or

ordinary institutions of higher learning according to needs and conditions. Subsequently, in 1999, the Ministry of Education collectively referred to higher vocational education, higher vocational education, and adult higher education as "higher vocational education" and carried out comprehensive planning. In 2000, the "Opinions of the Ministry of Education on Strengthening the Cultivation of Talents in Higher Vocational and Vocational Education" ("Notice of the Ministry of Education on Issuing the Opinions of the Ministry of Education on Strengthening the Cultivation of Talents in Higher Vocational and Vocational Education," 2000) clearly stated Higher vocational education is an important part of my country's higher education. Its goal is to cultivate people who support the party's basic line, adapt to the needs of the front line of production, construction, management, and service, and develop in an all-round way morally, intellectually, physically, and aesthetically. High-tech applied professionals. In 2011, the Ministry of Education issued the "Guiding Opinions of the Ministry of Education on Promoting the Coordinated Development of Secondary and Higher Vocational Education" ("Ministry of Education's Guiding Opinions on Promoting the Coordinated Development of Secondary and Higher Vocational Education," 2011) stating that higher vocational education is an important part of higher education, focusing on cultivating high-end skilled talents. In 2022, the Vocational Education Law of the People's Republic of China ("Vocational Education Law of the People's Republic of China," 2022) further defined vocational education, which refers to the purpose of cultivating high-quality technical and skilled talents and equipping the educated to engage in a certain occupation. Education is implemented to achieve professional, comprehensive qualities and action abilities such as professional ethics, scientific culture and professional knowledge, technical skills, etc., required for career development, including vocational school education and vocational training. Vocational school education is divided into secondary vocational school education and higher vocational school education. Higher vocational school education is implemented by higher vocational schools and ordinary colleges and universities at the junior college, undergraduate and above education levels.

In addition, domestic academic circles have also conducted in-depth discussions on higher vocational education. Gu Mingyuan (Gu Mingyuan, 1998) defined higher vocational education as the "third education level" synonymous with higher education, clarifying the positioning of higher vocational education as both higher education and vocational education. Chen Houfeng (2011) defined higher vocational education as a type of higher education that undertakes the task of vocational higher education, and its goal is to cultivate technical senior professionals. Tuo Fei (2020) emphasized the differences between higher vocational education and general education from the perspective of practice and teaching, especially in terms of professional structure, curriculum system, practical teaching, and teacher-team construction.

This study adopts the definition of the Ministry of Education. Higher vocational education is an important part of higher education. It aims to cultivate high-quality technical and technical talents and equip the educated with the professional ethics, science, culture, and skills needed to engage in a certain occupation or achieve career development. Higher vocational school education is implemented based on professional knowledge, technical skills, and other comprehensive professional qualities and action abilities.

#### **Positioning and mission of higher vocational education**

The positioning and mission of higher vocational education have been clearly defined and emphasized in China's education policies and development plans.

In 2000, the "Opinions of the Ministry of Education on Strengthening Talent Cultivation in Vocational and Vocational Education" (2000) emphasized that vocational and technical education is an important part of higher education in my country.

In 2010, the Ministry of Education and the Ministry of Finance jointly issued the "Notice of the Ministry of Education and the Ministry of Finance on Further Promoting the Implementation of the "National Demonstration Higher Vocational College Construction Plan" (2010), requiring that higher vocational colleges should

better play their role in cultivating higher vocational colleges. High-quality and highly skilled professionals play an important role in promoting employment, improving people's livelihood, building a lifelong education system, and building a learning society.

The "Guiding Opinions of the Ministry of Education on Promoting the Coordinated Development of Secondary and Higher Vocational Education" (2011) issued by the Ministry of Education in 2011 once again emphasized that higher vocational education is an important part of higher education. Its mission is to focus on cultivating high-end skilled talents and play a leading role in the development of the industry.

The fifth meeting of the Central Committee for Comprehensive Deepening Reform in 2018 made vocational education more prominent and clearly stated that it should be in line with technological development trends and market demand to provide high-quality talent resources for economic and social development. This new positioning requires vocational education to cultivate high-quality workers and technically skilled personnel and contribute to promoting economic and social development and improving national competitiveness.

The "National Vocational Education Reform Implementation Plan" (2019) promulgated in 2019 and the "Double High Plan" launched have elevated higher vocational education to a more macro level that serves national strategies, integrates into regional development, and promotes industrial upgrading. Developing higher vocational education is an important way to optimize the structure of higher education and cultivate craftsmen and skilled craftsmen in great countries. This measure requires higher vocational education not only to cultivate high-quality technical skills talents, but also to create a technical skills innovation service platform, promote the industrialization of innovation results and core technologies, and support enterprises' technology research and development and product upgrades.

The 2022 Vocational Education Law of the People's Republic of China (2022) emphasizes that vocational education has the same important status as general

education. It is an important part of the national education system and human resources development, and is an important part of cultivating diversified talents and inheriting technical skills. an important way to promote employment and entrepreneurship. The further clarification and emphasis on the positioning and mission of higher vocational education make it not only to provide employment skills, but also to promote the sustainable development of the social economy, promote the upgrading and optimization of industrial structure, and enhance the country's scientific and technological innovation capabilities, thereby providing Make positive contributions to the development of the country and society.

In addition, the positioning and mission of higher vocational education have also been deeply discussed and explained in the academic community. Jiang Dayuan (2019) pointed out that vocational education has become a major educational measure to serve the country's macroeconomic regulation, assist the country's social stability governance, and improve the quality of the country's human capital, which has extremely profound practical and long-term significance. This shows that higher vocational education is not only a form in the field of education but also an important pillar of national strategy and social stability. Zhao Jingjing et al. (2020) believe that higher vocational education plays an important role in China's education system as the main way to cultivate high-level technical skills and talents. They pointed out that the regional layout of higher vocational education directly affects the spatial structure and quality of human capital, affecting regional industrial transformation upgrading and social development.

Scholars have also put forward new understandings and insights into the positioning and mission of higher vocational education. Traditionally, higher vocational education is regarded as a combination of "advanced" and "vocational", where "advanced" emphasizes students' knowledge level and theoretical literacy, while "vocational" emphasizes students' professional abilities and skill levels. However, Ye Yuting & Fan Weichen (2021) pointed out that higher vocational colleges open the door to higher education, allowing more students from the bottom of society to enjoy the opportunity to receive higher education and help achieve equity

in higher vocational education opportunities. This shows that the mission of higher vocational education is not only to cultivate technical skills and talents but also to promote social equity and inclusion.

To sum up, the positioning and mission of higher vocational education have been continuously clarified and emphasized at the policy level and academia, and it has an important position and mission in our country's education system. Higher vocational education is the main way to cultivate high-quality technical and skilled talents and an important support for serving the country's economic development and social stability. It is also intended to promote the country's economy and society's sustainable development, the upgrading and optimization of the industrial structure, and enhance the country's innovation capabilities, and achieving equity and inclusion in education. With the development of the times and changes in social needs, the positioning and mission of higher vocational education are also constantly evolving and improving (See Table 2.10).

**Table 2.10** List of positioning and mission of higher vocational education from national conferences or policy documents

<b>Years</b>	<b>Name of national conference or policy document</b>	<b>A key statement on the positioning and mission of higher vocational education</b>
2000	Opinions of the Ministry of Education on Strengthening the Training of Talents in Higher Vocational and College Education	Higher vocational education is an important part of higher education in my country
2010	from the Ministry of Education and the Ministry of Finance on further promoting the implementation of the "National Model Higher	Give better play to the important role of higher vocational colleges in cultivating high-quality and advanced skilled professionals, promoting employment, improving people's livelihood, building a

Table 2.10 (Continued)

Years	Name of national conference or policy document	A key statement on the positioning and mission of higher vocational education
	Vocational College Construction Plan."	lifelong education system, and building a learning society.
2011	Guiding Opinions of the Ministry of Education on Promoting the Coordinated Development of Secondary and Higher Vocational Education	Orientation: An important component of higher education. Mission: Focus on cultivating high-end skilled talents and playing a leading role in leading the development of the industry.
2018	The fifth meeting of the Central Commission for Comprehensively Deepening Reforms	Vocational education must be aligned with technological development trends and market demands to provide high-quality talent resources for economic and social development.
2019	National Vocational Education Reform Implementation Plan	Elevate higher vocational education to a more macro level that serves national strategies, integrates into regional development, and promotes industrial upgrading. Developing higher vocational education is an important way to optimize the structure of higher education and cultivate craftsmen and skilled craftsmen in great countries.
2022	Vocational Education Law of the People's Republic of China	Vocational education is a type of education that has the same important status as general education. It is important to the national education system and human resources

Table 2.10 (Continued)

Years	Name of national conference or policy document	A key statement on the positioning and mission of higher vocational education
		development. It is an important way to cultivate diversified talents, inherit technical skills, and promote employment and entrepreneurship.

### The practical significance of developing higher vocational education

Zhang Weijin (2000) proposed that economic development increasingly requires many technical and skill-based talents who can engage in direct production activities on the front line. The original two types of talents in enterprises also need higher vocational training due to the development of science and technology. Therefore, the development of higher vocational education has a very obvious role in promoting our country's optimal allocation of human resources. First of all, it provides various high-level applied talents in urgent need for various social undertakings and promotes economic construction and social development. Second, it enriches and develops the connotation of higher education and adjusts the structure of higher education to a certain extent. At the same time, it also provides employment opportunities for most young people and improves the cultural and quality levels of the entire people.

Maureen T. Hallinan (2004) proposed that vocational education is particularly attractive to students from disadvantaged family backgrounds and provides them with a safety net to avoid unemployment.

Li Chunyou (2006) proposed that vigorously developing vocational education with Chinese characteristics and cultivating tens of millions of highly skilled talents and hundreds of millions of high-quality workers will not only contribute to my country's current basic realization of industrialization, vigorous promotion of informatization, and acceleration of modernization construction It has important

practical significance, and has far-reaching historical significance for the realization of our country's next strategic goals, the future prosperity of the country and the people, and long-term peace and stability.

Xiao Chengping (2009) proposed that higher vocational education is the subsystem most closely related to the economy in the education system. It is an important base for knowledge dissemination and knowledge materialization and runs through every link of regional economic development. With the development and progress of modern science and technology, the role of higher vocational education in promoting social and economic development will become increasingly prominent.

Wallenborn (2010) believes vocational education plays an important role in promoting human capital development and enables countries to benefit from globalization.

Peter Damlund Koudahl (2010) believes that vocational education can provide the labor market with high-quality labor that can adapt to new changes and introduce new technologies. It also strengthens the close connection between the education system and enterprises.

George S. Mouzakitis (2010) believes that general education usually focuses on theory and cannot fully meet the work needs of young people, while vocational education is more closely and directly related to economic and career development and is more conducive to economic growth.

Research by Wang Lei (2011) found that the development of vocational education can promote economic growth, and the average contribution rate of vocational education to economic growth in various regions is 0.23%.

Tam Bang Vu et al. (2012) compared the effects of vocational education and general university education on economic growth through quantitative analysis and believed that vocational education plays a greater role.

Lu Benqiong (2013) believes that the rapid development of higher vocational education has effectively promoted the popularization of higher education, expanded the coverage and coverage of higher education, met people's needs for receiving higher education, brought higher education into the lives of the

public, and provided Ordinary people have equal opportunities to compete and develop upward, which lays a solid foundation for achieving educational equity. Higher vocational education fully respects and understands the characteristics of intelligence, ability, personality, and other characteristics between different people, and based on reality, teaches students in accordance with their aptitude, provides broad development space for learners with different characteristics, and enables everyone to master different knowledge and skills, and be able to learn to Be successful and become talents in different fields.

Backes-Gellner & Geel (2014) pointed out that when comparing the monthly income parameters of Swiss higher vocational education and academic education students when they first entered the workforce, the former was higher than the latter.

Zhou Guangli (2014) believes that higher vocational education is the product of economic development and technological innovation and is the direct driving force for national industrialization.

Zhang Jia (2014) found that the contribution rate of national higher vocational education to the regional economy is 0.36%, which is greater than the 0.23% contribution rate of general undergraduate education to the regional economy.

He Yangyong (2015) pointed out in the article that the vast majority of students participating in dual training in Germany are students who are unable to attend higher education. Dual training enables them to obtain a career and social identity that society respects.

Simon McGrath and Lesley Powell (2016) believe that vocational education is indispensable for promoting sustainable economic development, social justice, and poverty reduction and for contributing to the eradication of poverty, inequality, and injustice.

Further research by Wang Wei & Sun Fangcheng (2017) found that both the scale and quality of vocational education are conducive to my country's economic growth, but the overall impact of vocational education quality is greater.

Li Zhaoqing (2019) proposed that regional economic development is the fundamental goal of developing higher vocational education, and higher vocational education is an important engine for regional economic development. Higher vocational education affects the quantity and quality of human capital, thereby affecting regional economic growth. The accumulation of knowledge and specialized human capital can generate incremental returns and change the returns of other input factors, achieving an overall increase in scale returns, which is important for sustained economic growth. It also plays an important role in stabilizing the industrial structure and satisfying regional economic development.

To sum up, developing higher vocational education is significant for cultivating high-quality talents, promoting economic growth, maintaining social stability, and achieving educational equity. By continuously strengthening support and investment in higher vocational education, we can further play an important role in the national development strategy (See Table 2.11).

**Table 2.11** Statistical table of the practical significance of developing higher vocational education

Researcher	Optimized allocation of talent resources	Promote economic and social development	Promote employment
Zhang Weijin	√	√	√
Walter Mueller & Yossi Shavit			√
Li Chunyou	√	√	
Xiao Chengping	√	√	
Wallenborn	√		
Peter Damlund Koudahl	√	√	
George S. Mouzakitis		√	
Wang Lei		√	
Tam Bang Vu et al.		√	

Table 2.11 (Continued)

Researcher	Optimized allocation of talent resources	Promote economic and social development	Promote employment
Lu Benjong	√		
Backes-Gellner & Geel			
Zhou Guangli		√	
Zhang Jia		√	
He Yangyong			√
Simon McGrath & Lesley Powell			
Wang Wei&Sun		√	
Fangcheng			
Li Zhaoqing	√	√	√
<b>Total</b>	<b>7</b>	<b>11</b>	<b>4</b>

### Problems of Inequity in Higher Vocational Education

Dong Renzhong et al. (2011) believe that the government does not pay enough attention to higher vocational colleges. In reality, the differentiated treatment of higher vocational colleges and ordinary undergraduate colleges is more prominent, and the funding guarantee for higher vocational colleges is relative to the actual demand. Government functions are seriously lagging behind; the transformation of government functions is not in place, the government's guidance and management of higher vocational colleges still takes the form of administrative documents and orders, and higher vocational colleges lack autonomy in running schools.

Xu Juan & Jia Yongtang (2019) proposed that the chaos in the flow of high-level talent in universities is rooted in the lack of effective government regulations and market design. The distortion of incentives under the promotion championship system causes local government talent work to cause market congestion in the layer-

by-layer administrative subcontracting; the opportunism of universities in the principal-agent process makes high-level talents become a coded existence; high-level talents The authoritarian reconstruction derived from the unconventional pricing mechanism; the market failure under the imperfect system and the market failure caused by the market function defects intertwined and interacted to outline a picture of double failure.

Pan Xingxia et al. (2020) pointed out that my country's regional higher education development level has a gradient distribution pattern with higher east and lower west. The regional imbalance is increasingly intensified, and the spatial spillover effect of the higher education development level is significant, showing spatial agglomeration and Characteristics of low temporal liquidity. This is mainly affected by factors such as the level of economic development, industrial structure, human capital level, and government support, leading to an increasing gap between educationally developed areas and underdeveloped areas.

Cheng Yu (2021) pointed out that there are still many problems in my country's vocational education, including supply and demand imbalance, alienation of policy and practice, unreasonable structure, urgent need to optimize the layout, unclear government and market responsibilities, absence of business entities, weak overall school running conditions and Problems such as unblocked institutional mechanisms. This lagging development of vocational education has become an important bottleneck hindering my country's economic development and the implementation of national strategies and needs to be solved through reform and innovation.

Zhang Dexiang and Jia Xiao (2022) proposed that the structural contradictions in my country's higher education layout are mainly manifested in three aspects: the excessive gap in the allocation of higher education resources between regions and the gap in the ability of higher education between regions to provide local talent and technological support. The gap in high-quality higher education opportunities between regions is significant.

Chen Dequan & He Yangyong (2022) pointed out that compared with academic education, higher vocational education has a lower status. In many cases, it is not the student's active choice. Secondly, there is inequality in investment in education and teaching between higher vocational education and general undergraduate education. In 2021, "Looking at the per-student investment in education, the average investment in general colleges and universities across the country is 38,681 yuan, an increase of 6.60% over the previous year, while the per-student investment in higher vocational and vocational education is 21,708 yuan, a negative increase of 2.31% over the previous year. Compared with 2016, the growth rate of per-student education funding in general colleges and universities across the country was 27%, while the growth rate of per-student funding investment in higher vocational and vocational education was only 5.3%."

Han Song & Zhang Baoge (2021) believe that the process of popularizing higher education has promoted the transformation of resource allocation in my country's universities. However, due to the incomplete transformation of government functions, imperfect market mechanisms, uneven regional economic development, and universities' inability to adapt to market resource allocation, Reasons such as this have led to large gaps in the allocation of higher education resources between regions and schools, and the problem of uneven development has become prominent.

Wang Yiqing (2023) proposed that my country's higher education resource allocation shows significant uneven characteristics, such as regional imbalance in higher education resource allocation, inter-school imbalance, discipline imbalance, etc., especially the impact of uneven higher education resource allocation among regions. The most extensive and deeply researched. The uneven allocation of higher education resources among regions not only affects the realization of educational equity but also hinders the full utilization of higher education resources.

Gao Yao & Qiao Wenqi (2021) pointed out that the absolute difference in per-student funding for higher education in my country shows a trend of rapid expansion, but the relative difference is relatively stable. This is closely related to

factors such as per capita GDP, fiscal decentralization, and the government's willingness to invest in education, while the size of higher education students has a negative effect on funding.

Xu Xiaoqin (2020) proposed that there are imbalances in higher vocational education in Guangdong Province in three aspects: There is an imbalance between the layout scale of higher vocational colleges in Guangdong Province and educational opportunities, which is mainly reflected in the layout of higher vocational colleges and regional population size, higher vocational colleges educational opportunities, etc. Secondly, there is also an imbalance between higher vocational education and regional economic development in Guangdong Province, which is reflected in the scale of higher vocational education and regional economic development, and the regional economic burden of higher vocational education. In addition, through the analysis of human, material, and financial investment in higher vocational colleges in different regions, it was found that there is also an imbalance in regional higher vocational education investment in Guangdong Province.

Wan Weiping et al. (2021) found through research that: 1) Financial investment in higher vocational education is almost at the same frequency as regional economic development. In some areas of Guangdong Province, the proportion of social investment in higher vocational education is low or even significantly absent. Most areas with relatively weak economic foundations have not yet established a per-student funding mechanism for higher vocational education and a high-level guarantee mechanism for the total financial investment of smaller institutions. 2) The financial special project for higher vocational education does not pay enough attention to generally strengthening the foundation and making up for shortcomings. In the field of higher vocational education, provincial finance is more under the framework of a municipal-based financial security system. Relevant departments of the provincial government also vigorously advocate and demand to strengthen the foundation and make up for shortcomings, rather than make greater efforts. The results do not match Guangdong's status as a large and powerful economic province.

Ye Yuting & Fan Weichen (2021) pointed out that about 70% of higher vocational students come from rural areas and become first-generation college students in millions of families, which shows that higher vocational education plays an important role in intergenerational transmission. However, in comparison, general undergraduate education is more popular, especially among students from families with higher education levels, who are more likely to choose 985 universities. This reflects the deficiencies in social status and recognition of higher vocational education, and students often do not take the initiative to select higher vocational education.

To sum up, there are many inequity problems in higher vocational education, including the absence of government, imbalanced regional layout, imbalanced resource allocation, and low social recognition. These problems have seriously affected the equity and quality of higher vocational education and urgently need the attention and improvement of the government and all sectors of society (See Table 2.12).

**Table 2.12** Statistical table of inequity problems in higher vocational education

Author	Absence of government	Imbalance in regional layout	Resource allocation imbalance	Low social acceptance
Dong Renzhong et al.	√			
Pan Xingxia et al.	√			
Pan Xingxia et al.		√	√	
Cheng Yu	√	√	√	
Zhang Dexiang&Jia Xiao			√	
Chen Dequan & He Yangyong			√	√
Han Song & Zhang Baoge	√		√	
Wang Yiqing		√	√	

Table 2.12 (Continued)

Author	Absence of government	Imbalance in regional layout	Resource allocation imbalance	Low social acceptance
Gao Yao & Qiao Wenqi	√		√	
Xu Xiaoqin		√	√	
Wan Weiping et al.	√		√	
Ye Yuting & Fan Weichen				√
<b>Total</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>4</b>

## Related Research

### Foreign research and practical results

#### 1. United States

Today, American higher education has reached a state of development with sufficient total volume, coordinated structure, and balanced layout. This stable situation is inseparable from the federal government's implementation of the New Deal and the balanced relationship among various higher education resource allocation entities.

The government implements the New Deal. Presidents Kennedy and Johnson, who were in power in the 1960s, inherited the tradition of the "New Deal", emphasized social equity, and solved domestic and foreign crises through legislative and administrative measures, thus creating a glorious era of equal opportunities for higher education. The U.S. federal government's measures to intervene in equal opportunities for higher education are mainly reflected in five aspects: desegregation of colleges and universities, student financial aid, compensatory education plans, developing college plans, and affirmative action plans, and have effectively promoted equal opportunities for higher education. Process (Hao Yanping, 2013).

Balance the relationship among subjects in allocating higher education resources (Hao Yanping, 2013). 1) The government mainly exercises the power of

legislation and administrative management of higher education. The federal government affects higher education in the United States through legislation and appropriations, while local governments administer higher education through departments such as the Higher Education Commission. The purpose of the government's intervention in the allocation of higher education resources is mainly to promote and ensure the improvement of educational quality in higher education institutions through macro-control means and does not involve specific school-related matters. The school has the independence of academic freedom and university autonomy. The government's administrative power and the academic autonomy enjoyed by universities are bound by each other, allowing universities to have a considerable degree of freedom in running schools. 2) The market plays a fundamental role in allocating higher education resources, and universities have relatively high autonomy. On the one hand, the scale, subject setting, and teaching objectives of American colleges and universities will be regulated by the constraints of the higher education consumer market and the human resources market; on the other hand, with the development of higher education, people are deeply aware of its the promotion of economic development attracts the market to invest more resources in higher education. The market-based higher education resource allocation mechanism in the United States, where the government and universities jointly participate, has formed a diversified higher education financing channel. At the same time, it has given universities multiple educational purposes and functions, allowing their higher education to achieve a relatively large number of resources. A sufficient and balanced development stage.

## 2. Germany

E Tian (2018) found that, since 2015, in order to implement the Global Action Plan and the 2030 Sustainable Development Goals and maintain the leading position of vocational education in the world, Germany has launched a new round of systematic, sustainable development education in the field of vocational education based on its national conditions. The reform has integrated the basic principles and concepts of international sustainable development into the entire German vocational

education system and launched a series of sustainable development and Strategic plans related to vocational education reform. The reform areas cover various types of education in the education system. The education reform for sustainable development in the field of vocational education and training has five major characteristics: 1) Revise vocational education laws and regulations to ensure the quality of BBNE reform; 2) Identify key priority development areas and break through the key points of BBNE reform in an orderly manner; 3) Based on sustainable development Develop action standards and build a sustainable development capability model; 4) Curriculum-oriented and integrate sustainable development capability requirements; fifth, participate in multiple subjects and collaboratively promote BBNE reform. Germany's BBNE reform provides a new reform perspective and valuable action reference for my country's integration of sustainable development education into the vocational education system.

### 3. United Kingdom

Wang Yiqing (2023) found that, in addition to influencing the allocation of higher education resources through financial allocations, the British government also uses legal guidance and economic regulation to encourage universities to independently raise higher education funds through multiple channels such as student tuition fees, social donations, and foreign research cooperation income. The UK's government-led market-oriented higher education resource allocation system has gradually improved. Government financial allocation is still the main body of higher education resource allocation. The current British higher education resource allocation system mainly has several characteristics, such as diversifying fund-raising channels, improving the quality of school running, and promoting the transformation of research results. The government has always played an active role in guiding and regulating the allocation of higher education resources in the UK. Properly setting up non-governmental public welfare institutions to supervise the allocation of higher education financial resources, giving full play to the government's macro-control role in higher education resource allocation, and guiding market funds to promote the

development of higher education are worthy references in the market-oriented reform of higher education resource allocation in the UK. Experience and practice.

#### 4. Australia

Le Chuanyong (2001) found that, in order to ensure the quality of education, since the 1970s, the Australian government has actively developed the national "Key Competency Standard" (Key Competency Standard) and "Training Package" (Training Package), which includes assessment standards, learning materials, learning processes, Uniform provisions have been made on teacher training, teaching materials, and other contents to ensure equal access to educational resources.

In 1973, Australia abolished tuition fees at universities and higher education colleges to improve access to disadvantaged students from the community. In 1988, the Australian government announced the "user pay" principle and implemented the "High Education Contribution Scheme-HECS". On the one hand, students are required to pay fees to go to school; on the other hand, for the tuition fees of children of laborers and children from poor families who are obviously at a disadvantage, the government agrees to provide students with subsidized loans, which will be repaid when the students graduate and find jobs. Since the 1970s, Australia has promoted lifelong vocational education and training. Its promotion system is based on cooperation between the government and enterprises (industry). In order to ensure the establishment of close cooperation between the government, training institutions, and industry, the Australian government A series of policies and regulations have been promulgated, such as the Training Guarantee Act of 1990, the Vocational Education and Training Funding Act of 1992, and the Federal Service Provider Act of 1997. The legislation stabilizes the cooperative relationship between the government, training institutions, and industry, ensures the orderly and healthy development of market-oriented higher vocational education, and invests in vocational and technical training funds. For example, the "Vocational Education Law" stipulates that enterprises must bear the vocational education expenses of employees and those preparing to be hired; the "Training Guarantee Law" stipulates that employers with an annual income of more than 226,000 Australian dollars

should use 2% of the salary budget for employee qualification training (Le Chuanyong, 2001).

#### 5. Finland

Song Dan et al. (2020) found that Finland's social security agency has built a mature student financial aid system. It works with educational institutions to provide financial aid to full-time students in high schools, vocational colleges, and higher education institutions. The funding period basically covers the duration of the study. At the higher education stage, full-time students who aim to obtain a higher education degree, vocational qualification certification, or vocational education and training can apply for financial aid. Financial aid consists of student grants, housing subsidies, and state-guaranteed student loans. The amount of aid varies based on the applicant's age, marital status, and mode of residence. Adequate financial aid allows students from any income family to achieve financial independence during their studies. In addition, if students complete a higher education degree within the target time, the Social Security Agency will provide student loan compensation and repay one-third of the student loan to reduce students' financial burden after working. Financial aid runs through the complete education cycle, reducing the differences in educational investment among students' family classes but also helping students successfully complete their studies.

#### 6. Japan

Zhang Wei (2023) found that Japan has formed a relatively complete, multi-level, and multi-type higher education structure, which can be mainly divided into three types of higher education institutions: national, public, and private. Among them, the funding of Chinese universities and public universities is primarily borne by the government. Specific funding sources are clearly stipulated in the School Education Law. Japan's higher education resource allocation system includes a special accounting system for national schools borne by the state, a public university funding system borne by local governments and subsidized by the state, and a private university funding system supplemented by financial subsidies. In this diversified higher education resource allocation system, the government guides the

allocation of higher education resources through appropriations and better implements the development concept of national higher education. The development of Japanese higher education focuses on government guidance and market regulation, forming a relatively complete higher education resource allocation system.

To sum up, our country can learn from the experience of these countries and build a more equity and just higher vocational education resource allocation system through policy, legal and economic means to ensure that all students have equal educational opportunities (See Table 2.13).

**Table 2.13** List of foreign research and practical results

Nation		Main measures
USA	<p><b>The government implements new policies</b></p> <ol style="list-style-type: none"> <li>1. Desegregation of colleges and universities.</li> <li>2. Student financial aid.</li> <li>3. Compensatory education plan.</li> <li>4. Developing college plans.</li> <li>5. Affirmative Action Plan.</li> </ol>	<p><b>Balancing the relationship among subjects in higher education resource allocation</b></p> <p>The higher education resource allocation mechanism based on the market and jointly participated by the government and universities has formed a diversified financing channel for higher education. At the same time, it has given universities multiple educational purposes and functions, allowing its higher education to achieve a relatively sufficient total amount of resources., a more balanced development stage</p>

Table 2.13 (Continued)

Nation	Main measures
Germany	<ol style="list-style-type: none"> <li>1. Revise the laws and regulations on vocational education to ensure the quality of BBNE reform.</li> <li>2. Determine key priority development areas and break through the key points of BBNE reform in an orderly manner.</li> <li>3. Build a sustainable development capability model based on sustainable development action standards.</li> <li>4. Oriented to curriculum teaching and integrated into sustainable development capability requirements.</li> <li>5. Diverse entities participate in promoting BBNE reform collaboratively.</li> </ol>
U.K.	<ol style="list-style-type: none"> <li>1. Properly set up non-governmental public welfare institutions to supervise the allocation of financial resources for higher education.</li> <li>2. Give full play to the government's macro-control role in allocating higher education resources.</li> <li>3. Guide market funds to promote the development of higher education.</li> </ol>
Australia	<ol style="list-style-type: none"> <li>1. To ensure equality of educational resources, unified regulations have been made on assessment standards, learning materials, learning processes, teacher training, teaching materials, etc.</li> <li>2. Implement a "higher education cost sharing system" and agree to provide subsidized loans to disadvantaged students, which will be repaid when students graduate and find jobs.</li> <li>3. Legislation stabilizes the cooperative relationship between the government, training institutions, and industry, ensures the orderly and healthy development of market-oriented higher vocational education, and ensures the investment of vocational and technical training funds</li> </ol>
Finland	<p>Social security agencies have built a mature student financial aid system and work with educational institutions to provide financial aid to full-time students. The funding time limit basically covers the duration of the study. Adequate financial assistance allows students from any income</p>

Table 2.13 (Continued)

Nation	Main measures
	family to achieve financial independence during their studies. In addition, if students complete a higher education degree within the target time, the Social Security Agency will compensate and repay one-third of the student loan to reduce students' financial burden after working.
Japan	<ol style="list-style-type: none"> <li>1. The specific funding sources of each type of college and university are clearly stipulated in the "School Education Law."</li> <li>2. Establish a diversified higher education resource allocation system, guide the allocation of higher education resources through appropriation, and better implement the national higher education development concept.</li> </ol>

### Domestic research and practical results

Li Li (2006) proposed that efforts should be made from the following aspects to solve educational inequality. National and social level: the government should improve the income distribution system and optimize the distribution structure of educational resources; family level: the government should establish and improve the social security system and optimize the social class structure; individual level: the government should strengthen public opinion propaganda to allow those who work hard and compete fairly the concept is deeply rooted in people's hearts.

Lu Yuman & Xu Guoqing (2022) proposed that type characteristics are the key to improving the social status of vocational education and stabilizing its important position in the national talent training system. The prerequisite for optimizing vocational education types' positioning is building a stable modern vocational education system. We must always adhere to the basic status of secondary vocational education, vigorously improve the quality of vocational college education, steadily develop vocational undergraduate education, and constantly

improve the internal and external connection channels of vocational education; The core is to manage vocational education in accordance with the development laws of vocational education and establish a management system based on type characteristics. It is necessary to actively explore cross-department coordination mechanisms and build an educational governance pattern in which multiple subjects collaborate and co-govern. The key is to promote educational equality and improve the society of skilled talents. status and ensure the equity of funding investment in vocational education.

Ke Wei & Wu Haowei (2020) proposed that special laws should be introduced for citizens' equal rights to education; legislation, law enforcement, relief systems, and legal supervision should be combined, and the improvement of the legal system should be used to promote the realization of citizens' equal rights to education. They proposed that to protect citizens' equal right to education; we must improve education legislation, expand judicial relief channels, improve the administrative litigation system for the right to education, improve the education administrative law enforcement supervision system, and attach importance to international cooperation on the equal right to education. Gong Yankai (2019) proposed the need to interpret and analyze the current situation of my country's equal rights to education from a constitutional perspective. Based on the various constitutional issues in my country's citizens' right to equal education at this stage, establish multiple relief systems, construct reasonable differences, establish Constitutional awareness, and further improve the constitutional protection of the right to equal education. Sun Junying (2019) proposed to highlight the concept and principle of equality in protecting citizens' right to education in legislation, formulate the "Education Equity Promotion Law," and improve the Constitution based on the Constitution, the Education Law as the basis, and other types of education laws, regulations and rules as the basis. The legislative system of the overall framework clarifies the specific content of citizens' equal rights to education, adopts various effective safeguard measures, and expands supervision and relief channels.

Li Jin (2010) proposed continuously strengthening investment and ensuring the coordinated development of scale efficiency and quality efficiency by establishing a complete funding resource financing system and policy support system with multiple government, industry enterprises, and social forces. Yang Xiaoli & Chen Hao (2020) proposed that when allocating education funds, the government should introduce relevant fiscal policies and provide corresponding financial subsidies for areas lacking educational resources. Secondly, the government can fully mobilize financial means and build diversified channels for capital investment. Wan Weiping et al. (2021) proposed that in order to promote the regional balanced development of higher vocational education, per-student funding standards for higher vocational education should be established and a long-term mechanism for investment in higher vocational education in underdeveloped areas should be established; the innovation of the municipal financial transfer mechanism should be the focus. We should concentrate financial resources to support underdeveloped areas; focus on enterprise investment and expand social investment channels; build a monitoring mechanism for regional balanced development of higher vocational education; and improve the efficiency of the use of higher vocational education funds.

Xu Guiting (2020) proposed that efforts should be made to promote equity in the higher vocational education process, vigorously strengthen the basic capacity building and management of higher vocational colleges, effectively promote the integration of industry and education into school-enterprise cooperation, increase various investments in higher vocational education, and focus on improving the quality of talent training and employment quality, strive to improve the ability and level of higher vocational education technology to serve economic and social development and find its own position in the wave of social development.

Zou Qianqian & Yu Xiulan (2019) proposed that it is necessary to improve the understanding of higher vocational education, promote the integration of industry and education, reform the training mechanism and training goals of higher vocational education, classify and upgrade horizontally, and integrate the levels of

higher vocational education, and vertically Promote higher vocational education to establish a full-cycle open learning and cyclic learning platform.

Yang Xiaoli & Chen Hao (2020) proposed that the optimal allocation of higher vocational education resources should be based on the actual situation of regional economic development, have an overall concept, plan in advance, make early operations, and adhere to the unity of scale, structure, quality, and efficiency of higher vocational education. Government participation is needed to optimize the allocation of educational resources, combine educational resources, and increase the utilization rate of educational resource allocation; promote the sustainable development of higher vocational education by improving policies and regulations, optimizing the structure of the teaching staff, promoting regional cooperation, and establishing a scientific outlook on development (See Table 2.14).

**Table 2.14** Statistical table of domestic research and practice results

Researcher	Government legislation	Optimize policy	Optimize resource allocation	Diverse participation in school running	Strengthen relief
Li Li	√		√		
Lu Yuman & Xu		√	√	√	
Guoqing					
Ke Wei & Wu	√				√
Haowei					
Ke Wei	√	√			√
Wu Haowei					
Gong Yankai	√				√
Sun Junying	√				√
Li Jin			√	√	
Yang Xiaoli & Chen			√	√	
Hao					
Wan Weiping et al.		√	√	√	

Table 2.14 (Continued)

Researcher	Government legislation	Optimize policy	Optimize resource allocation	Diverse participation in school running	Strengthen relief
Xu Guiting		√	√		
Zou Qianqian & Yu Xiulan		√			
Yang Xiaoli & Chen Hao		√	√		
<b>Total</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>4</b>	<b>4</b>

### Analysis of influencing factors based on the SWOT-PEST analysis matrix

#### 1. Advantage Analysis (S)

##### (1) Political Advantage (SP)

SP1 Guangdong Province attaches great importance to the development of higher vocational education and the promotion of educational equity and has formulated and issued a series of policies and regulations

Guangdong Province has taken a series of measures in higher vocational education to promote its sustainable development and equity. By formulating policies and regulations, implementing action plans, and issuing relevant documents, the government has provided solid support for the reform and development of higher vocational education in terms of the policy environment. In particular, through the promulgation of documents such as the "Guangdong Provincial Vocational Education Regulations", the government has provided legal guarantees for the reform of vocational education and has continuously optimized the policy environment through implementation opinions and measures to promote the high-quality development of vocational education (Guangdong Provincial Department of Education, 2022). Regarding educational equity, Guangdong Province has established a multi-level funding policy system, including national scholarships, grants, student loans, etc., and established a "green channel" system to ensure that students from

families with financial difficulties can enter school smoothly. In addition, special funding policies have been formulated for special groups and ethnic minorities to promote educational equity further.

Vocational colleges in Guangdong Province can use these policies and measures to help special groups successfully complete their studies. Vocational colleges in underdeveloped areas can improve their own educational level with the help of high-level vocational colleges, which effectively promotes educational equity. Table 2.15 shows the main policies of Guangdong Province to promote educational equity.

**Table 2.15** Guangdong Province’s main policies for promoting educational equity

File name	Core perspectives on educational equity
“Implementation Opinions of the People’s Government of Guangdong Province on Deepening Comprehensive Reform in the Education Sector” (People’s Government of Guangdong Province, 2015)	We will do our utmost to ensure equal access to education. We will improve the student aid policy system covering pre-school to higher education, and improve the student aid policy for disabled students. We will fully launch student loans based on student origins. We will streamline the student aid work mechanism and establish a dynamic adjustment system for aid standards.
“Guangdong Province Action Plan to Promote the Equitable and Inclusive Development of Special Education”(Guangdong Provincial Department of Education, 2019)	In accordance with the requirements of "full coverage and zero rejection," we will implement the "one person, one case" policy and ensure educational placement through various means such as attending regular schools, special education schools, special education classes in child welfare institutions (including institutions for the rescue and protection of minors), and home-based education.

Table 2.15 (Continued)

File name	Core perspectives on educational equity
Opinions of the Guangdong Provincial Department of Education and the Guangdong Provincial Department of Finance on Further Improving the Student Financial Aid Policy System (Guangdong Provincial Department of Education & Guangdong Provincial Department of Finance, 2020)	The system ensures that no student from a family with financial difficulties is turned away from school or drops out of school due to financial difficulties. It ensures that students from families with financial difficulties at different stages of education can successfully enroll in the corresponding educational stage and receive education. This is a concrete manifestation of the implementation of the national education equity policy.
"Guangdong Provincial National Student Loan Repayment Assistance Operational Rules" (Guangdong Provincial Department of Education, 2023b)	Implement the national student loan repayment assistance mechanism to effectively help particularly difficult graduating students with loans to solve their financial difficulties.
Guangdong Province Regulations on the Protection of the Rights and Interests of Dispersed Ethnic Minorities (Guangdong Provincial People's Congress Standing Committee, 2022)	<ol style="list-style-type: none"> <li>1. The people's governments of areas with a large population of scattered ethnic minorities shall help the scattered ethnic minorities develop basic education, vocational education, and adult education by providing teachers, financial resources, material resources, etc.</li> <li>2. When recruiting minority candidates from ethnic townships, all colleges and universities should give them lower admission scores in accordance with the autonomous region's policy treatment; for other scattered minority candidates, the relevant national and provincial regulations should be followed.</li> </ol>

Table 2.15 (Continued)

File name	Core perspectives on educational equity
"Notice of the Guangdong Provincial Department of Education on the Implementation of the Vocational Education Pairing Assistance Action Plan (2024-2027)"	High-level vocational colleges in the Pearl River Delta region support vocational colleges in Guangdong's eastern, western, and northern regions.

## (2) Economic Advantages (SE)

SE1 Guangdong Province has a strong economic capacity and willingness to invest in education

Guangdong Province's economic strength continues to grow. In 2023, its regional GDP will reach 13.57 trillion yuan, an increase of 4.8%, ranking first in the country for 35 consecutive years (Guangdong Provincial People's Government, 2024a). This achievement provides solid support for the development of vocational education in Guangdong Province. In terms of investment in vocational education, the Guangdong Provincial Government has actively increased investment. According to the "Annual Report on the Quality of Higher Vocational Education in Guangdong Province" (Guangdong Provincial Department of Education, 2023a), the total investment in higher vocational education in 2022 was 32.831 billion yuan, and the general public budget education funds per student in public higher vocational education reached 20,179.10 yuan, an increase of 1.3% year-on-year, 25.8% higher than the national average. In addition, the Guangdong Provincial Government has arranged 1.2583 billion yuan of special financial funds at or above the provincial level to focus on supporting higher vocational colleges' "expansion, quality improvement, and service enhancement" actions. There is corresponding financial support for the national "Double High Plan" project, the "Innovation and

Strengthening School Project" of higher vocational education, and the construction of provincial high-level professional groups.

Guangdong Province has fully leveraged financial funds' guiding role and provided all-around support for vocational education. It plays an important role in promoting its healthy development, improving the quality of workers, and serving regional economic and social development.

SE2 There is room for the technical talent market in most cities in Guangdong Province

Lin Shaoyun's (2022) research pointed out that in other cities in Guangdong Province, except Shenzhen, Dongguan, and Zhongshan, the employment structure of the secondary and tertiary industries is smaller than the industrial structure, and there is room for absorbing talents.

With the economic development of various parts of Guangdong Province, these cities may need more talents with relevant skills. By meeting these cities' talent needs, higher vocational education can better promote economic development and employment growth while also providing students with broader employment opportunities and development space.

### (3) Social Advantages (SS)

SS1 Guangdong Province's population continues to grow, providing sufficient students for higher vocational education

According to the Guangdong Provincial Information Network (Guangdong Provincial Information Network, 2024), Guangdong Province continues to rank first in the country in terms of population, with a permanent population of 126.568 million at the end of 2022, accounting for 8.97% of the total population of the country. The urbanization development of Guangdong Province shows that the urbanization rate in eastern Guangdong, western Guangdong, and northern Guangdong is faster than that in the Pearl River Delta region, and the difference in population urbanization levels between regions has further narrowed. This trend shows that the overall economic and social development level of Guangdong Province is constantly improving, and the urbanization process in various regions is gradually accelerating,

providing a broader source of students and development opportunities for higher vocational education. With the continuous improvement of the level of population urbanization, vocational education will better meet the talent needs of different regions and promote the sustainable and healthy development of Guangdong Province's economy and society.

SS2 Parents are highly satisfied with higher vocational schools

According to the survey of the Guangdong Provincial Higher Vocational Education Quality Annual Report (Guangdong Provincial Department of Education, 2023a), parents evaluated their satisfaction with indicators such as the overall impression of higher vocational colleges, campus environment, security management, logistics services, management work, faculty, teacher ethics, teaching quality, ideological and political work, improvement of professional ability, improvement of ideological and moral quality, employment guidance and class teacher work. The results showed that parents' overall satisfaction with the school reached 95.43%. This survey result shows that Guangdong Province's higher vocational education has made significant progress in improving education quality and meeting the needs of parents and students, and is gradually changing the society's prejudice against higher vocational education.

(4) Technical Advantages (ST)

ST1 Guangdong Province's industrial upgrading and technological innovation provide practical opportunities and jobs for higher vocational education

Guangdong Province is accelerating the construction of a strong manufacturing province, focusing on building a national intelligent manufacturing development demonstration and leading area, promoting the deep integration of informatization and industrialization, and promoting the development of manufacturing towards high-end, intelligent, and green directions. The transformation, upgrading, and innovative development of the manufacturing industry in the Guangdong-Hong Kong-Macao Greater Bay Area requires higher vocational education to deepen the integration of production and education, school-enterprise cooperation, and cultivate technical and skilled personnel who can support

advanced manufacturing, strategic emerging industries, and modern service industries (Lin Hailong, 2020). As a major industrial province, Guangdong's industrial scale accounts for about 1/8 of the country's total, with all 31 major manufacturing categories, of which 15 rank first in the country. The province has formed ten strategic pillar industry clusters and ten strategic emerging industry clusters, including new-generation electronic information, smart home appliances, the automobile industry, software and information services, biomedicine and health, etc. In addition, Guangdong Province has also created a number of trillion-level, 500 billion-level, 100 billion-level, and 10 billion-level industrial clusters, of which the added value of 20 strategic industrial clusters accounts for 40% of GDP (People's Daily et al., 2023). In order to meet the needs of high-end, intelligent and green manufacturing, Guangdong Province has accelerated the cultivation of skilled talents. According to the Economic Daily (2023), the total number of skilled talents in Guangdong Province will reach 19.34 million in 2023, including 6.57 million high-skilled talents, but it still cannot meet the strong demand.

Guangdong Province's industrial upgrading and technological innovation have driven changes in talent demand, providing more practical opportunities and employment opportunities for graduates of higher vocational colleges.

ST2 Guangdong Province actively promotes the construction of online teaching resources

the statistics of the Guangdong Higher Vocational Education Quality Annual Report (Guangdong Provincial Department of Education, 2023a), Guangdong Province added 23,500 online teaching courses in 2023. 6,107 online quality courses were built, including 95 national-level courses and 813 provincial-level courses, and 373 courses were successfully connected to the national smart education platform. In addition, Guangdong Province also added 80 national-level quality online open courses and its number of projects ranked fifth in the country.

These data reflect the positive progress of Guangdong Province's higher vocational education in building online teaching resources, which provide more options for improving teaching quality and meeting student needs. With the

development of online education, Guangdong Province will further enrich online teaching resources, improve teaching standards, and promote the sustainable development of higher vocational education.

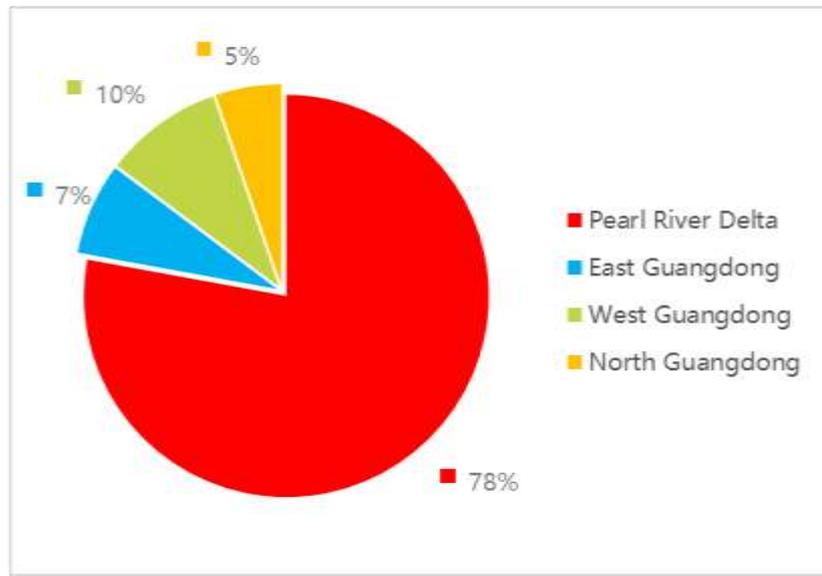
## 2. Disadvantage Analysis (W)

### (1) Political Disadvantages (WP)

WP1 The uneven distribution of higher vocational colleges in Guangdong Province affects educational equity

According to the Guangdong Provincial Higher Vocational Education Quality Annual Report (2023) (Guangdong Provincial Department of Education, 2023a), Guangdong Province has 95 independent higher vocational colleges, of which the Pearl River Delta region has the highest proportion, while the number of higher vocational colleges in the eastern, western and northern areas of Guangdong is relatively small. This imbalance in educational resources within the region directly affects the equity of higher vocational education (see Figure 2.3). Li et al. (2016) further showed that the proportion of higher vocational colleges and the number of students in the eastern, western, and northern regions of Guangdong were lower than the GDP share of the region, showing an imbalance between the development of higher vocational education and the regional economic level.

As the economy of the Guangdong-Hong Kong-Macao Greater Bay Area and other regions develop, the demand for higher vocational talents will continue to grow. Therefore, by increasing investment in higher vocational education in the eastern, western, and northern regions of Guangdong, improving education quality and teaching facilities, and strengthening school-enterprise cooperation, Guangdong Province can promote regional educational equity and promote the sustainable development of higher vocational education.



**Figure 2.3** Distribution of higher vocational colleges in Guangdong Province  
(Guangdong Provincial Department of Education, 2023a)

WP2 Insufficient policy support in Guangdong Province exacerbates the imbalance in the development of higher vocational education

Xu Xiaoqin's (2020) research pointed out that in addition to actively requiring vocational colleges in developed areas to carry out counterpart assistance, supporting the development of vocational education in the east, west, and north of Guangdong, and actively carrying out targeted poverty alleviation work by leveraging regional and professional advantages, Guangdong Province rarely has development plans and policy support for vocational education in economically underdeveloped areas, resulting in backward school conditions in the east, west and north of Guangdong, and uneven development between vocational colleges in the Pearl River Delta region, widening the regional development gap. Zhang Wenzhi's (2017) research found that the Guangdong Provincial Government's macro-control ability in vocational colleges is limited to ensuring that each prefecture-level city has a vocational college, but the subsequent development and quality control are insufficient, resulting in uneven development quality of vocational colleges in various

places. In addition, Luo Ying's (2019) research pointed out that the Guangdong Provincial Government's investment in vocational education is inconsistent with its development needs, resulting in insufficient conditions for vocational colleges, making it difficult to cultivate high-quality compound talents, and affecting the sustainable development and quality improvement of education.

Guangdong Province's higher vocational education faces challenges in terms of policy support, capital investment, development planning, etc. In the future, Guangdong Province should focus on improving the development planning and policy support for higher vocational education in economically underdeveloped areas, strengthen supervision and guidance on the subsequent development of colleges and universities, and optimize the mechanism of capital use and introduction of social funds to promote the equity development and quality improvement of higher vocational education and achieve sustainable development goals.

WP3 Local governments fail to implement policies or pay little attention to the development of higher vocational education

Jin Hua (2010) pointed out that the current local government has an inaccurate or unreasonable role positioning in the development and management of higher vocational education, which seriously hinders the development of higher vocational education and the improvement of management efficiency. At the same time, Luo Ying (2019) found that some local governments in underdeveloped areas of Guangdong Province have not yet established a sound management mechanism for higher vocational education, and lack a true understanding of the importance of higher vocational education in promoting regional economic development and scientific and technological progress, and support for the development of higher vocational education has not yet been included in the overall planning of economic and social development in most regions.

Guangdong Province's higher vocational education faces challenges in sustainable equity strategies, such as unclear role positioning of local governments and imperfect management mechanisms. These problems have seriously affected

the development and management efficiency of higher vocational education and the equity distribution and quality improvement of educational resources.

## (2) Economic Disadvantages (WE)

WE1 The unbalanced economic development in Guangdong Province has exacerbated the lack of investment in higher vocational education in underdeveloped areas.

According to data released by the Guangdong Provincial Government (Guangdong Provincial People's Government, 2024b), the GDP of four cities, including Shenzhen, Guangzhou, Foshan, and Dongguan, exceeded one trillion yuan, while the GDP of Yunfu City was only 120.742 billion yuan, a large gap. In addition, the GDP of 17 cities was lower than the average level of Guangdong Province, reflecting the uneven economic development within Guangdong Province. Similarly, the per capita GDP data showed that the per capita GDP of 5 cities exceeded 100,000 yuan, while the per capita GDP of 14 cities was lower than the provincial average, highlighting the gap between cities. The total GDP of 21 cities in Guangdong in 2023 is shown in Figure 2.4, and the per capita GDP statistics of 21 cities in Guangdong in 2023 are shown in Figure 2.5.

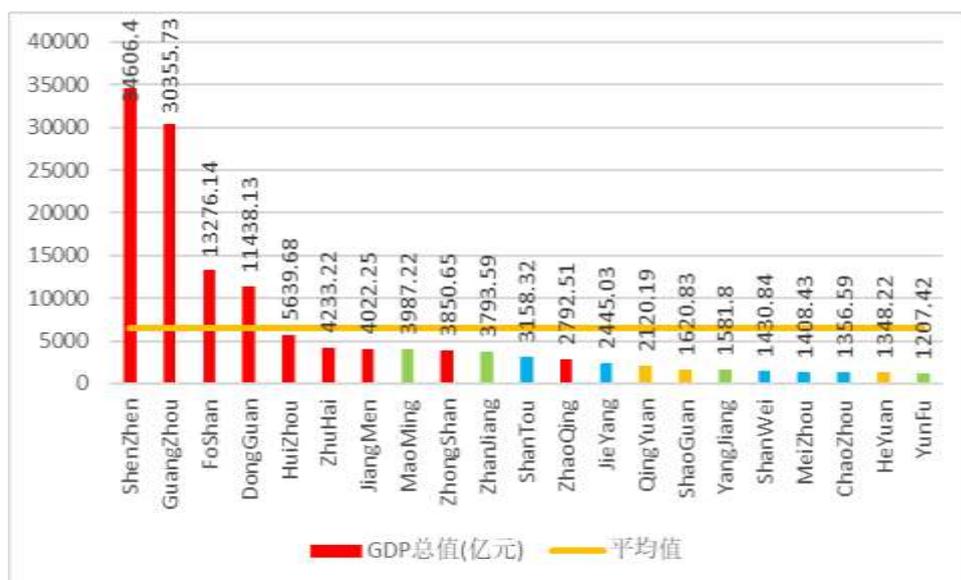


Figure 2.4 Total GDP of 21 cities in Guangdong in 2023 (100 million yuan)

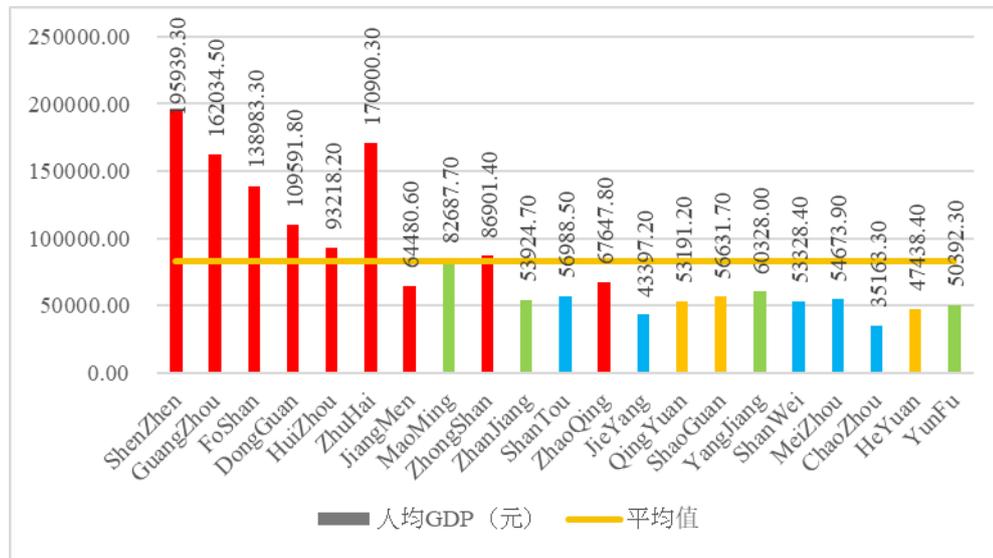


Figure 2.5 GDP per capita of 21 cities in Guangdong in 2023 (yuan)

Lin Hailong (2020) pointed out that faced with the pressure of expanding enrollment and scale of higher vocational education, higher vocational colleges in Guangdong Province are facing problems of tight school space and insufficient investment. Although fiscal investment has increased, the per capita budgetary allocation level is significantly lower than that of other developed provinces.

Xu Xiaoqin's (2020) research shows that the imbalance in economic development between the Pearl River Delta and the east, west, and north of Guangdong directly affects the funding sources and investment of higher vocational education. The Pearl River Delta region has more advantages in terms of fiscal investment and other income, while underdeveloped regions are constrained by slow economic development and insufficient government investment, which limits the development of higher vocational education.

The above data and research results highlight the challenges faced by higher vocational education in Guangdong Province. Especially in the context of unbalanced economic development, achieving equity and sustainable development of higher vocational education is an urgent problem to be solved.

### (3) Social Disadvantage (WS)

WS1 The geographical differences in Guangdong Province lead to uneven distribution of higher vocational education resources

Zhu Ling (2017) pointed out that the Pearl River Delta region of Guangdong Province has geographical advantages, with vast plains, abundant precipitation resources, and convenient transportation conditions, which provide excellent conditions for the centralized layout and spatial expansion of higher vocational colleges. In contrast, due to the characteristics of the terrain, the inland areas of eastern Guangdong and the mountainous areas of northern Guangdong have a dispersed population and inconvenient transportation, which brings certain difficulties to the layout of schools and students' education. Regarding economic location, the Pearl River Delta region is adjacent to Hong Kong and Macao, with dense cities, and is one of China's economically and culturally developed regions. The people here have relatively open minds, which is conducive to the development of higher vocational education and foreign exchanges. However, with development, the Pearl River Delta region is also facing problems such as environmental protection and resource consumption, which need attention. In general, Guangdong Province's higher vocational education has certain advantages and challenges in terms of geographical conditions and economic location. Therefore, when formulating a sustainable equity strategy, it is necessary to fully consider the impact of geographical and economic factors to achieve balanced development and sustainability of higher vocational education.

### (4) Technical Disadvantages (WT)

WT1 The professional setting of higher vocational education in Guangdong Province does not match the regional development strategy

According to the research of Xu Lan et al. (2021), there is an obvious mismatch between the professional settings of Guangdong Province's higher vocational education and the regional development strategy. On the one hand, the existing professional system lacks professional settings that focus on the new generation of the information technology industry, advanced intelligent

manufacturing industry, and other professional settings related to the one core, one belt, and one region development strategy, and fails to meet the needs of the development plan of the coastal economic belt and the northern ecological zone. On the other hand, higher vocational education still pays too much attention to traditional manufacturing technology and fails to adjust the professional settings in time to adapt to the needs of technological change. This mismatch leads to the dispersion of professional groups, making it difficult to form a scale effect of serving the industrial economy, and affecting the sustainable development of the regional economy. In addition, Lin Hailong 's (2020) research shows that Guangdong's higher vocational education still cannot meet the needs of regional economic development, industrial transformation, and upgrading for technical and skilled talents. The degree of integration between higher vocational education and economic and social development is not enough, and the professional settings and talent training are still not matched with the needs of regional industrial structure and innovation-coordinated development. This shows that the professional settings of Guangdong Province's higher vocational education are not matched with the regional development strategy, and the existing higher vocational education system still has a lot of room for improvement in adapting to economic development and industrial structure adjustment.

### 3. Opportunity Analysis (O)

#### (1) Political Opportunities (OP)

OP1 The country is accelerating the layout of strategic emerging industries and vigorously supporting the improvement of the quality of vocational education

The sustainable equity strategy of higher vocational education in Guangdong Province has been strongly supported by national strategies. The country has accelerated the layout of strategic emerging industries and vigorously supported the improvement of the quality of vocational education to meet the needs of various strategic tasks. "China's Education Modernization 2035" (CPC Central Committee and State Council, 2019) puts forward the goal of building a modern education system and accelerating the development of modern vocational

education, including optimizing the structure and layout of vocational education and strengthening the organic connection with industrial development. "Guiding Opinions on Accelerating the Transformation and Upgrading of Traditional Manufacturing Industry by the Ministry of Industry and Information Technology and Eight Other Departments" (Ministry of Industry and Information Technology, 2023) emphasizes the importance of the transformation and upgrading of traditional manufacturing industry and proposes measures such as optimizing the setting of vocational education majors, comprehensively practicing the Chinese-style apprenticeship system, and promoting school-enterprise cooperation to cultivate high-quality technical and skilled talents that adapt to the new situation. "National Vocational Education Reform Implementation Plan" (State Council, 2019) and the "Vocational Education Quality Improvement Action Plan (2020-2023)" issued by the Ministry of Education and nine other departments also clarify the key tasks of improving the quality of vocational education, including measures such as carrying out undergraduate vocational education pilots. The Opinions of the General Office of the CPC Central Committee and the General Office of the State Council on Promoting the High-Quality Development of Modern Vocational Education (General Office of the CPC Central Committee and the General Office of the State Council, 2022) proposed development goals by 2025 and 2035, emphasizing the improvement of the overall level and social status of vocational education, as well as its matching with the needs of economic and social development. In summary, the support of national strategies and policies has provided a solid policy foundation and directional guidance for the sustainable and equitable development of higher vocational education in Guangdong Province.

## (2) Economic Opportunities (OE)

### OE1 Economic transformation and upgrading promote educational equity

In the process of economic and social development, the adjustment of industrial structure and the emergence of emerging industries have provided more economic support and development opportunities for improving the quality of higher vocational education and promoting educational equity (Lin Hailong, 2020). The

adjustment of China's industrial structure is similar to that of developed countries. It has experienced a process in which the proportion of the primary industry has continued to decline, the proportion of the secondary industry has continued to rise and then steadily declined, and the proportion of the tertiary industry has increased rapidly (Ma Jiahong & Li Xue, 2020). In this transformation process, the demand and requirements of the state and society for higher vocational talents have also increased accordingly. The state has implemented a series of policies and measures to promote economic and industrial development, as well as the self-innovation and independent innovation of enterprises and industries to deepen reforms, expand production and operation, and especially seek connotation development, high-quality development, and sustainable development. It will also pay more attention to the introduction, training, and training of talents. Therefore, talent strategies such as jointly training talents with higher vocational colleges and promoting the implementation of the integrated talent training model of "production, learning, research and development" will become a development trend. The above series of changes have provided a good external environment and development opportunities for the sustainable development of higher vocational education in Guangdong Province.

### (3) Social Opportunities (OS)

OS1 The growth of high-level talents improves the teaching level of higher vocational colleges

According to the data released by the Ministry of Education (Ministry of Education, 2024), in 2023, a total of 1.3017 million graduate students will be enrolled nationwide, an increase of 4.76% over the previous year. Among them, the scale of doctoral students enrolled reached 153,300, with a growth rate of 10.29%; the scale of master's students enrolled was 1.1484 million, with a growth rate of 4.07%. At the same time, the total number of graduate students in the country reached 3.8829 million, with a growth rate of 6.28%. Among them, the number of doctoral students enrolled reached 612,500, with a growth rate of 10.14%; the number of master's students enrolled reached 3.2705 million, with a growth rate of 5.59%. This shows

that the scale of graduate education in China continues to expand, especially the growth of doctoral students is more significant. This data reflects the positive trend of the development of higher education in China, and also provides more talent support for the construction of the faculty team and discipline development of higher vocational education in Guangdong Province.

OS2 There is a strong demand for skilled personnel, providing employment opportunities for higher vocational graduates

China has established the world's largest vocational education system, but the total proportion of technical and skilled personnel is low and the structure is unreasonable, which cannot meet the needs of economic and social development (National Development and Reform Commission, 2019). According to statistics from the All-China Federation of Trade Unions, although the number of high-skilled talents in China has increased, it is still in short supply. The total number of skilled talents exceeds 200 million, but only 30% have technical grades, while junior and intermediate workers account for as high as 73%, and senior workers are in great shortage (China Economic Net, 2023). At the same time, the demand for technical and skilled talent in countries around the world is also increasing, and the global talent shortage may lead to huge annual income losses. China's demographic changes will lead to a tightening labor market and a huge gap in highly educated and skilled talents (Chen Bailin & Yang Naitong, 2020). Professor Liu Hong, an expert on the Academic Committee of the Center for China and Globalization (CCG) and Dean of the School of Social Sciences at Nanyang Technological University, Singapore, mentioned that under the trend of globalization, the internationalization of higher education has intensified the competition for global talents, and the mobility of skilled talents has become the main driving force for scientific and technological development and globalization (Xu Qiaoyun & Wang Yanan, 2023). These data reflect that there is a huge demand for technical and skilled talents both internationally and domestically. Higher vocational colleges need to seize this opportunity to improve the quality and quantity of skilled talent training to meet the needs of economic and social development.

#### (4) Opportunities in Technology (OT)

##### OT1 Digital economic transformation intensifies demand for skilled talent

Tong Tian, a researcher at the Chinese Academy of Labor and Social Security Sciences, pointed out that the contemporary economy and society are transforming from the traditional technological economic paradigm to the digital technological economic paradigm. Technological innovation drives the intelligent upgrading of industries, and there is an urgent need for a large number of new high-quality skilled talents who have both solid theoretical knowledge and superb professional skills, can solve complex technical problems, and have innovation capabilities (China Economic Net, 2023). This view highlights the urgent need for high-quality skilled talents in the current economic and social development and puts forward higher requirements and challenges for Guangdong Province's higher vocational education.

OT2 Global technological innovation puts forward new requirements for technical and skilled talents

In the new wave of global scientific and technological revolution and industrial revolution, the integration of new technologies such as informatization, big data, the Internet, and artificial intelligence with the manufacturing industry is becoming increasingly close. "Smart manufacturing" of equipment, products, and production processes will gradually become the norm, which puts forward newer and higher requirements for technical and skilled talents to support this change. This trend requires higher vocational education to face more stringent requirements in terms of the positioning, goals, models, faculty, curriculum system, and integration of industry and education in talent training (Chen Bailin & Yang Naitong, 2020). This also means that higher vocational education in Guangdong Province must keep pace with the times and constantly adjust and optimize teaching content and models to cultivate high-quality skilled talents that adapt to the new situation.

#### 4. Threat Analysis (T)

##### (1) Political Threats (TP)

TP1 Intensified geopolitical tensions and global economic instability pose challenges to educational development

Shang Fulin, director of the Economic Committee of the 13th National Committee of the Chinese People's Political Consultative Conference and former chairman of the China Banking Regulatory Commission, pointed out that geopolitical tensions and trade disputes have intensified people's concerns about global economic growth. Market tensions may affect the cross-border allocation of capital, the international payment system, and asset prices, and thus have an important impact on the stability of the global market (Song Jie, 2024). The confrontation between major powers, the difficulty in easing regional security hotspots, and the crisis situation in the global geopolitical structure indicate that the next few years may face challenges such as great power confrontation and intensified geopolitical conflicts. The tense geopolitical situation may lead to the rise of global political extremism, and the division of global political thoughts may also erupt again. The structuralization, integration and long-term trend of geopolitical conflicts are intensifying (Zhu Feng, 2023). These factors will have a profound impact on the global market and will also affect the development environment and trends of higher vocational education in Guangdong Province.

## (2) Economic Threats (TE)

TE1 Economic downturn may lead to reduced investment in education, affecting the realization of educational equity.

The International Monetary Fund (IMF) said on April 10, 2024, that without timely policy intervention or technological innovation, world economic growth will slow to 2.8% by 2030. The IMF released part of the upcoming World Economic Outlook report in advance, pointing out that since the global financial crisis of 2008-2009, the global economic growth rate has not experienced cyclical ups and downs, but has continued to slow down. In the absence of major technological advances or structural reforms, global economic growth is expected to fall to 2.8% by 2030, far below the historical average of 3.8%. The continued low growth scenario, coupled with high interest rates, could jeopardize debt sustainability, thereby limiting the government's ability to respond to economic slowdowns and invest in social welfare or environmental initiatives. This forecast reflects the challenges facing the global

economy and poses a more severe test to the development of higher vocational education in Guangdong Province.

TE2 The economic rise of other regions has led to a brain drain, posing a challenge to Guangdong's higher vocational education

entering the 21st century, with the transformation of economic development mode and the integrated development of the regional economy, Guangdong gradually lost its original advantages and faced the threat of the rapid rise of inland economic zones such as the Yangtze River Delta and Bohai Rim. The structural contradictions of the labor force are becoming increasingly prominent, the industrial coordination and innovation capabilities are relatively low, and there is a shortage of high-end technical and skilled talents. These problems indicate that the "demographic dividend" is disappearing (Zhou Hongli, 2015). This trend suggests that Guangdong Province needs to readjust its industrial structure and improve its innovation capabilities and talent training level in order to cope with the challenges of economic development under the new situation.

### (3) Social threats (TS)

TS1 The declining birth rate and the lack of students in higher vocational colleges pose a threat to educational equity

Students are the lifeline of higher vocational colleges. However, in recent years, the continuous decline in China's birth rate and the continuous expansion of colleges and universities have led to a year-on-year decline in the number of students in higher vocational colleges. This trend has seriously threatened the survival of some higher vocational colleges (Zhu Chen et al., 2020). To meet this challenge, higher vocational colleges need to take measures to attract more students and improve the quality of education and the attractiveness of the school to ensure sustainable development.

TS2 Social prejudice leads to low recognition of vocational education

For a long time, vocational education has been affected by social prejudice, resulting in the low social status of vocational talents. Many parents and students are unwilling to accept vocational education, believing that it is not as formal as ordinary

higher education and it is difficult to find a good job after graduation. The survey shows that 30.2% of parents are unwilling to let their children go to vocational schools. On the whole, the general public does not have a high degree of recognition of vocational education. The fundamental reason is that the social status of vocational education graduates is not high, the income level is average, the social promotion channel is not open, and the social security system is not sound (Zhang Wenbo & Lei Jianming, 2023). To change this situation, it is necessary to strengthen the understanding of vocational education and promote the transformation of social concepts while improving the social status and employment prospects of vocational education graduates and establishing a sound social security system to enhance the attractiveness and status of vocational education.

#### TS3 Academic Discrimination Affects the Recognition of Higher Vocational Education

With the development of the times, government agencies, enterprises, and institutions have increasingly higher academic requirements for applicants, which has directly led to the general public's disdain for higher vocational education (Zhang Wenzhi, 2017). This phenomenon shows that the status of higher vocational education in society is still not high enough, and it is necessary to improve its recognition and status in society by changing employment concepts and improving the quality of higher vocational education.

##### (4) Technical threats (TT)

TT1 The mismatch between higher vocational education and the development of the digital economy may affect educational equity

The development of the digital economy has brought about profound changes in society and the labor market. The development of the digital/platform economy may change the demand, allocation, and use of skills in the labor market, thereby affecting the possibility of vocational education graduates transforming into skilled talents. If the talent training of vocational colleges cannot adapt to the changes in employment structure brought about by the development of the digital/platform economy, it may cause a waste of human resources. However,

vocational colleges that adapt to the transformation of the digital economy can also train talents for newly created positions and accelerate job creation in these fields (Yang et al., 2024). This shows that vocational education needs to keep pace with the development of the times and constantly adjust the curriculum and teaching methods to cultivate high-quality skilled talents that meet the needs of the digital economy era.

TT2 International technical barriers affect the cultivation of talents in higher vocational education

Wang Xinbo, director of the Institute of Vocational Education and Continuing Education of the Chinese Academy of Educational Sciences, pointed out that from the perspective of international competition, China not only needs to solve the "bottleneck" problem in advanced manufacturing and key core areas but also needs to solve the problem of how to complete technology realization and product landing after achieving original breakthroughs from 0 to 1. This also requires the training of a large number of high-quality professionals and skilled talents who are proficient in advanced production processes (China Economic Net, 2023). This view emphasizes the importance of vocational education in cultivating technical practice capabilities and professional skills and is of great significance for adapting to the needs of national economic transformation and development.

The strengths, weaknesses, opportunities, and threats of political, economic, social, and technological factors affecting the equity of higher vocational education in Guangdong Province have been derived from the above analysis, on the basis of which a SWOT-PEST analysis matrix chart (see 2.16) was constructed in order to build up a comprehensive and in-depth analysis, to identify the key factors and problems, and to provide an analytical basis for the formulation of alternative strategies.

**Table 2.16** SWOT-PEST analysis of sustainable equity in higher vocational education in Guangdong Province

SWOT	PEST	SWOT-PEST
S	P	SP1 Guangdong Province attaches great importance to the development of higher vocational education and the promotion of educational equity and has formulated and issued a series of policies and regulations
	E	SE1 Guangdong Province has a strong economic capacity and willingness to invest in education
		SE2 There is room for the technical and skilled talent market in most cities in Guangdong Province
	S	SS1 Guangdong Province's population continues to grow, providing sufficient students for higher vocational education SS2 parents are highly satisfied with higher vocational schools
T	T	ST1 Guangdong Province's industrial upgrading and technological innovation provide practical opportunities and jobs for higher vocational education
		ST2 Guangdong Province actively promotes the construction of online teaching resources
W	P	WP1 The uneven distribution of higher vocational colleges in Guangdong Province affects educational equity
		WP2 Insufficient policy support in Guangdong Province exacerbates the imbalance in the development of higher vocational education
		WP 3 Local governments fail to implement policies or pay little attention to the development of higher vocational education
	E	WE1 The unbalanced economic development in Guangdong Province has exacerbated the lack of investment in higher vocational education in underdeveloped areas.

Table 2.16 (Continued)

SWOT	PEST	SWOT-PEST
	S	WS1 Differences in geographical conditions in Guangdong Province lead to uneven distribution of higher vocational education resources
	T	WT1 The professional setting of higher vocational education in Guangdong Province does not match the regional development strategy
O	P	OP1 The country is accelerating the layout of strategic emerging industries and vigorously supporting the improvement of the quality of vocational education
	E	OE1 Economic transformation and upgrading promotes educational equity
	S	OS1 The growth of high-level talents improves the teaching level of higher vocational colleges OS2 has a strong demand for skilled talents, providing employment opportunities for higher vocational graduates
	T	OT1 Digital economic transformation intensifies demand for skilled talent OT2 Global technological innovation puts forward new requirements for technical and skilled talents
T	P	TP1 Intensified geopolitical tensions and global economic instability pose challenges to educational development
	E	TE1 Economic downturn may lead to reduced investment in education and affect the realization of educational equity. TE2 The economic rise of other regions has led to a brain drain, posing a challenge to Guangdong's higher vocational education <sup>1</sup>
	S	TS1 The birth rate is declining, and the lack of students in higher vocational colleges poses a threat to educational equity TS2 Social prejudice leads to low recognition of vocational education

Table 2.16 (Continued)

SWOT	PEST	SWOT-PEST
		TS3 Academic Discrimination Affects the Recognition of Higher Vocational Education
T		TT1 The mismatch between higher vocational education and the development of the digital economy may affect educational equity
		TT2 International technical barriers affect the cultivation of talents in higher vocational education

### Literature Review Conclusion

Focusing on the research purpose of this study, based on the content of the above literature review, the following literature review conclusions are drawn:

#### **Conclusions of the literature review based on research purpose 1: studying the current situation of equity in higher vocational education in Guangdong Province**

1. The issue of educational equity is a common concern of the international community and academic research circles. It is a livelihood issue that people in all countries hope to improve. In order to solve the problem of educational equity, the United Nations and governments of various countries have made many effective explorations and attempts, and continue to promote the solution of this problem. As a country that attaches great importance to educational equity, the Chinese government has made a lot of efforts in terms of policies, funds, and institutional mechanisms, and has achieved certain results. However, the issue of educational equity is still a prominent issue in China's education field.

2. Although the government and educational institutions have taken a series of measures in the field of higher vocational education in Guangdong Province, problems such as the government's absence, unbalanced regional layout,

unbalanced resource allocation, and low social recognition have seriously affected higher vocational education equity and talent training quality.

3. Educational equity not only includes equal educational opportunities but also involves equity in the educational process and equity in educational results. Educational inequality not only affects individual happiness and economic status but also hinders economic and social development. Many factors affect educational equity, which can be generally summarized into three categories: politics, economy, and environment. These factors interact with each other to jointly shape the current situation and challenges of educational equity.

4. The formulation of strategies is affected by various internal and external factors. We cannot only consider external factors or internal factors one-sidedly but should comprehensively consider internal and external factors. The SWOT-PEST analysis matrix can be used to conduct a more comprehensive analysis of the internal strengths, weaknesses, and external threats and opportunities in higher vocational education equity in Guangdong Province from political, economic, social, and technological aspects, providing information for formulating effective and feasible strategies. support.

#### **Conclusions of the literature review based on research purpose 2: formulating strategies to promote sustainable equity in higher vocational education in Guangdong Province**

1. According to different theories and practical experiences, the government plays an important role in promoting educational equity, and its policy formulation and resource allocation capabilities have a decisive impact on educational equity. The government can promote the equity allocation of educational resources by formulating relevant regulations, policies, and economic means, thereby achieving the goal of educational equity.

2. Strategy formulation needs to consider the needs and opinions of multiple stakeholders, such as the government, market, and society, to form a comprehensive and effective equitable education policy.

3. The TOWS analysis matrix can fully consider the internal and external factors faced by higher vocational education in Guangdong Province, seize opportunities, play to advantages, make up for disadvantages, and properly handle threats in a targeted manner, so as to formulate more scientific and feasible strategies.

**Conclusions of the literature review based on Research Purpose 3:  
Evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province**

1. Strategic evaluation can help assess the strategy's adaptability and feasibility and adjust and optimize it in a timely manner.

2. Formulating strategies that suit local characteristics requires learning from the experience of other countries and regions and considering the actual conditions of Guangdong Province.

3. The Likert five-point scale scoring method can provide objective, comparative, and operational evaluation for this study, thereby supporting the formulation and implementation of sustainable equity strategies for higher vocational education in Guangdong Province.

# Chapter 3

## Research Methodology

To study the equity strategy of higher vocational education in Guangdong Province, this chapter conducts investigation and research from the following stages:

**Phase 1** aims to answer research **objective 1**: To study the current status of equity in higher vocational education in Guangdong Province.

**Phase 2** aims to answer research **objective 2**: To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.

**Phase 3** aims to answer research **objective 3**: To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.

The specific contents are as follows:

### **Phase 1 Aims to answer research objective 1: To study the current status of equity in higher vocational education in Guangdong Province**

#### **Step 1 Literature Analysis**

In the preliminary preparation stage of this study, we mainly consulted no less than 600 domestic and foreign research results on the field of equity in higher vocational education through platforms such as Google Scholar, CNKI, Wanfang database, and VIP database, and sorted, summarized and analyzed them to gain a detailed understanding of the research status, problems, and influencing factors in this research field, providing a theoretical basis and empirical basis for the formulation of relevant solutions for subsequent research.

#### **Step 2 SWOT- PEST Analysis**

In the stage of analyzing the environmental factors that affect the research object, this study uses the SWOT-PEST analysis matrix to analyze the internal strengths, weaknesses, external opportunities, and threats of equity in higher vocational education in Guangdong Province from multiple aspects, such as politics,

economy, society, and technology, laying the foundation for formulating alternative strategic plans.

### **Step 3 Questionnaire**

#### **The Population / Sample Group**

##### **The Population**

This study adopts a stratified random sampling method for random sampling. First, Guangdong Province is divided into four regions: the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong, according to geographical location and political, economic, and cultural factors; secondly, two higher vocational colleges are selected from each of the four regions, and the total number of higher vocational colleges selected is 8. Among them, the schools selected from the Pearl River Delta region are Shenzhen Polytechnic and Guangdong Industry Polytechnic, the schools selected from the East Guangdong region are Jieyang Polytechnic and Shanwei Polytechnic, the schools selected from the West Guangdong region are Yangjiang Polytechnic and Maoming Polytechnic. The schools selected from the North Guangdong region are Heyuan Polytechnic and Qingyuan Polytechnic.

142,051 students from the eight vocational colleges selected above.

##### **The Sample Group**

According to the sampling table of Krejcie & Morgan (1970), this study's sample consists of 384 students from 8 vocational colleges in the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong regions of Guangdong Province. To improve the reliability and accuracy of the questionnaire data, the sample group was increased to 400 students. The survey sample group table is shown in Table 3.1.

**Table 3.1** Survey Sample Group Table

Area	School Name	Number of students	Sample group
Pearl River Delta	ShenZhen Polytechnic	33475	94
	GuangDong Industry Polytechnic	25794	72
Eastern	JieYang Polytechnic	8260	23
Guangdong	ShanWei Polytechnic	9786	28
Western	YangJiang Polytechnic	12725	36
Guangdong	MaoMing Polytechnic	17599	50
Northern	HeYuan Polytechnic	17664	50
Guangdong	QingYuan Polytechnic	16748	47
<b>Total</b>		<b>142051</b>	<b>400</b>

### Research Instruments

The research tool used in this step is a questionnaire survey. A questionnaire survey is one of the important tools for collecting data related to "Research Purpose 1". By conducting an online questionnaire survey on the respondents and statistically analyzing the information and data obtained. We can obtain the actual perception of the student group on the current status of equity in higher vocational education in Guangdong Province and discover the problems existing in the equity of higher vocational education.

### Designing the Questionnaire

1. Basic information of the respondents, including personal information such as gender, family economic status, and school information such as school location and school type;

2. Respondents' perception of educational equity. This part is used to understand respondents' actual perceptions of educational equity in their attending schools, equity in higher vocational education in Guangdong Province, equity in higher vocational education across the country, equity in education in China, and their personal future expectations.

3. Respondents' opinions and suggestions on how schools, governments, or society can promote sustainable equity in higher vocational education. This part will help us understand the respondents' urgent educational equity demands.

The process of questionnaire design is as follows:

1. The first step: Review and analyze relevant literature, concepts, theories, and research results in the field of equity in higher vocational education in Guangdong Province, and conduct a SWOT-PEST matrix analysis of the current situation of equity in higher vocational education in Guangdong Province.

2. Based on the analysis results of the first step and targeting the current status of educational equity, a questionnaire on equity in higher vocational education in Guangdong Province was designed;

3. Invite five experts to test the questionnaire's objective consistency index (IOC) (Johnson RE and Brian Foote, 1988). Before collecting the questionnaire and data and conducting focus interviews, the researchers invited five experts from Thai universities with backgrounds in education, sustainable development, and linguistics research to conduct an item-objective consistency (IOC) assessment on the questionnaire and focus interview forms. The IOC values of all questions were greater than or equal to 0.6, meaning that all passed.

4. Modify and improve the questionnaire based on the experts' feedback;

5. Distribute the questionnaire to 30 Heyuan Vocational and Technical College students for a pre-survey. Before officially distributing the questionnaire, the researchers conducted a preliminary test on the reliability of the questionnaire and randomly invited 30 eligible research subjects to participate in the Cronbach.  $\alpha$  (CA) test of the questionnaire. The Cronbach.  $\alpha$  coefficient test score was 0.815 (see Appendix), indicating the reliability of the study.

6. Conduct a questionnaire survey among 400 students from 8 higher vocational colleges in the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong regions of Guangdong Province, and follow up and collect the questionnaires in a timely manner. After collecting 400 valid questionnaires, the researchers tested the Cronbach.  $\alpha$  and KMO of the questionnaires. The Cronbach.

$\alpha$  coefficient test score was 0.923 (see Appendix). According to the evaluation standard Cronbach.  $\alpha \geq 0.8$ , it shows that the reliability of the questionnaire data is very good; the KMO coefficient test score was 0.909 (see Appendix). According to the evaluation standard  $KMO \geq 0.8$ , the research data is very suitable for extracting information and reflects good validity.

### **Data Collection**

1. Apply to the Graduate School of BansomdejChaophaya University for relevant approval documents to collect questionnaire data from 400 interviewed higher vocational college students.
2. Distribute the questionnaire to 400 students via the Internet.
3. Follow up on the collection of questionnaires to ensure that the sample size reaches 400.

### **Data Analysis**

In this stage, computer software is used to analyze the questionnaire data. The specific steps are as follows:

1. Conduct frequency and percentage analysis on the personal information of the questionnaire respondents and classify them by gender, registered residence, family economic status, and the region where the school is located.
2. Analyze the respondents' actual perceptions of educational equity in their attending schools, equity in higher vocational education in Guangdong Province, equity in higher vocational education across the country, equity in education in China, and their personal future expectations through means and standard deviations.

The criteria for data interpretation based on the five-point Likert scale are as follows:

- 5 = strongly agree
- 4 = agree
- 3 = uncertainty
- 2 = disagree
- 1 = strongly disagree

Based on Rensis Likert (1932), it is as follows:

4.50-5.00	Refer to	highest level
3.50-4.49	Refer to	high level
2.50-3.49	Refer to	moderate level
1.50-2.49	Refer to	low level
1.00-1.49	Refer to	lowest level

#### **Step 4** Structured Interview

##### **The Population / Sample Group**

###### **The Population**

5971 teachers and 2474 administrators from the eight higher vocational colleges were sampled in the first stage.

###### **The Sample Group**

Eight full-time teachers and eight administrative staff from eight higher vocational colleges were selected using purposeful sampling. The sample group table of structured interviews is shown in Table 3.2.

1. Teachers must meet the following conditions: Associate Professor or above; More than 5 years of teaching experience or student management experience in higher vocational colleges.

2. Administrative personnel must meet the following conditions: deputy department position or above; more than 5 years of administrative management experience in higher vocational colleges; familiarity with government laws, regulations, and local policies on higher vocational education.

**Table 3.2** Structured Interview Sample Group table

Area	School Name	Focus Interview Respondents	
		Teacher	Administrative Staff
Pearl River Delta	Shenzhen Polytechnic	1	1
	GuangDong Industry Polytechnic	1	1
East Guangdong	Jieyang Polytechnic	1	1
	Shanwei Polytechnic	1	1
Western	Yangjiang Polytechnic	1	1
Guangdong	Maoming Polytechnic	1	1
Northern	Heyuan Polytechnic	1	1
Guangdong	Qingyuan Polytechnic	1	1
<b>Total</b>		<b>8</b>	<b>8</b>

### Research Instruments

#### Structured Interview Form

A structured interview is a commonly used research tool for collecting the information required for "Research Purpose 2."

According to the results of the questionnaire and the SWOT-PEST analysis matrix, a structured interview form was designed to focus on the existing problems, challenges, and strategic suggestions regarding the equity of higher vocational education in Guangdong Province. Eight administrative managers and eight teachers from higher vocational colleges in the Pearl River Delta, eastern Guangdong, western Guangdong, and northern Guangdong were interviewed. The interview records were then sorted out, and finally, the representative views and suggestions were summarized and organized to provide a basis for the subsequent formulation of scientific strategies.

### **Data Collection**

1. Apply to the Graduate School of Bansongdeok Chaophaya University for relevant approval documents to collect structured interview forms from 8 administrative staff and eight teachers from relevant higher vocational colleges in Guangdong Province.

2. Conduct structured interviews with eight administrative staff and eight teachers, each lasting 15-30 minutes.

3. Collect the structured interview form.

### **Data Analysis**

A content analysis was conducted using the structured interview form of equity strategies for higher vocational education in Guangdong Province, and then data analysis was performed using frequency and percentage.

### **Step 5 Focus Group Interviews**

#### **The Population / Sample Group**

##### **The Population**

5971 teachers and 2474 administrators from the eight higher vocational colleges were sampled in the first stage.

##### **The Sample Group**

The sample group in this step is consistent with the sample group in step 4. See Table 3.2 for details.

### **Research Instruments**

#### **Focus Group Interview Form**

A focus group interview is a commonly used research tool for collecting the information required for "Research Purpose 2."

Based on the analysis results of previous surveys and interviews, the researchers designed a focus group interview outline using the 4M, PEST, and SWOT analysis methods. They conducted focus group interviews with 8 administrative managers and 8 teachers from higher vocational colleges in the Pearl River Delta, eastern Guangdong, western Guangdong, and northern Guangdong regions of Guangdong Province. The unified opinions formed from the focus group interviews

were then recorded and organized to provide a basis for the subsequent formulation of scientific strategies.

#### **Data Collection**

1. Apply to the Graduate School of Bansongdeok Chaophaya University for relevant approval documents to collect focus group interview forms from 8 administrative staff and eight teachers from relevant higher vocational colleges in Guangdong Province.

2. Eight administrators and eight teachers were interviewed in focus groups, which lasted 120-180 minutes.

3. Collect the structured interview form.

#### **Data Analysis**

A content analysis was conducted on the focus group interview forms on equity strategies for higher vocational education in Guangdong Province, and a SWOT analysis matrix was constructed using the 4M and PEST analysis methods.

**Phase 2 Aims to answer research objective 2: To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

#### **Drafting a strategy using the TOWS analysis matrix**

The TOWS analysis matrix is an important research tool for formulating strategies. This research tool can be used to formulate alternative strategies required for "Research Purpose 2".

According to the SWOT analysis matrix constructed in step 5 of phase 1, formulate and form the SO strategy: based on the advantages reflected by the internal environment, seize the opportunities reflected by the external environment; WO strategy: Use opportunities brought by the external environment to overcome the disadvantages of the internal environment; ST strategy: Match the strengths of the internal environment with the threats of the external environment; WT strategy: Match the weaknesses of the internal environment with the threats of the external environment.

**Phase 3 Aims to answer research objective 3: To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

#### **The Target Group**

To ensure the objectivity of the strategy evaluation, one expert from the Guangdong Provincial Department of Education and one expert from each of the four regions evaluated the sustainable equity strategy of higher vocational education in Guangdong Province. The target group of evaluation experts is shown in Table 3.3.

#### **Experts must meet the following qualifications:**

1. Associate professor or above;
2. More than 10 years of working experience in higher vocational colleges or government education management departments;
3. Have scientific research achievements in the field of education management;
4. Be familiar with the national, provincial, and municipal government policy documents on higher vocational education, the economic development status of various regions in Guangdong Province, and the basic situation of regional university development.

**Table 3.3** Evaluation Expert Target Group Table

Area	School Name	Number of Evaluation Experts
provincial	Guangdong Provincial Department of Education	1
Pearl River Delta	Shenzhen Polytechnic	1
East Guangdong	Shanwei Vocational and Technical College	1
Western Guangdong	Yangjiang Vocational and Technical College	1

Table 3.3 (Continued)

Area	School Name	Number of Evaluation Experts
Northern Guangdong	Heyuan Vocational and Technical College	1
<b>Total</b>		<b>5</b>

### Research Instruments

#### Evaluation Form

The evaluation form is an important research tool for verifying the strategy's feasibility. It can also be used to collect the data information required for "Research Purpose 3." This study invited five experts from the Guangdong Provincial Department of Education and higher vocational colleges in the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong, to use the Likert scale method to evaluate the adaptability and feasibility of the strategy draft of this study.

#### Data Collection

The specific steps for data collection are as follows:

1. Apply to the Graduate School of Baan Somdej Chaophaya University for relevant approval documents to collect evaluation information data from 5 evaluation experts.
2. Invite five experts to judge the questionnaire and fill in the relevant evaluation form.
3. Invite five experts to evaluate the adaptability and feasibility of the draft sustainable equity strategy for higher vocational education in Guangdong Province formulated based on the TOWS analysis matrix and fill in the evaluation form.
4. Recycle the evaluation form.

### Data Analysis

The adaptability and feasibility of the draft strategy were analyzed and evaluated through the mean and standard deviation analysis methods, and ultimately, the effective strategy was determined.

Based on Rensis Likert (1932), it is as follows:

4.50-5.00	Refer to	highest level
3.50-4.49	Refer to	high level
2.50-3.49	Refer to	moderate level
1.50-2.49	Refer to	low level
1.00-1.49	Refer to	lowest level

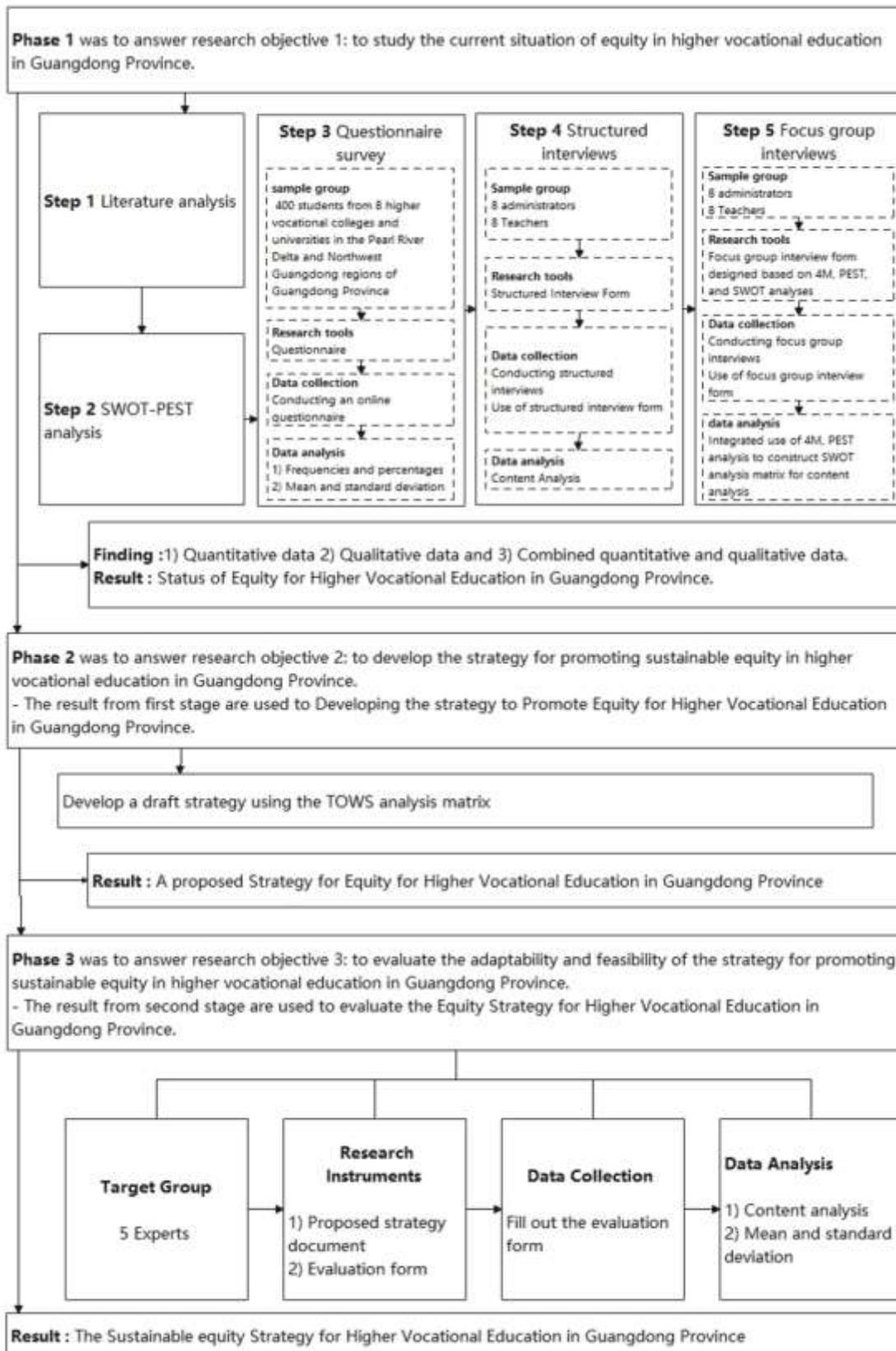


Figure 3.1 A simplified diagram of the three stages of the research method

As shown in Figure 3.1, This study focuses on the sustainable equity of higher vocational education in Guangdong Province. It adopts a systematic phased research design to achieve the following three research objectives.

**Phase 1:** To study the current status of equity in higher vocational education in Guangdong Province, which is completed through five steps. 1) Literature analysis, sorting out relevant theories and research results to lay a theoretical foundation for the study; 2) SWOT-PEST analysis method, in-depth analysis of the current situation from multiple dimensions such as internal strengths and weaknesses and external opportunities and threats; 3) Questionnaire survey, collecting about 400 valid data to ensure the breadth and representativeness of the research; 4) Structured interviews, selecting administrative staff and teachers as the main subjects, to explore the deep-seated problems behind the current situation; 5) Focus group interviews, further improving and supplementing data through multi-party discussions. This stage's comprehensive quantitative and qualitative data analysis formed the research conclusions on the current status of equity in higher vocational education in Guangdong Province.

**Phase 2:** Based on the results of the first phase, the TOWS analysis method constructs a strategic matrix, proposes targeted strategies, and formulates a strategic framework to promote the sustainable and equitable development of higher vocational education in Guangdong Province.

**Phase 3:** The strategy's adaptability and feasibility assessment. Five experts are invited to use the strategic evaluation form to comprehensively assess the strategy's adaptability and feasibility. Combined with data analysis, content analysis, and statistical indicators (such as mean and standard deviation), the strategy is optimized and improved, and finally, a specific implementation strategy for sustainable equity in higher vocational education in Guangdong Province is formed.

## Chapter 4

### Results of Analysis

Focusing on the research objective of "Research on Sustainable Equity Strategies for Higher Vocational Education in Guangdong Province," the researchers in this chapter conducted research in the following aspects.

**Part 1:** Analytical results serving the research **objective 1:** To study the current status of equity in higher vocational education in Guangdong Province.

**Part 2:** Analytical results in service of Research **objective 2:** To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.

**Part 3:** Analytical results in service of Research **objective 3:** To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.

The symbols and meanings used to express data analysis results are as follows:

- n Represents the sample group
- $\bar{X}$  Represents the average
- S.D. Stands for standard deviation

**Part 1: Analytical results serving the research objective 1: To study the current status of equity in higher vocational education in Guangdong Province.**

#### Questionnaire data analysis results

This section uses frequency, percentage, mean, standard deviation, and ranking to present the analysis results that serve Objective 1 as follows:

1. Results of the analysis of the personal information of the respondents of the questionnaire, classified by gender, place of household registration, family economic status, the region where the higher vocational college they attended is located, etc. The data are presented as frequency and percentage (see Table 4.1).

**Table 4.1** Demographic and general data table (n=400)

Project	Options	Frequency	Percentage (%)
Gender	Male	113	28.25
	Female	287	71.75
Place of Residence	City	70	17.50
	Township	64	16.00
	Rural	266	66.50
Family's Financial Situation	Rich	4	1.00
	Middle Class	34	8.50
	Ordinary	268	67.00
	Poor	94	23.50
The region where the vocational college you are attending is located	Pearl River Delta	166	41.50
	East Guangdong	51	12.75
	Western Guangdong	86	21.50
	Northern Guangdong	97	24.25
<b>Total</b>		<b>400</b>	<b>100</b>

The statistical results in Table 4.1 show the distribution of questionnaires for respondents from 8 higher vocational colleges.

(1) The gender distribution of the respondents is as follows: male students account for about 28.25%, female students account for about 71.75%, and female students account for a larger proportion.

(2) The distribution of the respondents' registered residence is as follows: the largest number of people are registered in rural areas, accounting for 66.5%,

followed by cities and towns, accounting for 17.5% and 16%, respectively. The rural population accounts for the vast majority of the survey.

(3) The distribution of the respondents' family economic status is as follows: The respondents' family financial status is mainly concentrated in the two levels of ordinary and poor. Ordinary families account for the highest proportion, reaching 67%, and poor families account for 23.5%. Rich families account for the lowest proportion, only 1%. Middle-class families account for 8.5%. Overall, low- and middle-income families account for the vast majority.

(4) The distribution of the respondents' schools is as follows: 41.5% of the respondents attended vocational colleges located in the Pearl River Delta, 12.75% in eastern Guangdong, 21.5% in western Guangdong, and 24.25% in northern Guangdong.

2. Analyze the results of the questionnaire, presenting mean and standard deviation data.

The questionnaire has five dimensions, and the respondents choose according to their actual situation. The researchers defined the criteria for data interpretation. They conducted statistical analysis on the scale questions using mean and standard deviation after collecting the questionnaires and on the open-ended questions using frequency and percentage. The statistical analysis results are divided into the following five aspects:

**Table 4.2** Mean and standard deviation of each dimension of the questionnaire(n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. Perception of the current status of educational fairness in the school attended	2.92	1.33	Moderate	1
2. Perception of the current status of educational fairness in Guangdong's higher vocational education	2.42	1.28	Low	
3. Perception of the current status of educational fairness in China	2.64	1.26	Moderate	
4. Overall perception of the current status of educational fairness in China	2.64	1.26	Moderate	
5. Personal expectations for the future	2.82	1.36	Moderate	
1. I have equal opportunity in school	3.37	1.31	Moderate	1
2. My classmates of different ethnicities, genders, and socioeconomic backgrounds have equal access to educational resources at school.	3.13	1.45	Moderate	3
3. The school's educational and teaching conditions (teachers, internship and training equipment, books, materials, etc.) can help me to carry out theoretical and practical learning well.	3.02	1.27	Moderate	4
4. The school provides us with advanced training and teaching conditions such as artificial intelligence and virtual simulation	2.65	1.30	Moderate	7
5. The school provides necessary scholarships and grants to help students with difficulties complete their studies	3.27	1.30	Moderate	2
6. The school provides us with high-quality internship opportunities	2.75	1.39	Moderate	5

Table 4.2 (Continued)

Project	$\bar{x}$	S.D.	Level	Ranking
7. The school provides us with a variety of overseas university study and training programs to choose from	2.49	1.40	low	8
8. The cost of higher vocational education does not constitute a financial burden for me	2.66	1.23	Moderate	6
<b>Total</b>	<b>2.92</b>	<b>1.33</b>	<b>Moderate</b>	

According to the statistical results in Table 4.3, there are seven items with a moderate Level, 1 item with a Low Level, and the overall level is Moderate ( $\bar{x}=2.92$ ). Among the eight items, the highest score is "I have equal admission opportunities" ( $\bar{x}=3.37$ ), followed by "The school provides necessary scholarships and grants to help students with difficulties complete their studies" ( $\bar{x}=3.27$ ), and the lowest score is "The school provides us with a variety of overseas university study and training programs to choose from" ( $\bar{x}=2.49$ ).

They perceive educational equity in their schools at a moderate level. Still, they have doubts or dissatisfaction with aspects lower than the overall score ( $\bar{x}=2.92$ ), such as improving advanced teaching conditions, high-quality internship opportunities, international exchange programs, and financial burden.

**Table 4.3** Mean and standard deviation of respondents' perception of the current status of educational equity in their schools (n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. I have equal opportunity in school	3.37	1.31	Moderate	1
2. My classmates of different ethnicities, genders, and socioeconomic backgrounds have equal access to educational resources at school.	3.13	1.45	Moderate	3
3. The school's educational and teaching conditions (teachers, internship and training equipment, books, materials, etc.) can help me to carry out theoretical and practical learning well.	3.02	1.27	Moderate	4
4. The school provides us with advanced training and teaching conditions such as artificial intelligence and virtual simulation	2.65	1.30	Moderate	7
5. The school provides necessary scholarships and grants to help students with difficulties complete their studies	3.27	1.30	Moderate	2
6. The school provides us with high-quality internship opportunities	2.75	1.39	Moderate	5
7. The school provides us with a variety of overseas university study and training programs to choose from	2.49	1.40	low	8
8. The cost of higher vocational education does not constitute a financial burden for me	2.66	1.23	Moderate	6
<b>Total</b>	<b>2.92</b>	<b>1.33</b>	<b>Moderate</b>	

According to the statistical results in Table 4.3, there are seven items with a moderate Level, 1 item with a Low Level, and the overall level is Moderate ( $\bar{x}=2.92$ ).

Among the eight items, the highest score is "I have equal admission opportunities" ( $\bar{x}$ =3.37), followed by " The school provides necessary scholarships and grants to help students with difficulties complete their studies " ( $\bar{x}$ =3.27), and the lowest score is " The school provides us with a variety of overseas university study and training programs to choose from " ( $\bar{x}$ =2.49).

They perceive educational equity in their schools at a moderate level. Still, they have doubts or dissatisfaction with aspects lower than the overall score ( $\bar{x}$ =2.92), such as improving advanced teaching conditions, high-quality internship opportunities, international exchange programs, and financial burden.

**Table 4.4** Mean and standard deviation of respondents' perception of the current status of equity in Guangdong's higher vocational education (n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. There is no big development gap between vocational colleges in Guangdong's eastern, western, and northern regions and those in the Pearl River Delta region.	2.23	1.17	low	3
2. There is no un equity in the allocation of higher vocational education resources by the Guangdong Provincial Government	2.08	1.21	low	4
3. The local governments of Guangdong Province attach great importance to the development of higher vocational education	2.06	1.26	low	5
4. The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education	3.22	1.48	Moderate	1
5. I am satisfied with the current development of higher vocational education in Guangdong Province	2.51	1.29	Moderate	2
<b>Total</b>	<b>2.42</b>	<b>1.28</b>	<b>low</b>	

According to the statistical results in Table 4.4, there are two items with a moderate Level, three items with a Low Level, and the overall Level is Low ( $\bar{x}$ =2.42). Among the five items, the highest score is "The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education" ( $\bar{x}$ =3.22), followed by "I am satisfied with the current development of higher vocational education in Guangdong Province" ( $\bar{x}$ =2.51). The lowest score is "The local government of Guangdong Province attaches great importance to developing higher vocational education" ( $\bar{x}$ =2.06).

Are at a moderate level of satisfaction with the current development of higher vocational education in Guangdong. They generally believe that there is a large development gap between higher vocational colleges in the east, west, and north of Guangdong and those in the Pearl River Delta, inequity in the allocation of educational resources, and some local government's lack of attention to the development of higher vocational education. At the same time, they strongly call for more policies to support the development of higher vocational education.

**Table 4.5** Mean and standard deviation of respondents' perception of the current status of equity in higher vocational education in China (n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. My relatives and friends generally have a positive attitude towards higher vocational education	2.66	1.25	Moderate	3
2. There is no prejudice or discrimination against higher vocational education in society	2.33	1.13	low	5
3. I believe that the status of higher vocational colleges is equal to that of undergraduate colleges	2.59	1.16	Moderate	4
4. The state attaches great importance to the development of higher vocational education	2.78	1.37	Moderate	2

Table 4.5 (Continued)

Project	$\bar{x}$	S.D.	Level	Ranking
5. The concept that "vocational education and general education are two different types of education and have equal importance," as formulated by national laws and policies, has enhanced my recognition of higher vocational education.	2.85	1.37	Moderate	1
<b>Total</b>	<b>2.64</b>	<b>1.26</b>	<b>Moderate</b>	

According to the statistical results in Table 4.5, there are four items with a moderate Level, 1 item with a Low Level, and the overall level is moderate ( $\bar{x}$ =2.64). Among the five items, the highest score is "the similar concept of 'vocational education and general education are two different types of education with equal importance 'proposed by national laws and policies, which has enhanced my sense of identity with higher vocational education " ( $\bar{x}$ =2.85), followed by "the country attaches importance to the development of higher vocational education" ( $\bar{x}$ =2.78), and the lowest score is "there is no prejudice and discrimination against higher vocational education in society" ( $\bar{x}$ =2.33).

The above data show that the attitude of the interviewed students and their relatives and friends towards higher vocational education is at a moderate level, but they still feel strongly about the prejudice and discrimination against it in society.

**Table 4.6** Mean and standard deviation of respondents' overall perception of the current status of educational equity in China (n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. There is no problem of educational inequality in China at present.	2.44	1.07	low	4
2. The issue of educational equity does not affect me	2.32	1.13	low	5
3. There is no large educational gap between urban and rural areas or between regions.	2.49	1.07	low	3
4. Differences in regional economic development are the main cause of educational inequality	3.16	1.32	Moderate	2
5. Educational equity is significant for the harmonious development of society	3.64	1.34	high	1
<b>Total</b>	<b>2.81</b>	<b>1.19</b>	<b>Moderate</b>	

According to the statistical results in Table 4.6, there are 1 item with a high level, 1 item with a moderate level, three items with a low level, and the overall level is moderate ( $\bar{x}$ =2.81). Among the five items, the highest score is " educational equity is significant for the harmonious development of society " ( $\bar{x}$ =3.64), followed by "local economic development differences are the main cause of educational inequality" ( $\bar{x}$ =3.16). The lowest score is "educational equity issues do not affect me" ( $\bar{x}$ =2.32).

The above data show that the students interviewed generally believe that educational equity is significant for the harmonious development of society and that differences in regional economic development are one of the main reasons for the widespread problem of educational inequality today. They believe that the issue of educational equity has a greater impact on it.

**Table 4.7** Mean and standard deviation of respondents' expectations for their future (n=400)

Project	$\bar{x}$	S.D.	Level	Ranking
1. I have the opportunity to study undergraduate	2.78	1.37	Moderate	4
2. I can get equal employment opportunities with general education	2.86	1.34	Moderate	2
3. I can get the same financial benefits as a general education	2.75	1.36	Moderate	5
4. Receiving vocational education is beneficial to future job promotion and salary increase	2.90	1.37	Moderate	1
5. You will not be discriminated against at work because of your educational level	2.84	1.37	Moderate	3
<b>Total</b>	<b>2.82</b>	<b>1.36</b>	<b>Moderate</b>	

According to the statistical results in Table 4.7, there are five items with a moderate Level, and the overall level is moderate ( $\bar{x}$ =2.82). Among the five items, the highest score is "receiving vocational education is conducive to future job promotion and salary increase" ( $\bar{x}$ =2.9), followed by "I can get equal employment opportunities with general education" ( $\bar{x}$ =2.86). The lowest score is "I can get the same economic income as general education" ( $\bar{x}$ =2.75).

The above data show that the interviewed students have moderate expectations for future employment. They are concerned about the opportunities to further improve their academic qualifications and the academic discrimination they may face in future employment.

A comprehensive analysis of the data in Tables 4.2 to 4.7 shows that the standard deviation is between 1.07 and 1.47, which is a medium deviation. The main reason is a large gap between the Pearl River Delta and the eastern, western, and northern Guangdong regions in terms of economic development level, social resource allocation, and teaching resource allocation. This regional difference directly affects the perception of the interviewed students on related issues, resulting in a

certain degree of differentiation in their opinions and evaluations, which makes the standard deviation appear as a medium deviation.

**Table 4.8** Open-ended questions in the questionnaire: Respondents' opinions and suggestions on how schools, governments, or society can promote sustainable equity in higher vocational education

Suggestions	Frequency	Percentage (%)	Ranking
1. Improving the allocation of educational resources	23	18.11	1
2. Improve school infrastructure and teaching staff	21	16.54	2
3. Provide more practice and employment opportunities	18	14.17	3
4. Introduce equity policies to support higher vocational education	16	12.60	4
5. Reducing students' financial burden	16	12.60	4
6. Eliminate social prejudice against higher vocational education	9	7.09	5
7. Promoting equal opportunities	6	4.72	6
8. Improving the quality of higher vocational education and social recognition	6	4.72	6
9. Encourage and support faculty and student development	5	3.94	7
10. Improve school management capabilities and transparency	4	3.15	8
11. Optimize professional course settings and educational content	3	2.36	9
<b>Total</b>		<b>100</b>	

According to the statistical results in Table 4.8, the top five suggestions and opinions include "improving the allocation of educational resources", "enhancing school infrastructure and teaching staff", "providing more practice and employment opportunities", "introducing equity policies to support higher vocational education", and "reducing the financial burden on students", accounting for 18%, 17%, 14% and 13% of the valid responses respectively.

The results of the questionnaire show that the factors that students intuitively feel affect the equity of higher vocational education in Guangdong Province in the following four aspects: first, there are large differences in local economic development; second, there is uneven regional resource distribution; third, there is low social recognition of vocational education. Among them, the large differences in local economic development are one of the main reasons for the widespread problem of educational inequality today. The uneven regional resource distribution has significantly restricted the realization of educational equity, especially in the east, west, and north of Guangdong, where the teaching staff, infrastructure, and information conditions are significantly behind those in the Pearl River Delta region, which highlights the necessity of formulating a resource-balanced development strategy. The questionnaire also revealed the problem of low social recognition of vocational education, showing the importance of strategies to promote social concept transformation.

#### **Structured interview analysis results**

Through structured interviews, this part explores the current situation, existing problems and influencing factors of equity in higher vocational education in Guangdong Province, providing important data support for further SWOT-PEST analysis. This interview interviewed 8 teachers and 8 administrative staff from 8 higher vocational colleges in the Pearl River Delta and the eastern, western, and northern regions of Guangdong Province. The specific interview results are analyzed as follows:

1. Analysis of the respondents' personal information in the structured interviews, presenting data by school, job position, years of working in college, position or title, etc.

According to the statistical results of Table 4.9, among the teachers who participated in the structured interviews, there were 2 professors, accounting for 25%; and 6 associate professors, accounting for 75%. Among the teachers with 10-15 years of teaching or student management experience in higher vocational colleges, there were 3 people, accounting for 37.5%; 16-20 years, accounting for 50%; and 1 person, accounting for 12.5%. Among the administrative staff who participated in the structured interviews were 3 directors, accounting for 37.5%; and 5 deputy directors, accounting for 62.5%. Among the administrative management staff who participated in the structured interviews, there were 5 people, accounting for 62.5%; 16-20 years, accounting for 25%; and 1 person, accounting for 12.5%.

**Table 4.9** Number and proportion of respondents in structured interviews (n=16)

No.	Job Positions	Job title/position	Years of working	School Name
1	Teacher	Asst. Prof.	15	Shenzhen Polytechnic
2	Teacher	Asst. Prof.	12	Guang Dong Industry Polytechnic
3	Teacher	Asst. Prof.	16	JieYang Polytechnic
4	Teacher	Asst. Prof.	19	Shanwei Polytechnic
5	Teacher	professor	20	Yangjiang Polytechnic
6	Teacher	Asst. Prof.	17	Maoming Polytechnic
7	Teacher	Prof.	23	Heyuan Polytechnic
8	Teacher	Asst. Prof.	10	Qingyuan Polytechnic
9	Administrative Staff	Deputy Director	12	Shenzhen Polytechnic

Table 4.9 (Continued)

No.	Job Positions	Job title/position	Years of working	School Name
10	Administrative Staff	Deputy Director of the Academic Affairs Office	16	GuangDong Industry Polytechnic
11	Administrative Staff	Director of Research Department	23	Jieyang Polytechnic
12	Administrative Staff	Deputy Director of Student Affairs Office	12	Shanwei Polytechnic
13	Administrative Staff	Director of Finance Department	18	Yangjiang Polytechnic
14	Administrative Staff	Deputy Secretary of the Youth League Committee	10	Maoming Polytechnic
15	Administrative Staff	Director of Quality Management Department	15	Heyuan Polytechnic
16	Administrative Staff	Vice Dean of the School of Foreign Languages and Economics	14	Qingyuan Polytechnic

2. Analyze the structured interview results, presenting data in frequency and percentage.

The researchers conducted a frequency and percentage analysis of the main viewpoints of the structured interview results (see Table 4.10). According to Table 4.10, the interviewees generally believe that Guangdong Province's higher vocational education has educational inequality problems such as unbalanced distribution of

academic resources (93.75%), unbalanced regional development (62.50%), and large differences in teaching staff, teaching equipment, and practical training conditions (31.25%). It faces challenges such as the outflow of high-level talents (50%), low social recognition (37.50%), and large regional economic development gaps (31.25%). The paired assistance policies (50%), competition policies (37.50%), and student aid policies (25%) formulated by Guangdong Province in solving the problem of educational equity have played an effective role. They believe in establishing long-term communication and coordination between the government, schools, and society. The key measures to promote the solution to the problem of educational equity jointly include cooperation and sharing mechanism (100%), schools actively cooperating with all sectors of society (68.75%), the government playing a leading role in policy formulation and resource allocation (68.75%), implementing policy preferences and resource support (75%), promoting the professional development of the teaching staff (68.75%), continuing to improve policies and regulations on equity resource allocation (56.25%) and formulating a scientific education resource allocation mechanism (50%). Finally, it is recommended to pay more attention to students' mental health (56.25%), career development planning (25%), comprehensive quality training (25%), and enhance the understanding and support of vocational education from all sectors of society (31.25%).

Table 4.10 Structured interview results (n=16)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 5	Interviewer 6	Interviewer 7	Interviewer 8	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 5	Interviewer 6	Interviewer 7	Interviewer 8		
Answer to research purpose 1: To study the current status of equity in higher vocational education in Guangdong Province	A. Educational inequality in Guangdong's higher vocational education																	
A1. Unbalanced regional development	√	√		√		√		√	√			√		√		√	10	62.50%
A2. Unbalanced distribution of educational resources	√			√	√	√	√	√	√	√	√	√	√	√	√	√	15	93.75%
A3. There is a big gap in school conditions, such as teaching staff, teaching equipment, and practical training conditions		√	√		√	√			√								5	31.25%
A4. Large gap in talent training quality				√			√		√			√					4	25.00%
A5. The quality of students admitted varies greatly						√									√		2	12.50%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
A6. Low social recognition of vocational education			√														2	12.50%
A7. Differences in admission policies	√																1	6.25%
A8. There is a big gap between undergraduate and higher vocational education	√																1	6.25%
A9. There is a big difference in students' employment competitiveness				√							√	√					3	18.75%
A10. Management levels vary							√							√			2	12.50%
A11. Insufficient policy support															√		1	6.25%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
B. Which existing policies have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province?																		
B1. Competition policies	√	√		√			√								√	√	6	37.50%
B2. Pairing support policy				√				√			√	√	√	√	√	√	8	50.00%
B3. Optimize fund allocation policies								√									1	6.25%
B4. High-end development policies	√																1	6.25%
B5. Policies on industry-education integration and school-enterprise cooperation		√								√							2	12.50%
B6. Social Personnel Training Policy		√													√		2	12.50%
B7. Student Financial Aid Policies				√	√	√	√										4	25.00%
B8. Long-term education reform and development planning policies to promote the development of higher vocational education										√				√			2	12.50%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
<b>C. Challenges in promoting equity in Guangdong's higher vocational education</b>																		
C1. Overall economic development is sluggish	√					√	√				√						4	25.00%
C2. Large disparity in regional economic development		√										√	√		√	√	5	31.25%
C3. The outflow of high-level talents	√		√	√			√			√			√	√		√	8	50.00%
C4. Decline in birth rate					√			√					√				3	18.75%
C5. Low social recognition				√	√			√			√			√	√		6	37.50%
C6. The mismatch between higher vocational education and the development of the digital economy						√		√							√		3	18.75%
C7. International technical barriers				√					√	√							3	18.75%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
Answer to Research Objective 2: Develop strategies to promote sustainable equity in higher vocational education in Guangdong Province	D. Key measures to solve the problem of sustainable equity in higher vocational education in Guangdong Province																	
D1. Strengthen support for schools in underdeveloped areas through policy inclination and resource support, including investment in funds, technology, and teachers.	√	√	√	√	√		√		√	√	√	√		√		√	12	75.00%
D2. Build a sound evaluation mechanism to evaluate and adjust the effectiveness of policy implementation regularly												√					2	12.50%
D3. Participation and support from all sectors of society	√											√					2	12.50%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
D4. Improve school management level		√													√		2	12.50%
D5. Promote the professional development of the teaching staff		√	√	√		√		√	√	√	√	√	√			√	11	68.75%
D6. Scientific education resource allocation mechanism				√	√	√	√	√							√	√	8	50.00%
D7. Strengthen school-enterprise cooperation			√					√				√	√	√			5	31.25%
D8. Strengthen training for education managers and improve management capabilities and levels.															√		1	6.25%
D9. Promote educational informatization through resource-sharing									√	√		√		√			4	25%
D10. Integration and sharing of vocational education resources								√				√	√				3	18.75%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
<b>E. How to jointly promote sustainable equity in higher vocational education in Guangdong Province</b>																		
E1. The government should play a leading role in policy-making and resource allocation.	√		√	√	√	√	√	√				√	√		√	√	11	68.75%
E2. The government should continue to improve policies and regulations to ensure the equity distribution of resources.	√	√						√			√	√	√	√	√	√	9	56.25%
E3. The government should strengthen supervision over policy implementation.								√	√						√		3	18.75%
E4. Schools should actively participate in implementing policies, especially in the management and use of resources, to ensure that funds are truly used to improve the quality of education and support student development.		√			√											√	3	18.75%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
E5. Schools need to take the initiative to establish close cooperative relationships with all sectors of society, especially enterprises and industry associations, to expand the depth and breadth of school-enterprise cooperation and provide students with more resources and opportunities.	√	√	√	√	√	√	√	√	√	√	√	√					11	68.75%
E6. Schools should actively promote internal management reforms to improve school management and teaching quality							√						√	√	√	√	5	31.25%
E7. Schools need to take the initiative to improve the quality of education, especially schools in remote areas, which should									√	√							2	12.50%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage				
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4						
improve their management level through resource sharing and teaching exchanges.																						
E8. Enterprises can participate in the formulation of talent training programs and the opening of courses to ensure that the talents delivered by higher vocational colleges meet the needs of economic and social development.		√																			1	6.25%
E9. Enterprises can participate in developing vocational education by providing internship opportunities, financial support, and funding projects.	√		√		√					√		√	√	√	√	√	√				9	56.25%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
E10. Establish a long-term communication, coordination, cooperation, and sharing mechanism among the government, schools, and society	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	16	100.00%
F. Other suggestions																		
F1. Pay more attention to students' mental health	√	√	√	√		√				√		√			√	√	9	56.25%
F2. Pay more attention to career development planning guidance	√	√								√		√					4	25.00%
F3. Strengthen students' personalized development			√												√		2	12.50%
F4. Strengthen the comprehensive quality training of students						√			√		√		√				4	25.00%

Table 4.10 (Continued)

Viewpoint	Administrative Staff								Teacher								Frequency	Percentage
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4		
F5. Strengthen students' professional ethics and social responsibility training											√						1	6.25%
F6. Strengthen teachers' professional development and innovation capabilities															√		1	6.25%
F7. Improve teachers' ability to use new technologies														√			1	6.25%
F8. Improve the understanding and support of vocational education from all walks of life				√	√			√	√							√	5	31.25%
F9. Enhance the transparency and efficiency of financial management					√												1	6.25%
F10. Update of educational concepts and innovation of educational models											√						1	6.25%

Table 4.10 (Continued)

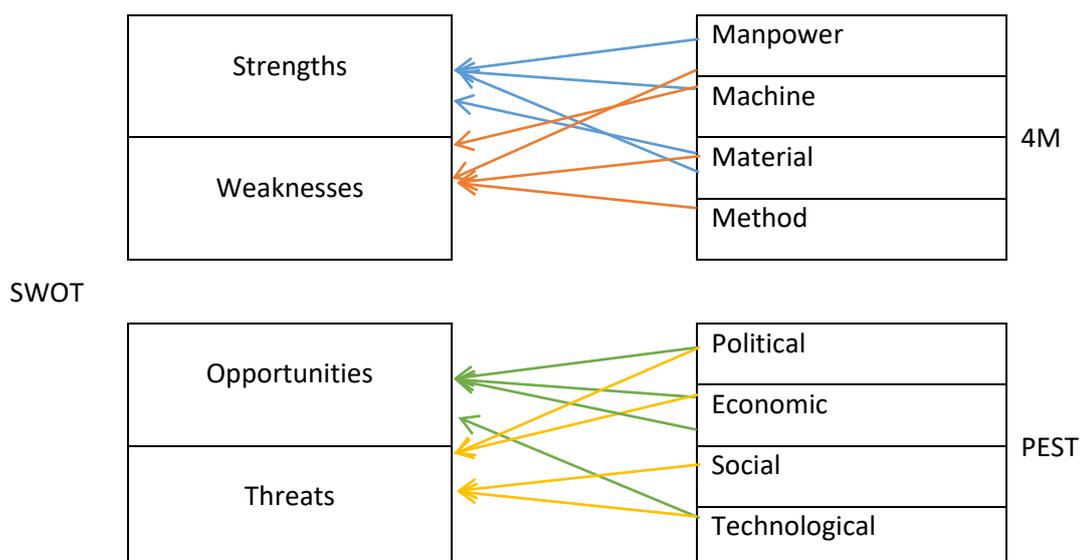
Viewpoint	Administrative Staff								Teacher								Frequency	Percentage		
	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4	Interviewer 1	Interviewer 2	Interviewer 3	Interviewer 4				
F11. Strengthen social publicity on educational equity and increase the recognition and attention paid to vocational education by the whole society														√				1	6.25%	
F12. Strengthen communication with families and society, form synergy, and jointly create a good environment for the all-round development of students.																		√	1	6.25%

From the perspective of managers and teachers, structured interviews deeply reveal the specific factors that affect the sustainable equity of higher vocational education in Guangdong Province and provide micro-support for strategy design. The interview results show that three factors affect the equity of higher vocational education in Guangdong Province: first, regional differences in policy design and implementation; second, insufficient teacher team construction; and third, negative social perception of vocational

education. Regional differences in policy design and implementation weaken the equity effect of policies, especially in underdeveloped areas, where the policy implementation capacity and financial support are insufficient, which clarifies the necessity of formulating a regional policy coordination mechanism. At the same time, the interviews reflect the constraints of inadequate teacher team construction on education quality and call for improving teacher capabilities through special teacher training and career development incentive mechanisms. In addition, the negative social perception of vocational education further exacerbates the difficulty of promoting equity, indicating the need to adopt social publicity and education value enhancement strategies.

### Analysis of focus group interview results

In order to obtain a more comprehensive perspective and verify the results of the questionnaire and structured interview, the researchers made full use of the analytical advantages of the 4M method and the PEST method, conducted in-depth discussions on internal and external factors respectively, and conducted a comprehensive, integrated analysis using the SWOT method (see Figure 4.1). It can be seen from the framework in the figure that the two analysis tools, 4M and PEST, have refined the elements of the SWOT matrix from the micro and macro levels, respectively. This integrated analysis method can more comprehensively reveal the core issues affecting the equity of higher vocational education in Guangdong Province and provide systematic support for formulating subsequent strategies.



**Figure 4.1** SWOT combination 4M, PEST

Specifically, the researchers designed an outline for the focus group interview on internal factors based on the 4M method and an outline for the focus group interview on external factors based on the PEST method (see Table 4.11), and organized and conducted focus group interviews. During the interviews, the interviewees discussed, shared their views, and exchanged opinions on the internal

and external factors that affect the equity of higher vocational education in Guangdong Province, and finally formed a widely recognized SWOT analysis matrix. The participants of the focus group interviews were consistent with the interviewees of the structured interviews, and the results of their personal information analysis are detailed in Table 4.8.

**Table 4.11** Focus group interview outline

SWOT	4M&PEST	Focus group interview questions
<b>Strengths</b> (S)	Manpower	What are Guangdong Province's outstanding advantages in human resources (such as teaching staff and management team) in promoting equity in higher vocational education in Guangdong Province?
	Machine	What are the outstanding advantages of Guangdong Province in terms of facilities, equipment, and information technology that promote equity in higher vocational education in Guangdong Province? In addition, what other technologies or resources can further promote educational equity?
	Material	What are the educational resource advantages of Guangdong Province in promoting equity in higher vocational education in Guangdong Province?
	Method	What are Guangdong Province's policy advantages in promoting equity in higher vocational education in Guangdong Province?
<b>Weaknesses</b> (W)	Manpower	What deficiencies does Guangdong Province have regarding human resources (such as teaching staff and management team)? How do these deficiencies affect higher vocational colleges in economically developed and underdeveloped regions?

Table 4.11 (Continued)

SWOT	4M&PEST	Focus group interview questions
	Machine	<p>1. What are the shortcomings of Guangdong Province in terms of facilities, equipment, and information construction?</p> <p>2. What differential impacts do these shortcomings have on higher vocational colleges in economically developed and underdeveloped regions?</p>
	Material	What problems of unbalanced distribution of educational resources exist in Guangdong Province's higher vocational education?
	Method	What specific policies or implementation methods in Guangdong Province may have exacerbated the inequity in higher vocational education?
<b>Opportunities (O)</b>	Political (P)	<p>1. How does Guangdong Province use national policies to promote equity in higher vocational education? What successful policy experiences from other provinces or countries can be learned, especially those for underdeveloped regions?</p> <p>2. What policy opportunities can higher vocational colleges in Guangdong Province, especially those in underdeveloped areas, take advantage of to promote their own development?</p>
	Economic (E)	What opportunities does the economic environment provide for higher vocational education in Guangdong Province?
	Social (S)	What favorable development conditions have social development trends brought to Guangdong Province's higher vocational education?

Table 4.11 (Continued)

SWOT	4M&PEST	Focus group interview questions
	Technological (T)	What opportunities does technological progress provide for equity in higher vocational education in Guangdong Province? In applying new technologies such as AI and virtual simulation, what other areas that can promote equity in higher vocational education in Guangdong Province have not been fully utilized?
<b>Threats</b> (T)	Political (P)	<ol style="list-style-type: none"> <li>1. Which policies or changes may threaten the equity of higher vocational education in Guangdong Province?</li> <li>2. Is there a situation where general education is given more importance than vocational education?</li> <li>3. Is Guangdong Province's support for higher vocational colleges in underdeveloped areas insufficient?</li> </ol>
	Economic (E)	<ol style="list-style-type: none"> <li>1. What challenges does economic uncertainty or change pose to promoting equity in higher vocational education in Guangdong Province?</li> <li>2. What challenges does the huge disparity in regional economic development in Guangdong Province pose to promoting equity in higher vocational education in Guangdong Province?</li> </ol>
	Social (S)	What social factors may threaten the equity of higher vocational education in Guangdong Province? For example, do phenomena such as low social recognition, declining birth rate, and loss of high-level talents significantly impact the equity of higher vocational education in Guangdong Province?

Table 4.11 (Continued)

SWOT	4M&PEST	Focus group interview questions
	Technological (T)	What technological changes may threaten the equity of higher vocational education in Guangdong Province? For example, will eliminating outdated technologies, the popularization of new technologies, or the existence of technological barriers exacerbate educational inequality?
<b>Additional questions</b>		1. Do you agree with other members' opinions? If you disagree, what are the reasons? 2. What important factors do you think we missed?

Based on the focus interviews' results, the researchers combined the quantitative and qualitative data obtained from questionnaires and structured interviews to systematically identify the core problems and potential advantages facing the equity of higher vocational education in Guangdong Province and finally constructed a SWOT analysis matrix (see Table 4.12).

Table 4.12 SWOT Analysis Matrix

SWOT	4M&PEST
<p><b>Strengths</b></p> <p>(S)</p>	<p><b>Manpower:</b></p> <p>S1. Guangdong Province has a strong appeal to high-quality talents;</p> <p>S2. The teaching staff is generally of high quality and rich experience;</p> <p>S3. School administrators have strong management capabilities;</p> <p>S4. The education department has high planning and coordination capabilities.</p> <p><b>Machine:</b></p> <p>S5. Guangdong Province’s higher vocational colleges have better teaching equipment and information technology foundation;</p> <p>S6. Guangdong Province actively promotes the application of cutting-edge technologies such as virtual simulation, big data, and AI;</p> <p>S7. School-enterprise cooperation and production, education, and research integration provide teachers and students with cutting-edge industry technologies and real projects.</p> <p><b>Material:</b></p> <p>S8. Strong financial support;</p> <p>S9. Rich teaching resources;</p> <p>S10. Shareable industry education resources and online education resources;</p> <p>S11. Extensive international cooperation resources.</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p><b>Method:</b></p> <p>S12. The government encourages vocational education to be linked to economic development, to be associated with regional development, and to strengthen cooperation with enterprises;</p> <p>S13. The government strongly supports the improvement of teacher quality and information construction in higher vocational colleges;</p> <p>S14. The government actively promotes reform and innovation in teaching models in higher vocational colleges.</p> <p><b>Weaknesses</b></p> <p><b>Manpower:</b></p> <p>(W) W1. The number and quality of teaching staff in vocational colleges in underdeveloped areas are insufficient;</p> <p>W2. The professional quality of the management team of higher vocational colleges in underdeveloped areas needs to be improved;</p> <p>W3. Teachers and administrators of vocational colleges in underdeveloped areas are more likely to face bottlenecks in their career development paths;</p> <p>W4. Most managers in government departments in underdeveloped regions do not have the qualities and abilities to manage higher education.</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p><b>Machine:</b></p> <p>W5. The information infrastructure of higher vocational colleges in underdeveloped areas is not perfect;</p> <p>W6. Vocational colleges in underdeveloped areas lack information-based teaching platforms and resources;</p> <p>W7. The utilization rate of information technology equipment in higher vocational colleges in underdeveloped areas is relatively low;</p> <p>W8. The information literacy of managers and teachers in higher vocational colleges in underdeveloped areas is not high;</p> <p>W9. The information construction of higher vocational colleges in underdeveloped areas lacks unified standards and planning, making it difficult to achieve data sharing.</p> <p><b>Material:</b></p> <p>W10. There are large regional differences in the financial investment of local governments in higher vocational education;</p> <p>W11. Provincial financial funds or projects are insufficient to provide preferential support to higher vocational colleges in underdeveloped areas;</p> <p>W12. There are large differences in the difficulty of obtaining scientific research projects and funds;</p> <p>W13. There is a large gap in school-enterprise cooperation resources.</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p><b>Method:</b></p> <p>W14. Policy resources are too concentrated on key colleges in economically developed areas, and there is a lack of preferential support policies for higher vocational colleges in underdeveloped areas;</p> <p>W15. The effects of school-enterprise cooperation policies vary in different regions;</p> <p>W16. Imbalance in educational informatization construction.</p>
<p><b>Opportunities</b> (O)</p>	<p><b>Political(P)</b></p> <p>O1. We can learn from successful policy experiences at home and abroad.</p> <p>O2. Make good use of the national and provincial government's support policies for vocational education informatization, teacher team building, and high-level professional group construction;</p> <p>O3. Take advantage of the educational cooperation opportunities in the development plan of the Guangdong-Hong Kong-Macao Greater Bay Area;</p> <p>O4. Make good use of the "Hundred Million Project" and "Rural Revitalization" policies to develop majors that are closely related to local economic needs.</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p><b>Economic(E)</b></p> <p>O5. Provides a wide range of opportunities for school-enterprise cooperation and integration of industry and education;</p> <p>O6. It is easier to meet the needs of local economic development, technological frontiers, and employment market;</p> <p>O7. More financial funds can be invested in vocational education;</p> <p>O8. An export-oriented economy provides more opportunities for international development;</p> <p>O9. Provides diverse employment options and a good entrepreneurial environment.</p> <p><b>Social(S)</b></p> <p>O10. The attention and recognition of higher vocational education have increased;</p> <p>O11. Society's concern for educational equity and sustainable development is gradually deepening;</p> <p>O12. Society's emphasis on lifelong learning is increasing;</p> <p>O13. The society is full of innovation and entrepreneurship.</p> <p><b>Technological(T)</b></p> <p>O14. Online education platforms, distance education, and hybrid learning models promote educational cooperation, sharing of high-quality educational resources, and improvement of teaching staff quality;</p> <p>O15. AI technology promotes personalized education;</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p>O16. Virtual reality (VR) technology reduces the impact of equipment shortage;</p> <p>O17. Cloud computing and big data technologies make the allocation and management of educational resources more efficient;</p> <p>O18. Modern teaching tools improve teaching effectiveness.</p>
<b>Threats(T)</b>	<b>Political(P)</b>
	<p>T1. Uneven distribution of fiscal budget;</p> <p>T2. Resource allocation tends to general higher education;</p> <p>T3. The path to further education through vocational education is not smooth;</p> <p>T4. Policy implementation deviation;</p> <p>T5. Admissions policy gives priority to general education.</p>
	<b>Economic(E)</b>
	<p>T6. Unbalanced regional economic development;</p> <p>T7. Differences in regional fiscal capacity and sustainability of fiscal allocations;</p> <p>T8. Differences in industrial structure and school-enterprise cooperation;</p> <p>T9. Unbalanced job market.</p>

Table 4.12 (Continued)

SWOT	4M&PEST
	<p><b>Social(S)</b></p> <p>T10. Vocational education has low social recognition and insufficient social reputation;</p> <p>T11. Decline in birth rate;</p> <p>T12. Loss of high-level talents;</p> <p>T13. Urbanization further dilutes educational resources in rural and underdeveloped areas;</p> <p>T14. Insufficient social mobility.</p> <p><b>Technological(T)</b></p> <p>T15. There are large differences in technical support between regions;</p> <p>T16. Emerging technologies require high investment;</p> <p>T17. Teachers in underdeveloped areas lack training opportunities;</p> <p>T18. Students in underdeveloped regions are relatively inadequate in adapting to new technologies.</p>

Table 4.12 The analysis results verified the three factors affecting the equity of higher vocational education in Guangdong Province, as revealed by the questionnaire results. First, there are significant differences in local economic development; second, there is uneven regional resource distribution; third, the society's recognition of vocational education is relatively low. The three aspects of influence revealed by the structured interview results are: first, regional differences in policy design and implementation; second, insufficient teacher team construction; and third, the society's negative perception of vocational education. The focused interview integrated multiple views and clarified the deep-seated factors affecting the sustainable equity of higher vocational education in Guangdong Province from various angles: first, there is a significant imbalance in educational resources between different regions, especially the eastern, western and northern regions of Guangdong are significantly weaker than the Pearl River Delta region in terms of financial support, infrastructure, and teaching staff; second, the society's recognition of vocational education is relatively low, especially in terms of student development outcomes and employment competitiveness; third, there are regional differences in the intensity and effectiveness of policy implementation.

This part further analyzes the internal and external factors that affect the sustainable equity of higher vocational education in Guangdong Province. Combining quantitative and qualitative analysis, the factors that affect the sustainable equity of higher vocational education in Guangdong Province can be attributed to three key factors: political, economic, and social factors. This lays the foundation for using the TOWS analysis method to analyze and propose a draft strategy. In the second part, based on these analysis results and combined with the TOWS analysis method, we will further explore how to formulate targeted strategies to improve the equity and sustainability of higher vocational education in Guangdong Province.

**Part 2: Analytical results in service of Research Objective 2: To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

**Draft strategy based on TOWS analysis**

TOWS analysis is an extended version of SWOT analysis used to make strategy formulation more specific and action-oriented. TOWS analysis helps organizations or individuals formulate more targeted strategies by combining internal strengths and weaknesses with external opportunities and threats. According to the analysis results in Table 4.12, the researchers used the TOWS analysis method to construct a TOWS analysis matrix. They formulated SO, ST, WO, and WT strategies for provincial governments, municipal governments, vocational colleges in underdeveloped areas, and society. The specific results are shown in Table 4.13.

Table 4.13 TOWS Analysis Matrix

Strategy Type	How to do it
SO, Strategy	<p><b>Provincial government level</b></p> <p>SO1: Make good use of national support policies and funds. Guangdong Province should fully grasp the policy opportunities of national support for developing higher vocational education, encourage and guide higher vocational colleges to strive for more national financial support and educational resources and inject a strong impetus into developing vocational education.</p> <p>SO2: Take advantage of the information industry to promote the construction of educational informatization. With the help of Guangdong Province's good informatization foundation, policy support, and tax incentives, attract enterprises to participate in the informatization construction of higher vocational colleges across the province, significantly helping underdeveloped areas improve the education informatization platform and enhance teaching quality and management efficiency.</p> <p>SO3: Take advantage of the export-oriented economy and strengthen international cooperation and resource introduction. Specific measures include: 1. Establishing a Guangdong-Hong Kong-Macao Higher Vocational Education Cooperation Alliance to promote international exchanges between teachers and students; 2. International education funds should be introduced to support the construction of bilingual courses in underdeveloped areas. This strategy is highly consistent with the requirements of "coordinated development of vocational education" in the Outline of the Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area. It aims to improve the level of educational equity through internationalization.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>SO4: Strengthen the integration of production and education and school-enterprise cooperation. Taking advantage of Guangdong Province's perfect industrial chain, promoting in-depth cooperation between higher vocational colleges in underdeveloped areas and enterprises in developed regions, providing cutting-edge technology support, practical opportunities, employment guarantees, and improving education quality and employment rate.</p> <p>SO5: Build a diversified education system. Under the government's leadership, build a cooperative education platform for the government, industry, enterprises, and universities, connect the education, talent, industrial, and innovation chains, and realize resource sharing and collaborative education.</p> <p>SO6: Encourage enterprises to support the development of higher vocational education. Formulate incentive policies to give tax exemptions and social honors to enterprises that actively participate in the construction of higher vocational colleges and attract more enterprises to invest in the education field, especially in funding, technology, and practical training resources.</p>
	<p><b>Municipal government level</b></p> <p>SO7: Build a diversified funding model. Shift from a single government financial investment model to a diversified participation model of social capital, introduce funds through school-enterprise cooperation and PPP models, and improve the hardware facilities and resource allocation of higher vocational colleges.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>SO8: Use national debt funds to upgrade school equipment. Actively strive for national debt funds to update the equipment of higher vocational colleges in underdeveloped areas, narrow the hardware gap with developed areas, and optimize students' learning environment and practice conditions.</p>
	<p>SO9: Integrate higher vocational education into local development strategies. In line with regional economic development needs, higher vocational education should be incorporated into local development plans to guide higher vocational colleges in developing in coordination with the local economy and form a mutually beneficial and win-win situation.</p>
	<p>SO10: Optimize and integrate regional educational resources. Through sharing mechanisms, efficient allocation of educational resources within the region is promoted, duplication of construction is avoided, and balanced development of vocational education is promoted.</p>
	<p>SO11: Promote regional cooperation in educational informatization. Use provincial support to promote regional collaboration and sharing in educational informatization, improve the level of informatization of colleges and universities in underdeveloped regions, and improve the quality of education.</p>
	<p>At the level of higher vocational colleges in underdeveloped areas</p>
	<p>SO12: Improve the quality of education with the help of policies and financial support. Utilize national and provincial policy support, develop specialty majors aligned with local needs, and improve teaching quality and</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	students' employment competitiveness.
	SO13: Actively participate in local social governance. Carry out community services, cultural heritage, and rural revitalization projects, enhance social influence, and serve local economic and social development.
	SO14: Strengthen skills training for social personnel. Provide vocational skills training and continuing education according to local needs, help the local labor market, and enhance social recognition.
	SO15: Promote information-based education reform. With policy support, online and distance education should be introduced to compensate for the lack of traditional education resources and improve teaching efficiency and quality.
	<b>Social level</b>
	SO16: Mobilize social forces to support the development of vocational education. With the public's concern for educational equity, all sectors of society should be encouraged to participate in vocational education and improve the quality of higher vocational colleges in underdeveloped areas through financial donations, technical support, and school-enterprise cooperation.
	SO17: Promote an innovative and entrepreneurial atmosphere and support graduates in starting their businesses. By promoting an innovative and entrepreneurial culture and setting up entrepreneurial funds and incubation platforms, we can help graduates from vocational colleges, especially those in underdeveloped areas, start their businesses and enhance their diversity of employment options and social mobility.

Table 4.13 (Continued)

Strategy Type	How to do it
ST Strategy	<p><b>Provincial government level</b></p> <p>ST1: Strengthen education policy inclination. The provincial government will increase support for higher vocational colleges in underdeveloped areas through policy inclination and exceptional support, reasonably allocate fiscal budgets, avoid excessive resources to general higher education, and reduce the gap in education development between regions.</p> <p>ST2: Implement a social recognition improvement project. Through various forms of publicity and policy guidance, we will improve the public's awareness and recognition of vocational education, enhance its attractiveness, and actively address the problems of low social recognition and loss of high-level talents.</p> <p>ST3: Implement the regional education coordinated development strategy. Promote economically developed regions to pair up and support underdeveloped regions in higher vocational education, implement comprehensive support measures such as resource sharing, project co-construction, and cadre secondment, and compensate for the imbalance in educational resources and development levels among regions.</p> <p>ST4: Promote technology support policies to narrow regional technology gaps. To address the problem of insufficient technology updates in underdeveloped regions, provincial governments can introduce special policies to concentrate resources to provide technical support and teacher training to ensure that higher vocational colleges in these regions keep up with technological development.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>ST5: Strengthen information construction and reduce urban and rural education gaps. Promote the information construction of education in the province, especially in underdeveloped areas, and ensure that urban and rural students can equally enjoy high-quality educational resources through sharing platforms and distance education.</p>
	<p>ST6: Improve the level of high-quality vocational colleges. Support qualified high-quality vocational colleges to upgrade to vocational undergraduate universities, explore the establishment of master's and doctoral training centers, improve the upward channel of vocational education, attract high-level talents and high-quality students, and improve the quality and status of vocational education.</p>
	<p><b>Municipal government level</b></p>
	<p>ST7: Strengthen regional sharing and cooperation of educational resources. Local governments should flexibly use policy tools to integrate and optimize educational resources based on economic and financial conditions, promote regional sharing of educational resources, and alleviate the shortage of academic resources in underdeveloped areas.</p>
	<p>ST8: Promote inter-regional educational cooperation. Encourage higher vocational colleges in the region to strengthen collaboration with economically developed areas, improve the quality of education in higher vocational colleges in underdeveloped regions through teacher exchanges, student exchanges, and joint training, and narrow the regional educational gap.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p><b>At the level of higher vocational colleges in underdeveloped areas</b></p>
	<p>ST9: Make use of policy and financial support to improve self-development capabilities. Vocational colleges in underdeveloped areas should make full use of policy and financial support to enhance the quality of education and management capabilities by introducing advanced technology and high-quality talents and overcoming the development bottlenecks caused by regional economic differences.</p>
	<p>ST10: Promote cooperation with colleges and universities in developed regions to improve technical level. Vocational colleges and universities in underdeveloped areas should actively seek to collaborate with colleges and universities in developed regions to jointly run schools, introduce technology, train teachers, conduct cooperative scientific research, and improve technical level and modernization capabilities.</p>
	<p>ST11: Deepen school-enterprise cooperation and enhance market adaptability. Strengthen collaboration with local and provincial enterprises, promote the deep integration of schools and enterprises, provide more practical training opportunities, improve students' practical ability and employment competitiveness, and address the problems of imbalance in the employment market and lack of recognition.</p>
	<p>ST12: Guide teachers to continue their studies and improve their cutting-edge professional capabilities. With the help of continuing online education resources provided by the government and high-quality universities, teachers' professional capabilities, especially in applying information technology and emerging technologies, can be improved to avoid technological lags affecting teaching quality.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p><b>Social life</b></p> <p>ST13: Give full play to corporate social responsibility and support vocational education. Guide enterprises to fulfill their social responsibilities and help vocational colleges in underdeveloped areas improve the quality of teaching and strengthen the depth of school-enterprise cooperation by providing internship opportunities, participating in curriculum design, and jointly building training bases.</p>
<b>WO Strategy</b>	<p><b>Provincial government level</b></p> <p>WO1: Implement regional balanced development policies to alleviate the unequal distribution of educational resources. Formulate more biased regional development policies, prioritize allocating financial funds, excellent teachers, and scientific research projects to underdeveloped regions, ensure equity distribution of educational resources, and comprehensively improve vocational education in these regions.</p> <p>WO2: Increase provincial fiscal investment to narrow regional gaps. Increase investment in information construction, teacher training, and infrastructure for higher vocational colleges in underdeveloped regions to solve their resource shortage problem, promote balanced development of education quality, and narrow the gap with developed areas.</p> <p>WO3: Implement special assistance projects to improve education quality. Launch provincial special assistance projects, concentrate high-quality resources, and adopt "paired assistance" and "paired co-construction" to provide comprehensive support for higher vocational colleges in underdeveloped areas and improve their teaching and management levels.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>WO4: Develop a unique plan for teacher training. Given the shortcomings of teachers in higher vocational colleges in underdeveloped areas, develop a unique training plan, implement centralized training, off-site training, and cross-school exchanges, and improve teachers' professional quality and information-based teaching ability.</p>
	<p>WO5: Strengthen provincial coordination and promote resource sharing. Strengthen the provincial educational resource coordination mechanism, encourage resource sharing between higher vocational colleges in developed and underdeveloped regions, and improve the utilization efficiency and school-running level of academic resources in underdeveloped areas through joint school-running and teacher-sending.</p>
	<p><b>Municipal government level</b></p>
	<p>WO6: Promote local enterprises to participate in vocational education. Encourage local enterprises to cooperate with higher vocational colleges in underdeveloped areas to solve the problem of insufficient resources for school-enterprise cooperation and enhance the effectiveness of vocational education by jointly building training bases, providing internship opportunities, and funding school construction.</p>
	<p>WO7: Fully exploit the role of higher vocational colleges as talent think tanks. Establish regional characteristic research centers or think tanks and have higher vocational colleges provide decision-making consultation, technical support, and project cooperation to serve local governments and enterprises and promote the innovative development of the regional economy.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
<b>At the level of higher vocational colleges in underdeveloped areas</b>	
	<p>WO8: Actively seek external support. Vocational colleges in underdeveloped areas should actively seek policy and financial support from provincial, prefectural, and municipal governments and, at the same time, cooperate with colleges in developed regions to optimize resource allocation and improve education quality.</p>
	<p>WO9: Strengthen inter-school cooperation with developed regions. Establish long-term cooperative relations with higher vocational colleges in developed areas, improve their teaching and management levels through joint schooling, resource sharing, research, etc., and narrow the regional gap.</p>
	<p>WO10: Expand investment in information construction. Concentrate resources to increase investment in information technology, introduce advanced teaching equipment, improve teachers' information technology capabilities, optimize online education platforms, make up for insufficient infrastructure, and promote educational modernization.</p>
	<p>WO11: Deepen school-enterprise cooperation and promote the integration of industry and education. Take advantage of local economic advantages, deepen cooperation with leading enterprises and industrial parks, jointly build industry-education integration bases and training centers, cultivate high-skilled talents that meet market demand, and achieve resource sharing and mutual benefit.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p><b>Social level</b></p> <p>WO12: Advocate for social forces to pay attention to educational equity. Through media publicity, public welfare projects, and policy advocacy, social forces focus on equity in vocational education, promote more resources to underdeveloped regions, and jointly narrow the educational gap between areas.</p>
<b>WT Strategy</b>	<p><b>Provincial government level</b></p> <p>WT1: Strengthen financial support to narrow regional education gaps. Increase financial support for higher vocational colleges in underdeveloped regions, focus on teacher development, infrastructure improvement, and sharing of teaching resources, ensure that these colleges develop in sync with the province, and reduce the education gap caused by uneven budget allocation.</p> <p>WT2: Formulate unified information construction standards for the province. Promote the information construction of higher vocational colleges, formulate unified standards and specifications, and provide technical support and financial subsidies to underdeveloped areas to narrow the information gap and improve the quality of education.</p> <p>WT3: Implement a teacher professional improvement plan. Implement a customized professional improvement plan for teachers in higher vocational colleges in underdeveloped areas, improve teachers' professional ability and teaching level through further study, exchanges, and regular training, and make up for the educational shortcomings caused by differences in teacher quality.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>WT4: Provincial-level coordinated management of higher vocational colleges in underdeveloped areas. Promote the adjustment of higher vocational colleges in underdeveloped regions of the east, west, and north of Guangdong to provincial universities, with the provincial finance fully bearing their education expenditures, alleviating local fiscal pressure, promoting improving education quality, and better serving local economic and social development.</p>
	<p>WT5: Optimize the layout of higher vocational colleges. According to industrial design and strategic planning, the construction of vocational education cities with complete industrial chains should be promoted in all prefecture-level cities. Through policy guidance and financial support, over-concentrated higher vocational colleges will be relocated or branched to underdeveloped areas to improve the balance of education.</p>
	<p>WT6: Strengthen local government responsibility and ensure policy implementation. Establishing a supervision and accountability mechanism ensures that local governments strictly implement education equity policies, adjust policies according to regional needs, and actively respond to challenges from economic fluctuations and changes in the competitive environment.</p>
	<p><b>Municipal government level</b></p>
	<p>WT7: Establish a guiding mechanism for school-enterprise cooperation. Promote local enterprises to build training bases, carry out scientific research cooperation with higher vocational colleges in underdeveloped areas, make up for the lack of resources caused by differences in economic and industrial structures through policy support and incentives, and enhance the strength of school management.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>WT8: Establish a multi-party participation mechanism for adjusting professional settings. Strengthen the collaboration among local governments, higher vocational colleges, and enterprises, optimize professional settings through policy guidance and financial support, make them more in line with the needs of regional economic development, and improve the market adaptability of vocational education.</p>
	<p><b>At the level of higher vocational colleges in underdeveloped areas</b></p>
	<p>WT9: Optimize resource allocation and improve internal management. Establish a resource optimization mechanism to efficiently utilize limited funds and teaching resources and comprehensively enhance the quality of education by strengthening internal management, improving teacher quality, and strengthening information construction.</p>
	<p>WT10: Strengthen inter-school cooperation and share high-quality educational resources. Actively cooperate with higher vocational colleges in developed regions to share teachers, teaching resources, and student exchange programs, improve the level of education, and make up for the disadvantage of insufficient resources.</p>
	<p>WT11: Optimize professional settings and enhance market adaptability. According to regional economic and industrial characteristics, adjust and optimize professional settings, open specialty majors that meet market demand, deepen school-enterprise cooperation, enhance graduates' employment competitiveness, and promote high-quality development of vocational education.</p>

Table 4.13 (Continued)

Strategy Type	How to do it
	<p>WT12: Establish a professional setting evaluation and feedback mechanism. Regularly evaluate professional settings, make timely adjustments based on market and economic changes, introduce social evaluation and corporate feedback, and ensure that professional settings accurately meet regional economic needs.</p>
	<p><b>Social level</b></p>
	<p>WT13: Increase public attention and promote educational equity. Through media publicity and public opinion guidance, we will increase public attention to vocational education and educational equity, focus on academic issues in underdeveloped areas, attract more resources, and alleviate the shortage of educational resources.</p>
	<p>WT14: Guide social forces to support the development of vocational education. Encourage enterprises and public welfare organizations to pay attention to vocational education in underdeveloped areas, promote the balance of educational resources, and achieve sustainable development of vocational education by setting up special funds, providing scholarships, and supporting teacher training.</p>

The researchers used the 4M, PEST, and SWOT analysis methods to analyze the questionnaire, structured interview, focus interview, and the TOWS analysis method to construct an analysis matrix. They also proposed a draft strategy to promote sustainable equity in higher vocational education in Guangdong Province. The focus interview results and relevant literature support the draft strategy in Table 4.13.

Based on the key influencing factors of equity in higher vocational education in Guangdong Province obtained through questionnaires, structured interviews, and focus interviews, the researchers sorted out the draft strategy in Table 4.13 and finally came up with the draft strategy in Table 4.14, which specifically includes three aspects, 11 main strategies, and 56 measures, as shown in Tables 4.14, 4.15, and Figures 4.2, 4.3, 4.4.

**Table 4.14** Strategy List

NO.	Aspects of Strategies	Main Measures	Specific Measures
1	Political Strategy	4	28
2	Economic Strategy	3	8
3	Social Strategy	4	20
	<b>Total</b>	<b>11</b>	<b>56</b>

**Table 4.15** Draft strategy for promoting sustainable equity in higher vocational education in Guangdong Province

Aspect	Main measures	Specific measures
Political Strategy	<ol style="list-style-type: none"> <li>1. Make good use of the existing development policies of superiors</li> <li>2. Formulate and implement preferential assistance policies</li> </ol>	<ol style="list-style-type: none"> <li>1. Make good use of national support policies and funds.</li> <li>2. Improve the quality of education through policy and financial support.</li> <li>3. Promote information-based education reform.</li> <li>4. Make use of policy and financial support to enhance self-development capabilities.</li> <li>5. Actively seek external support.</li> <li>1. Optimize and integrate regional educational resources.</li> <li>2. Strengthen the tilt of education policies.</li> <li>3. Promote technology support policies to narrow regional technology gaps.</li> <li>4. Strengthen information construction and reduce the urban and rural education gap.</li> <li>5. Improve the quality of higher vocational colleges.</li> <li>6. Guide teachers to pursue further studies and improve their cutting-edge professional abilities.</li> <li>7. Implement balanced regional development policies to alleviate inequity in educational resource distribution.</li> <li>8. Implement special assistance projects to improve the quality of education.</li> <li>9. Develop unique plans for teacher training.</li> </ol>

Table 4.15 (Continued)

Aspect	Main measures	Specific measures
		10. Implement the teacher's professional improvement plan.
		11. Provincial level shall coordinate and manage higher vocational colleges in underdeveloped areas.
	3. Formulate and implement guiding assistance policies	1. Encourage enterprises to support the development of higher vocational education.
		2. Integrate higher vocational education into local development strategies.
		3. Promote regional cooperation in educational informatization.
		4. Implement the regional education coordinated development strategy.
		5. Strengthen the sharing and cooperation of educational resources within the region.
		6. Promote regional educational cooperation.
		7. Strengthen provincial coordination and promote resource sharing.
		8. Give full play to the role of higher vocational colleges as talent think tanks.
		9. Optimize the layout of higher vocational colleges.
		10. Strengthen local governments' responsibility and ensure policy implementation.

Table 4.15 (Continued)

Aspect	Main measures	Specific measures
	4. Improve the governance level of higher vocational colleges	<ol style="list-style-type: none"> <li>1. Optimize resource allocation and improve internal management.</li> <li>2. Establish an evaluation and feedback mechanism for professional settings.</li> </ol>
Economic Strategy	<ol style="list-style-type: none"> <li>1. Actively strive for and make good use of external economic resources</li> <li>2. Implement preferential support input</li> <li>3. Strengthen industrial support and technical cooperation</li> </ol>	<ol style="list-style-type: none"> <li>1. Give full play to the advantages of the information industry and promote the construction of educational informatization.</li> <li>2. Take advantage of the export-oriented economy and strengthen international cooperation and resource introduction.</li> <li>3. Build a diversified capital investment model.</li> <li>4. Use government bond funds to upgrade school facilities.</li> <li>1. Increase provincial fiscal input and narrow regional disparities.</li> <li>2. Strengthen financial support and narrow the regional education gap.</li> <li>1. Expand investment in information construction.</li> <li>2. Formulate unified information construction standards for the entire province.</li> </ol>
Social Strategy	1. Strengthen the social support system	<ol style="list-style-type: none"> <li>1. Build a diversified education system.</li> <li>2. Mobilize social forces to support the development of vocational education.</li> <li>3. Promote an innovative and entrepreneurial atmosphere and support</li> </ol>

Table 4.15 (Continued)

Aspect	Main measures	Specific measures
		graduates in starting businesses.
		4. Exercise corporate social responsibility and support vocational education.
		5. Guide social forces to support the development of vocational education.
	2. Deepen school-enterprise cooperation	1. Strengthen the integration of production and education and cooperation between schools and enterprises.
		2. Deepen school-enterprise cooperation and enhance market adaptability.
		3. Promote local enterprises to participate in vocational education.
		4. Deepen school-enterprise cooperation and promote the integration of production and education.
		5. Establish a guidance mechanism for school-enterprise cooperation.
		6. Establish a professional setting adjustment mechanism with multi-party participation.
		7. Optimize professional settings and enhance market adaptability.
	3. Strengthen inter-school resource sharing and cooperation	1. Promote cooperation with colleges and universities in developed regions to improve technical level.
		2. Strengthen inter-school cooperation with developed regions.
		3. Strengthen inter-school cooperation and share high-quality educational resources.

Table 4.15 (Continued)

Aspect	Main measures	Specific measures
	4. Implement a social cognition enhancement project guided by policies	1. Actively participate in local social governance. 2. Strengthen skills training for social personnel. 3. Implement social awareness enhancement projects. 4. Advocate social forces to pay attention to educational equity. 5. Raise public awareness and promote educational equity.

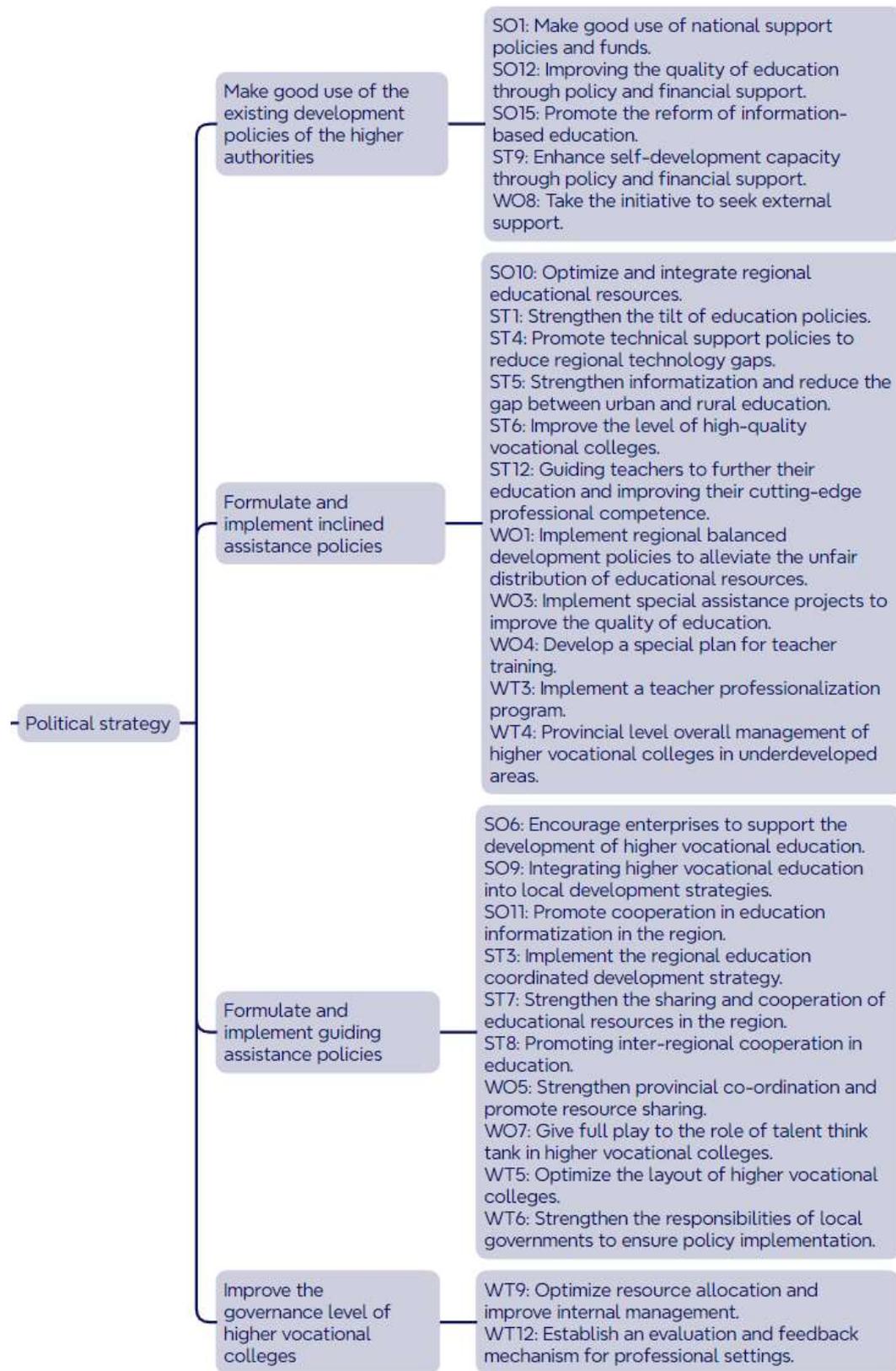


Figure 4.2 political strategy

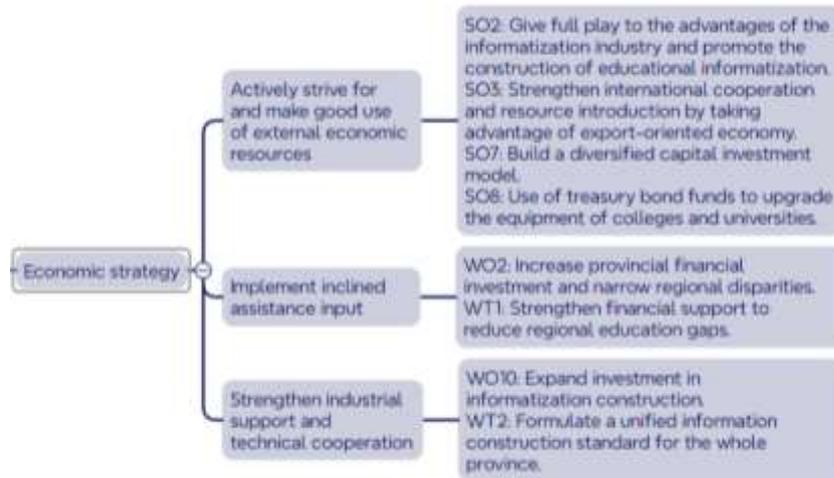


Figure 4.3 economic strategy

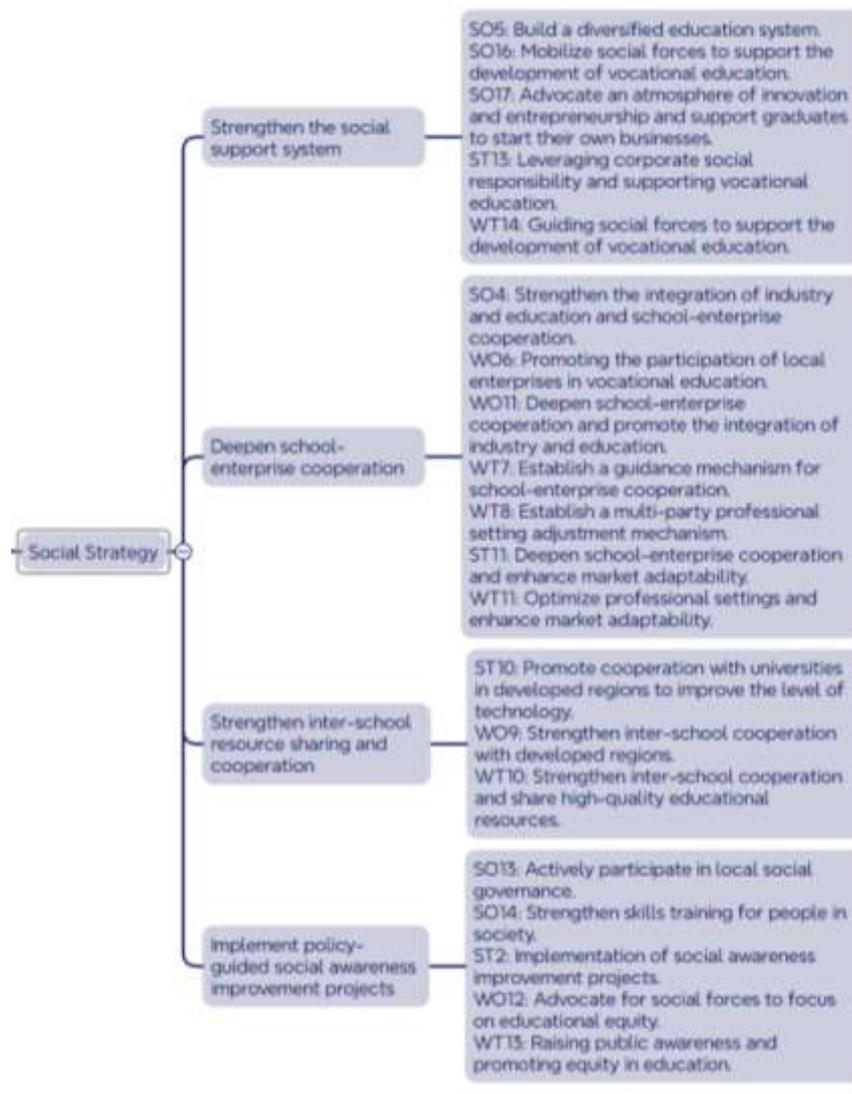


Figure 4.4 social strategy

Based on the TOWS analysis matrix, this section constructs a strategy system covering three major categories: politics, economy, and society, aiming to promote the equity and sustainable development of higher vocational education in Guangdong Province through multi-dimensional means such as policy support, resource optimization, and social support. The next section will systematically evaluate the strategies from the two dimensions of adaptability and feasibility based on expert scores to clarify the potential and limitations of the strategies in actual operations and put forward corresponding optimization suggestions.

### **Part 3: Analytical results in service of Research objective 3: To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

In this part, five experts (see Table 4.16) used the Likert five-point scale method to evaluate the adaptability and feasibility of the sustainable equity strategy of higher vocational education in Guangdong Province. The five options were strongly agreed, agree, neutral, disagree, and strongly disagree. The evaluation experts could only choose one option. The data were presented in the form of mean and standard deviation (see Table 4.17- Table 4.20).

**Table 4.16** List of evaluation experts

Serial number	Job title/position
Assessment Expert 1	Deputy Director of Development Planning Division, Guangdong Provincial Department of Education
Evaluation Expert 2	Deputy Director of Development Planning Office of Shenzhen Polytechnic, PhD, Professor
Evaluation Expert 3	Deputy Director of Student Affairs Office, Professor, Shanwei Vocational and Technical College
Evaluation Expert 4	Director of the Finance Department of Yangjiang Vocational and Technical College, Senior Economist

**Table 4.16** (Continued)

Serial number	Job title/position
Evaluation Expert 5	Director of Quality Management Department, Heyuan Vocational and Technical College, Professor

According to Table 4.17, the evaluation results of experts on political strategies show that the average adaptability of political strategies is between 4.20 and 4.80, and the average feasibility is between 4.00 and 4.60, both of which are high or highest. The average adaptability of economic strategies is between 4.20 and 4.80, and the average feasibility is between 3.60 and 4.80, both of which are high or highest. The average adaptability of social strategies is between 4.00 and 4.80, and the average feasibility is between 4.00 and 4.80, both of which are high or highest.

**Table 4.17** Adaptability and effectiveness of sustainable equity strategies for higher vocational education in Guangdong Province

Strategy	Main measures	Adaptability			feasibility		
		$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
Political Strategy	1. Make good use of the existing development policies of superiors	4.52	0.65	highest	4.48	0.68	high
	2. Formulate and implement preferential assistance policies	4.64	0.61	highest	4.47	0.63	High
	3. Formulate and implement guiding assistance policies	4.50	0.70	highest	4.36	0.62	high

Table 4.17 (Continued)

Strategy	Main measures	Adaptability			feasibility		
		$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
	4. Improve the governance level of higher vocational colleges	4.80	0.45	highest	4.60	0.55	highest
Economic Strategy	1. Improve the governance level of higher vocational colleges	4.55	0.63	highest	4.25	0.62	high
	2. Implement preferential support input	4.50	0.64	highest	4.30	0.63	high
	3. Strengthen industrial support and technical cooperation	4.50	0.72	highest	4.60	0.50	highest
Social Strategy	1. Strengthen the social support system	4.44	0.67	high	4.48	0.56	high
	2. Deepen school-enterprise cooperation	4.49	0.58	high	4.37	0.58	high
	3. Strengthen inter-school resource sharing and cooperation	4.47	0.64	high	4.40	0.64	high
	4. Implement a social cognition enhancement project guided by policies	4.52	0.76	highest	4.32	0.58	high

According to Table 4.18, the experts' evaluation results on political strategies show that the average adaptability of political strategies is between 4.20 and 4.80, and the average feasibility is between 4.00 and 4.60, both of which are high or highest, indicating that political strategies have high adaptability and feasibility.

**Table 4.18** Adaptability and effectiveness of political strategies

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
<b>1. Make good use of the existing development policies of superiors</b>						
1) Make good use of national support policies and funds.	4.60	0.55	highest	4.60	0.55	highest
2) Improve the quality of education through policy and financial support.	4.40	0.89	high	4.20	0.84	high
3) Promote information-based education reform.	4.80	0.45	highest	4.60	0.89	highest
4) Make use of policy and financial support to enhance self-development capabilities.	4.60	0.55	highest	4.60	0.55	highest
5) Actively seek external support.	4.20	0.84	high	4.40	0.55	high
<b>Total</b>	<b>4.52</b>	<b>0.65</b>	<b>highest</b>	<b>4.48</b>	<b>0.68</b>	<b>High</b>
<b>2. Formulate and implement preferential assistance policies</b>						
1) Optimize and integrate regional educational resources.	4.80	0.45	highest	4.20	0.84	high
2) Strengthen the tilt of education policies.	4.80	0.45	highest	4.40	0.55	high

Table 4.18 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
3) Promote technology support policies to narrow regional technology gaps.	4.60	0.89	highest	4.40	0.89	high
4) Strengthen information construction and reduce the urban-rural education gap.	4.80	0.45	highest	4.60	0.55	highest
5) Improve the quality of higher vocational colleges.	4.40	0.89	high	4.60	0.55	highest
6) Guide teachers to pursue further studies and improve their cutting-edge professional abilities.	4.80	0.45	highest	4.60	0.55	highest
7) Implement regional balanced development policies to alleviate unfair distribution of educational resources.	4.40	0.89	high	4.80	0.45	highest
8) Implement special assistance projects to improve the quality of education.	4.60	0.55	highest	4.40	0.55	High
9) Develop special plans for teacher training.	4.80	0.45	highest	4.40	0.55	high
10) Implement the teacher professional development plan.	4.20	0.84	high	4.40	0.89	high
11) Provincial-level overall management of higher vocational colleges in underdeveloped areas.	4.80	0.45	highest	4.40	0.55	high
<b>Total</b>	<b>4.64</b>	<b>0.61</b>	<b>highest</b>	<b>4.47</b>	<b>0.63</b>	<b>high</b>

Table 4.18 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
<b>3. Formulate and implement guiding assistance policies</b>						
1) Encourage enterprises to support the development of higher vocational education.	4.60	0.55	highest	4.60	0.55	highest
2) Integrate higher vocational education into local development strategies.	4.80	0.45	highest	4.40	0.55	High
3) Promote regional cooperation in educational informatization.	4.20	0.84	high	4.20	0.84	high
4) Implement the regional education coordinated development strategy.	4.40	0.89	high	4.40	0.55	high
5) Strengthen sharing and cooperation of educational resources within the region.	4.40	0.89	high	4.40	0.55	high
6) Promote regional educational cooperation.	4.60	0.55	highest	4.40	0.55	high
7) Strengthen provincial-level coordination and promote resource sharing.	4.20	1.10	high	4.20	0.84	high
8) Give full play to the role of higher vocational colleges as talent think tanks.	4.80	0.45	highest	4.40	0.55	high
9) Optimize the layout of higher vocational colleges.	4.20	0.84	high	4.60	0.55	highest

Table 4.18 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
10) Strengthen the responsibility of local governments to ensure the implementation of policies.	4.80	0.45	highest	4.00	0.71	high
<b>Total</b>	<b>4.50</b>	<b>0.70</b>	<b>highest</b>	<b>4.36</b>	<b>0.62</b>	<b>High</b>
<b>4. Improve the governance level of higher vocational colleges</b>						
1) Optimize resource allocation and improve internal management.	4.80	0.45	highest	4.60	0.55	highest
2) Establish an evaluation and feedback mechanism for professional settings.	4.80	0.45	highest	4.60	0.55	highest
<b>Total</b>	<b>4.80</b>	<b>0.45</b>	<b>highest</b>	<b>4.60</b>	<b>0.55</b>	<b>highest</b>

According to Table 4.19, the experts' evaluation results on economic strategies show that the average adaptability of economic strategies is between 4.20 and 4.80, and the average feasibility is between 3.60 and 4.80, both of which are high or highest, indicating that political strategies have high adaptability and feasibility.

Table 4.19 Adaptability and effectiveness of economic strategies

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
<b>1. Actively strive for and make good use of external economic resources</b>						
1) Give full play to the advantages of the information industry and promote the construction of educational informatization.	4.40	0.89	high	4.60	0.55	highest

Table 4.19 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
2) Take advantage of the export-oriented economy and strengthen international cooperation and resource introduction.	4.60	0.55	highest	3.60	0.55	high
3) Build a diversified capital investment model.	4.60	0.55	highest	4.60	0.55	highest
4) Use government bond funds to upgrade school facilities.	4.60	0.55	highest	4.20	0.84	high
<b>Total</b>	<b>4.55</b>	<b>0.63</b>	<b>highest</b>	<b>4.25</b>	<b>0.62</b>	<b>High</b>
<b>2. Implement preferential support input</b>						
1) Increase provincial fiscal input and narrow regional disparities.	4.20	0.84	high	4.60	0.55	highest
2) Strengthen financial support and narrow the regional education gap.	4.80	0.45	highest	4.00	0.71	high
<b>Total</b>	<b>4.50</b>	<b>0.64</b>	<b>highest</b>	<b>4.30</b>	<b>0.63</b>	<b>High</b>
<b>3. Strengthen industrial support and technical cooperation</b>						
1) Expand investment in information construction.	4.60	0.55	highest	4.80	0.45	highest
2) Formulate unified information construction standards for the entire province.	4.40	0.89	high	4.40	0.55	High
<b>Total</b>	<b>4.50</b>	<b>0.72</b>	<b>highest</b>	<b>4.60</b>	<b>0.50</b>	<b>highest</b>

According to Table 4.20, the evaluation results of experts on social strategies show that the average adaptability of social strategies is between 4.00 and 4.80, and the average feasibility is between 4.00 and 4.80, both of which are high or highest, indicating that political strategies have high adaptability and feasibility.

**Table 4.20** Adaptability and effectiveness of social strategies

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
<b>1. Strengthen the social support system</b>						
1) Build a diversified education system.	4.80	0.45	highest	4.80	0.45	highest
2) Mobilize social forces to support the development of vocational education.	4.60	0.55	highest	4.00	0.71	high
3) Promote an innovative and entrepreneurial atmosphere and support graduates in starting their own businesses.	4.20	1.10	high	4.60	0.55	highest
4) Exercise corporate social responsibility and support vocational education.	4.60	0.55	highest	4.60	0.55	highest
5) Guide social forces to support the development of vocational education.	4.00	0.71	high	4.40	0.55	high
<b>Total</b>	<b>4.44</b>	<b>0.67</b>	<b>high</b>	<b>4.48</b>	<b>0.56</b>	<b>High</b>

Table 4.20 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
<b>2. Deepen school-enterprise cooperation</b>						
1) Strengthen the integration of production and education and cooperation between schools and enterprises.	4.80	0.45	highest	4.40	0.55	high
2) Deepen school-enterprise cooperation and enhance market adaptability.	4.00	0.71	high	4.40	0.55	High
3) Promote local enterprises to participate in vocational education.	4.40	0.55	high	4.40	0.55	high
4) Deepen cooperation between schools and enterprises and promote the integration of production and education.	4.60	0.55	highest	4.20	0.45	high
5) Establish a guidance mechanism for school-enterprise cooperation.	4.20	0.84	high	4.40	0.89	high
6) Establish a professional setting adjustment mechanism with multi-party participation.	4.60	0.55	highest	4.40	0.55	high
7) Optimize professional settings and enhance market adaptability.	4.80	0.45	highest	4.40	0.55	high
<b>Total</b>	<b>4.49</b>	<b>0.58</b>	<b>high</b>	<b>4.37</b>	<b>0.58</b>	<b>High</b>
<b>3. Strengthen inter-school resource sharing and cooperation</b>						
1) Promote cooperation with colleges and universities in developed regions to improve technical level.	4.20	0.84	high	4.60	0.55	highest

Table 4.20 (Continued)

Strategy	Adaptability			feasibility		
	$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
2) Strengthen inter-school cooperation with developed regions.	4.60	0.55	highest	4.20	0.84	high
3) Strengthen inter-school cooperation and share high-quality educational resources.	4.60	0.55	highest	4.40	0.55	high
<b>Total</b>	<b>4.47</b>	<b>0.64</b>	<b>high</b>	<b>4.40</b>	<b>0.64</b>	<b>High</b>
<b>4. Implement a social cognition enhancement project guided by policies</b>						
1) Actively participate in local social governance.	4.60	0.55	highest	4.20	0.45	high
2) Strengthen skills training for social personnel.	4.60	0.55	highest	4.40	0.55	high
3) Implement social awareness enhancement projects.	4.40	0.89	high	4.40	0.55	high
4) Advocate social forces to pay attention to educational equity.	4.60	0.89	highest	4.40	0.89	high
5) Raise public awareness and promote educational equity.	4.40	0.89	high	4.20	0.45	high
<b>Total</b>	<b>4.52</b>	<b>0.76</b>	<b>highest</b>	<b>4.32</b>	<b>0.58</b>	<b>high</b>

In summary, the results of experts' evaluation of the strategies show that the average adaptability of the strategies is between 4.00 and 4.80, and the average feasibility is between 3.60 and 4.80, both of which are high or highest levels, indicating that the strategies in this study have high adaptability and feasibility.

## Chapter 5

### Discussion Conclusion and Recommendations

The research objectives of this study include three aspects: 1. To study the current status of equity in higher vocational education in Guangdong Province. 2. To formulate strategies to promote sustainable equity in higher vocational education in Guangdong Province. 3. To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.

The research and analysis results obtained in Chapter 4 have met all the research objectives of this study. Therefore, it can be concluded and discussed as follows. Furthermore, some approaches are recommended based on the findings.

#### Conclusion

The study on sustainable equity in higher vocational education in Guangdong Province was conducted according to the following procedures:

**Part I:** The analysis results of research **Objective 1**. To study and analyze the current equity status in higher vocational education in Guangdong Province.

**Part II:** Analytical results of Research **Objective 2**. To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.

**Part III:** Analytical results of Research **Objective 3**. To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.

The research conclusions are as follows:

**Part I: The analysis results of research Objective 1. To study and analyze the current equity status in higher vocational education in Guangdong Province.**

1. Regional distribution and economic status of the interviewed students

Most students in higher vocational colleges come from rural areas (accounting for 66.5%), and their family economic conditions are mostly low-middle income (accounting for 75.5%) or poverty level (accounting for 23.5%).

2. The overall perception of educational equity among the students interviewed

The survey shows that students moderately perceive equity in their school education ( $\bar{x}=2.92$ ). Students recognize equal access to education, essential scholarships, and resource allocation but are dissatisfied with advanced learning conditions, internship opportunities, and financial burdens. The perception of equity in higher vocational education nationwide ( $\bar{x}=2.64$ ) and overall educational equity ( $\bar{x}=2.81$ ) and Personal future expectations ( $\bar{x}=2.82$ ) is also moderate. In contrast, the perception of Guangdong Province is low ( $\bar{x}=2.42$ ), mainly due to the significant gap between the east, west, and north of Guangdong and the Pearl River Delta region.

The respondents' perception of the current status of educational equity in their schools are as follows: I have equal access to education ( $\bar{x}=3.37$ ), the school provides necessary scholarships and grants to help students with difficulties complete their studies ( $\bar{x}=3.27$ ), my classmates of different nationalities, genders, and socioeconomic backgrounds can all have equal access to educational resources at school ( $\bar{x}=3.13$ ), the school's academic and teaching conditions (teachers, internship and training equipment, books and materials, etc.) can help me carry out theoretical and practical learning well ( $\bar{x}=3.02$ ), the school provides us with high-quality internship and practice opportunities ( $\bar{x}=2.75$ ), the cost of higher vocational education does not constitute a financial burden on me ( $\bar{x}=2.66$ ), the school provides us with advanced training and teaching conditions such as artificial

intelligence and virtual simulation ( $\bar{x}$ =2.65), and the school provides us with a variety of overseas university study and training programs to choose from ( $\bar{x}$ =2.49)

Respondents' perceptions of the current equity of higher vocational education in Guangdong are as follows, from high to low: the Guangdong Provincial Government should formulate more policies to support the development of higher vocational education ( $\bar{x}$ =3.22), I am satisfied with the current development of higher vocational education in Guangdong Province ( $\bar{x}$ =2.51), there is no significant development gap between higher vocational colleges in the east, west and north of Guangdong and those in the Pearl River Delta ( $\bar{x}$ =2.23), there is no inequity in the allocation of higher vocational education resources by the Guangdong Provincial Government ( $\bar{x}$ =2.08), and the local governments of Guangdong Province attach great importance to the development of higher vocational education ( $\bar{x}$ =2.06).

The average values of the respondent's perceptions of the current equity of higher vocational education in China are as follows, from high to low: the concept proposed by national laws and policies that "vocational education and general education are two different types of education with equal importance" has enhanced my sense of identity with higher vocational education ( $\bar{x}$ =2.85), the country attaches importance to the development of higher vocational education ( $\bar{x}$ =2.78), my relatives and friends generally have a positive attitude towards higher vocational education ( $\bar{x}$ =2.66), I believe that the status of higher vocational colleges is equal to that of undergraduate colleges ( $\bar{x}$ =2.59), and there is no prejudice or discrimination against higher vocational education in society ( $\bar{x}$ =2.33).

The average values of the respondents' overall perception of the current status of education equity in China are as follows, from high to low: education equity is significant for the harmonious development of society ( $\bar{x}$ =3.64), differences in local economic growth are the leading cause of education inequality ( $\bar{x}$ =3.16), there is no large education gap between urban and rural areas and between regions ( $\bar{x}$ =2.49), there is no education inequality problem in the country at present ( $\bar{x}$ =2.44), and the issue of education equity does not affect me ( $\bar{x}$ =2.32).

The average values of respondents' expectations for their future are as follows from high to low: receiving vocational education will be beneficial to future promotion and salary increase ( $\bar{x}=2.90$ ), I can get equal employment opportunities with those with general education ( $\bar{x}=2.86$ ), I will not be discriminated against at work because of my academic level ( $\bar{x}=2.84$ ), I have the opportunity to study at an undergraduate level ( $\bar{x}=2.78$ ), and I can get the same economic income as those with general education ( $\bar{x}=2.75$ ).

### 3. Factors affecting equity in higher vocational education in Guangdong Province

Quantitative data revealed four key influencing factors: (1) regional economic differences, (2) uneven distribution of resources, (3) insufficient depth and quality of industry-education integration, and (4) low social recognition of vocational education.

Qualitative interviews and focus group discussions further confirmed these factors, emphasizing (1) policy design and implementation differences. Regional differences exist in the intensity and effectiveness of policy design and implementation; (2) Uneven distribution of educational resources. There is a significant imbalance in educational resources between different regions, especially in the eastern, western, and northern Guangdong regions, which are significantly weaker than the Pearl River Delta region in terms of financial support, infrastructure, and teaching staff; (3) Low social recognition of vocational education, especially in terms of student development outcomes and employment competitiveness.

Through comprehensive quantitative and qualitative analysis, the factors affecting the sustainable equity of higher vocational education in Guangdong Province can be attributed to three levels: political factors (such as regional differences in policy design and implementation), economic factors (such as regional economic differences and uneven distribution of educational resources), and social factors (such as social recognition of vocational education and the lack of depth and quality of industry-education integration). These factors work together to form a complex system affecting higher vocational education's sustainable equity.

**Part II: Analytical results of Research Objective 2. To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

Based on the SWOT analysis results, this study developed a comprehensive strategy covering the three levels of politics, economy, and society through the TOWS matrix, including 11 main strategies and 56 specific measures. The policy-level strategy includes four main measures and 28 particular strategies; the economic-level measures include three main and eight specific measures; and the social-level strategy includes four main measures and 20 specific measures.

Political strategies include the following principal strategies: (1) Make good use of existing development policies of superiors; (2) Formulate and implement preferential assistance policies; (3) Formulate and implement guiding assistance policies; (4) Improve the governance level of higher vocational colleges.

Economic strategies include the following principal strategies: (1) Actively strive for and make good use of external economic resources; (2) Implement preferential assistance and investment; (3) Strengthen industrial support and technological cooperation.

Social strategies include the following principal strategies: (1) Strengthening the social support system; (2) Deepening school-enterprise cooperation; (3) Strengthening inter-school resource sharing and cooperation; (4) Implementing social cognition enhancement projects under policy guidance.

These strategies are guided by the actual development needs of higher vocational education in Guangdong Province and aim to promote sustainable and equitable development from three perspectives: political factors, economic factors, and Social factors.

**Part III: Analytical results of Research Objective 3. To evaluate the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

Through expert evaluation, the study verified the adaptability and feasibility of the strategy to promote sustainable equity in higher vocational education in

Guangdong Province. The average value of the adaptability evaluation was between 4.00 and 4.80, indicating that the strategy can effectively deal with the current problems faced by the development of higher vocational education; the average value of the feasibility evaluation was between 3.60 and 4.80, indicating that the strategy proposed in the study is realistic and feasible. The detailed results are as follows:

The average adaptability of political strategies is between 4.20 and 4.80, the highest level; the average feasibility is between 4.00 and 4.60, which is high.

The average adaptability of economic strategies is between 4.20 and 4.80, the highest level; the average feasibility is between 3.60 and 4.80, which is high.

The average adaptability of social strategies is between 4.00 and 4.80, which is high; the average feasibility is between 4.00 and 4.80, which is high.

In summary, the sustainable equity strategy for higher vocational education in Guangdong Province developed in this study is highly adaptable and feasible and can provide a valuable reference for solving the equity problem of higher vocational education in Guangdong Province.

**Table 5.1** Adaptability and effectiveness of sustainable equity strategies for higher vocational education in Guangdong Province

Strategy	Main measures	Adaptability			feasibility		
		$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
Political Strategy	1. Make good use of the existing development policies of superiors	4.52	0.65	highest	4.48	0.68	high
	2. Formulate and implement preferential assistance policies	4.64	0.61	highest	4.47	0.63	high
	3. Formulate and implement guiding	4.50	0.70	highest	4.36	0.62	High

Table 5.1 (Continued)

Strategy	Main measures	Adaptability			feasibility		
		$\bar{x}$	S.D.	Level	$\bar{x}$	S.D.	Level
	assistance policies						
	4. Improve the governance level of higher vocational colleges	4.80	0.45	highest	4.60	0.55	highest
Economic Strategy	1. Improve the governance level of higher vocational colleges	4.55	0.63	highest	4.25	0.62	high
	2. Implement preferential support input	4.50	0.64	highest	4.30	0.63	high
	3. Strengthen industrial support and technical cooperation	4.50	0.72	highest	4.60	0.50	highest
Social Strategy	1. Strengthen the social support system	4.44	0.67	high	4.48	0.56	High
	2. Deepen school-enterprise cooperation	4.49	0.58	high	4.37	0.58	high
	3. Strengthen inter-school resource sharing and cooperation	4.47	0.64	high	4.40	0.64	high
	4. Implement a social cognition enhancement project guided by policies	4.52	0.76	highest	4.32	0.58	high

## Discussion

This study focuses on the current status of equity in higher vocational education in Guangdong Province, the formulation of strategies to promote sustainable equity, and their adaptability and feasibility evaluation. It obtains findings with theoretical and practical significance. This section will discuss the following three parts.

**Part I: The analysis results of research Objective 1. To study and analyze the current status of equity in higher vocational education in Guangdong Province.**

Based on the research results, the current equity status in higher vocational education in Guangdong Province is discussed as follows.

### 1. Regional distribution and economic status of the interviewed students

Most students in higher vocational colleges come from rural areas (accounting for 66.5%), and their family economic conditions are primarily low- to middle-income (accounting for 75.5%) or poverty levels (accounting for 23.5%). These data reflect the key role of higher vocational colleges in providing affordable education, promoting social mobility, and promoting educational equity. Higher vocational colleges not only offer students from ordinary and low-income families the opportunity to realize their dreams, but also reduce the financial burden on families and create more social opportunities for students. The results of this study are consistent with the research conclusions of Ye Yuting & Fan Weichen. About 70% of higher vocational students are first-generation college students from rural areas, highlighting the significant role of higher vocational education in promoting social class mobility and achieving educational equity, especially providing opportunities for students from low-income groups to rise.

### 2. Respondents' perception of educational equity

The survey shows that the students' perception of equity in their school education is moderate ( $\bar{x}=2.92$ ). Students generally recognize equal access to education, essential scholarships, and resource allocation but are dissatisfied with advanced

learning conditions, internship opportunities, and financial burdens. The perception of equity in higher vocational education nationwide ( $\bar{x}=2.64$ ) and overall educational equity ( $\bar{x}=2.81$ ) is also moderate. In contrast, the perception of Guangdong Province is low ( $\bar{x}=2.42$ ), mainly due to the significant gap between the east, west, and north of Guangdong and the Pearl River Delta region. Respondents generally believe that there is a substantial gap in the development of higher vocational colleges in the east, west, and north of Guangdong, that educational resources are unevenly allocated, and that some local governments do not pay enough attention to higher vocational education. This finding is consistent with what Xu Xiaoqin (2020) said: "There are problems such as regional resource imbalance and unequal educational opportunities in higher vocational education in Guangdong Province."

### 3. Factors affecting equity in higher vocational education in Guangdong Province

Through comprehensive quantitative and qualitative analysis, the study found that the key factors affecting the sustainable equity of higher vocational education in Guangdong Province include political, economic, and social factors.

**Political factors:** Government policies play a vital role in the equity of higher vocational education. This is consistent with the view of Hou Cao (2020), who believes that the government, as the leading provider and distributor of public resources and services, plays a vital role in the issue of educational equity. In addition, Ruan Liquan & Hu Yuntong (2009) believe that education policies and systems are the main ways for governments to regulate higher education resources.

**Economic factors:** The level of economic development is closely related to educational equity. This finding is consistent with the view of Fernandez & Rogerson (1997), who believe that the development of educational investment is synergistic with economic growth. In addition, Luo Qin (2004) also believes that educational opportunities and investment levels in economically developed regions are often higher than those in economically underdeveloped areas.

Social factors: Social factors also significantly impact the equity of higher vocational education. This finding is consistent with the views of Hu Fang and Liu Hongfeng (2022), who believe that external factors such as society and population significantly impact the efficiency of higher education financial expenditures, thereby affecting educational equity.

**Part II: Analytical results of Research Objective 2. To develop strategies to promote sustainable equity in higher vocational education in Guangdong Province.**

Based on the research results, strategies to promote sustainable equity in higher vocational education in Guangdong Province are discussed as follows.

1. Political strategy

The policy-level strategy includes the following four main strategies: 1) Make good use of the existing development policies of the superior; 2) Formulate and implement preferential assistance policies; 3) Formulate and implement guiding assistance policies; 4) Improve the governance level of higher vocational colleges.

The policy-level strategy provides theoretical and practical support for the equity of higher vocational education, and has a guiding and normative role.

The use of existing development policies can quickly integrate existing resources and achieve policy effects in the short term. The state and Guangdong Province have successively issued a series of policies to support the development of higher vocational education (State Council, 2022; Ministry of Education, 2000, 2011). By using existing policies, the resource allocation of higher vocational colleges can be optimized, especially in supporting weak areas and schools.

In actual implementation, there may be problems such as unclear policy implementation effects and poor implementation by local governments. In order to overcome these challenges, the implementation of preferential assistance policies is particularly critical. This measure is consistent with the views of Lv Yuman & Xu Guoqing (2022). This policy can effectively narrow the gap in educational resources between regions, especially by tilting more financial support to the east, west and north of Guangdong. Local governments should formulate more targeted assistance

policies based on local conditions to improve the execution and effectiveness of policies.

The implementation of guiding assistance policies is helpful to stimulate the independent development capabilities of local governments and colleges and universities. The policy guidance of local governments can not only help higher vocational colleges improve their school-running level, but also encourage them to adjust their school-running direction according to market demand and social demand, and enhance their sustainable development capabilities. This measure is consistent with the views of Zou Qianqian & Yu Xiulan (2019). The guiding role of policies can enhance the independent innovation capabilities of higher vocational colleges in the longer term, thereby promoting educational equity.

## 2. Economic strategies

The economic level strategies include the following three main strategies: 1) Actively strive for and make good use of external economic resources; 2) Implement preferential assistance inputs; 3) Strengthen industrial support and technical cooperation.

The economic level strategies directly affect the financial support and resource allocation of higher vocational education. Especially for higher vocational colleges in underdeveloped areas, funding shortages are the main bottleneck restricting their development.

Striving for external economic resources is an important means to alleviate financial pressure in the short term. This measure is consistent with the views of Wan Weiping et al. (2021). Government grants and social donations can fill the financial gap of higher vocational colleges, especially for colleges in economically weak areas, which can alleviate the problem of insufficient school conditions. At the same time, the government should strengthen cooperation with enterprises and social organizations to strive for more social donations and external financial support.

Implementing preferential assistance and increasing financial support for weak areas can effectively improve the infrastructure construction and allocation of educational resources of higher vocational colleges in these areas. The inclination of

financial support should be based on the level of regional economic development, demand for educational resources and social development needs, giving priority to ensuring the development of education in economically backward areas (Wan Weiping et al., 2021; Yang Xiaoli & Chen Hao, 2020).

Economic strategies also face challenges, especially when local fiscal pressures are high. The cooperation model between the government and enterprises needs to be more innovative and flexible. Strengthening industrial support and technological cooperation will be a long-term and continuous process, especially in the east, west and north of Guangdong. It is necessary to increase the cooperation between enterprises and higher vocational colleges and jointly promote the deep integration of education and industry. This measure is consistent with the views of Wan Weiping et al. (2021).

### 3. Social strategies

The social level strategies include the following four main strategies: 1) Strengthen the social support system; 2) Deepen school-enterprise cooperation; 3) Strengthen inter-school resource sharing and cooperation; 4) Implement social cognition improvement projects under policy guidance.

The social level strategies aim to enhance the social cognition and social support of higher vocational education. The quality of education and educational resources of higher vocational colleges depend not only on government investment, but also on social cognition and corporate support.

Strengthening the social support system plays an important role in improving the level of higher vocational colleges. Ruan Liquan & Hu Yuntong (2009) proposed that social support is not only financial assistance, but also includes social recognition of higher vocational colleges and attention to higher vocational education. By building a more complete social support system, a wider range of resource guarantees can be provided for higher vocational colleges.

Deepening school-enterprise cooperation is an important way to improve students' practical ability and employment ability. Tuo Fei (2020) pointed out that school-enterprise cooperation can not only provide more internship opportunities,

but also effectively enhance the social recognition and employment quality of higher vocational education. Through in-depth cooperation with enterprises, schools can better connect with market demand and cultivate highly skilled talents that adapt to social development.

Strengthening inter-school resource sharing and cooperation will help alleviate the problem of resource imbalance and improve the overall quality of education. Tuo Fei (2020) believes that resource sharing and cooperation can make up for the gap between regions and colleges, especially in economically underdeveloped areas such as the east, west and north of Guangdong. Resource sharing can effectively improve the quality of local education and reduce educational inequality.

Implementing the social cognition improvement project is an effective means to change the public's prejudice against higher vocational education. Feng Jianjun & Gao Zhan (2022) pointed out that the joint publicity of the government and the media can effectively improve the public's awareness of higher vocational education, promote more outstanding students to choose vocational education, and thus enhance the social status of higher vocational education.

**Part III: Analytical results of Research Objective 3. To evaluate the adaptability and feasibility of strategy for sustainable equity in higher vocational education in Guangdong Province.**

In response to the research results, the adaptability and feasibility of strategies to promote sustainable equity in higher vocational education in Guangdong Province are discussed as follows.

To evaluate the adaptability and feasibility of the developed strategy, the study invited five leaders from the education department of Guangdong Province and experts from higher vocational colleges in the Pearl River Delta, eastern Guangdong, western Guangdong, and northern Guangdong. The experts are all deputy departmental personnel or above, with the title of associate professor or above, with rich experience in education management, and are familiar with the policy documents of the national, provincial, and municipal governments on higher

vocational education, the economic development status of various regions in Guangdong Province, and the basic situation of regional college development.

The evaluation was conducted using a five-point scale, and the experts scored the adaptability and feasibility of the strategies. The results showed that the average adaptability of the strategy ranged from 4.00 to 4.80, and the average feasibility ranged from 3.60 to 4.80, both at the high or highest level, indicating that the strategy developed has high adaptability and feasibility, and can effectively promote sustainable equity in higher vocational education in Guangdong Province.

## Recommendations

### Implications

Based on the main findings of this study, this section explores how to transform the research effectively results into specific implementation plans in practice, puts forward targeted inspirations, and provides valuable guidance for the government, schools, enterprises, and all sectors of society to promote sustainable equity in higher vocational education in Guangdong Province. The following are the main inspirations of the research results for all parties to implement:

1. Inspiration from the government level: Promoting cross-departmental coordination and policy innovation

The findings of this study show that one of the main problems facing higher vocational education in Guangdong Province is the uneven regional development, especially the significant gap between the eastern, western, and northern parts of Guangdong and the Pearl River Delta region. Therefore, in promoting equity in higher vocational education, the government needs to strengthen the innovation of policies and implementation mechanisms in the following aspects in addition to continuing to increase financial investment:

(1) Establish a cross-departmental coordination mechanism. The equity of higher vocational education relies on the promotion of the education department and requires the coordinated cooperation of multiple departments such as finance, labor, and science and technology. The government should establish a cross-

departmental education resource allocation and policy coordination platform to ensure the synergy of different regional policies. For example, by regularly holding provincial education coordination meetings, a policy consensus can be formed to provide the equity distribution of education resources among regions, avoiding the fragmentation of policy implementation by various departments and the imbalance of local government implementation.

(2) Establish a dynamic adjustment mechanism for education policies. The implementation of educational equity needs to be dynamically adjusted according to the progress of regional economic and social development and education reform. The government can promptly establish an education policy feedback mechanism to adjust measures regarding financial support, policy orientation, etc., through regular effect evaluation and data feedback. For example, financial investment in information construction or teacher training can be adjusted according to the implementation effect to ensure the maximum utilization of resources.

(3) Innovate social support policies. The government should play a positive guiding role and encourage social forces, enterprises, and non-governmental organizations (NGOs) to actively participate in funding, teacher training, and infrastructure construction for higher vocational education. By setting up incentive policies to encourage social donations and corporate investment in education, the support network for higher vocational education can be further expanded to provide more external support for schools in remote areas.

2. Inspiration from higher vocational colleges: Improving education quality and teaching innovation capabilities

Vocational colleges play a core role in achieving educational equity. The research results show that teacher development and teaching quality improvement are key factors that directly affect students' perception of the equity of higher vocational education. Therefore, higher vocational colleges can start from the following aspects to promote the improvement of education quality and the optimal allocation of educational resources:

(1) Optimize the structure and training model of the teaching staff. Vocational colleges should increase investment in teacher training, especially in information-based teaching and cutting-edge industry technologies. A dynamic mechanism for improving teacher capabilities should be established to help teachers keep pace with industry development through regular training, external learning exchanges, etc. At the same time, the attractiveness of teachers' professions should be improved, and high-quality educational talents should be retained through salary incentives, promotion mechanisms, etc., especially in colleges and universities in underdeveloped areas.

(2) Strengthen the teaching quality assurance system. Vocational colleges can establish a teaching quality assurance system oriented to student needs and continuously improve the teaching evaluation mechanism. For example, regularly evaluate the adaptability of courses and teaching content through student feedback, industry demand analysis, etc., to ensure that the course content is closely connected with market demand. At the same time, schools should strengthen on-campus management to ensure the efficient use and transparency of educational resources.

(3) Deepen the integration of industry and education and school-enterprise cooperation. Vocational colleges can deepen school-enterprise collaboration and promote innovation in integrating industry and education models. By cooperating with industry enterprises, establishing training bases, joint R&D laboratories, and other platforms, students' practical ability and employment competitiveness can be improved. Schools can guide enterprises to participate in curriculum design to ensure that the skills cultivated are highly consistent with industry needs.

3. Enlightenment at the enterprise level: leveraging the potential of corporate social responsibility and school-enterprise cooperation

The role of enterprises in higher vocational education is to provide employment opportunities and contribute to the equity development of higher vocational education by increasing investment and participating in education reform.

The research results show that the depth and breadth of school-enterprise cooperation play a key role in improving students' employability. Specifically, enterprises can actively participate in the following aspects:

(1) Enhance enterprises' social responsibility for vocational education. Enterprises should take the initiative to assume social responsibility and participate in the reform and development of vocational education by providing financial support, setting up scholarships, and funding school-enterprise cooperation projects. In addition, enterprises should realize that cultivating high-quality technical and skilled talents can contribute to social development and accumulate strength for the future development of enterprises.

(2) Provide more practice opportunities and jobs. Enterprises should actively provide practice opportunities for students of higher vocational colleges by setting up internship positions and cooperating in industry research to improve students' practical operation and employment abilities. Especially in the rapidly developing technology industry, enterprises should promptly provide feedback on talent needs to higher vocational colleges according to industry changes and help schools adjust their curriculum settings.

(3) Promote industry standardization and vocational education standardization. Enterprises should participate in formulating vocational education standards, especially occupational standards and operating procedures in the technical industry, to promote the standardization of the entire vocational education system. Enterprises can work with education departments to carry out vocational skills certification, qualification examinations, and other activities to enhance higher vocational education's social recognition and employment orientation.

4. Social implications: Improving the social recognition and value of vocational education

The society's cognitive bias towards vocational education is one of the important factors affecting educational equity. Research shows that society's low recognition of vocational education directly affects students' learning motivation and

the society's attention to educational equity. To this end, all sectors of society should take the following measures:

(1) Strengthen public publicity of vocational education. Society should actively publicize the importance and social value of vocational education through media, public platforms, cultural activities, etc., especially in improving its contribution to economic and social development and the recognition of the employability of vocational education graduates. Through public publicity, society's traditional prejudice against vocational education can be changed, and the public's trust in vocational education can be enhanced.

(2) Promote social support for vocational education. Non-governmental organizations, charities, community groups, etc., should increase their support for vocational education, especially in underdeveloped areas, by providing funding, equipment, teacher training, etc. All sectors of society should work together to promote the equitable distribution of educational resources and promote social harmony and development.

(3) Improve the social recognition of vocational education graduates. The government and all sectors of society should improve the social recognition of vocational education graduates through policy support and public opinion guidance. In particular, a more efficient employment service system should be established to provide graduates with a wider range of employment opportunities and ensure they can obtain sufficient recognition and development space in their careers.

In summary, the sustainable and equitable development of higher vocational education in Guangdong Province requires the joint efforts of the government, schools, enterprises, and all sectors of society. The government should optimize resource allocation and policy implementation, schools should strengthen teacher development and teaching innovation, enterprises should assume social responsibility and deepen school-enterprise cooperation, and society should promote educational equity by enhancing the social recognition of vocational education. Through the synergy of multiple parties, the equity of higher vocational

education in Guangdong Province will be sustainably promoted, and more high-quality technical and skilled talents will be cultivated for the society.

### **Future Researches**

Has achieved certain theoretical and practical results regarding the current status, promotion strategies, adaptability, and feasibility evaluation of equity in higher vocational education in Guangdong Province. However, the issue of equity in vocational education is complex and dynamic, especially regarding regional differences, resource allocation, and social cognition. This section proposes future research suggestions to deepen the research in related fields further.

1. Expand the scope of research: national and international comparative studies

The current study focuses on Guangdong Province. Although it reveals the problems of unbalanced regional development and uneven distribution of educational resources, its geographical limitations make it difficult to fully reflect the overall pattern of equity in China's higher vocational education and its position in the international context. Future research should focus on the following two aspects:

#### (1) Regional comparative study across the country

Higher vocational education is particularly significant in China. Different provinces present diverse equity issues due to differences in economic development levels, policy support, and educational resource endowments. Future research can explore the following through nationwide empirical research:

Commonalities and differences in equity issues in higher vocational education among provinces: Analyze the similarities and differences in equity issues in vocational education between the eastern coastal areas and the central and western inland areas and explore the key factors affecting educational equity based on regional development characteristics.

The basis for differentiated policy formulation: By identifying regional educational equity issues, a scientific basis is provided for the national level to

formulate differentiated support policies for different regions, ensuring the adaptability and accuracy of equity policies for higher vocational education.

(2) Research on equity in vocational education from an international perspective

Higher vocational education is not an issue unique to China. Future research on a global scale could attempt to:

Compare the equity models and results of vocational education in different countries. Compare the equity practices of vocational education in developed countries (such as Germany's dual system) and other developing countries and analyze the paths to promote equity under different institutional and cultural backgrounds.

Assess the international applicability of China's experience: Make a horizontal comparison between China's vocational education equity policy and international cases, summarize its uniqueness and universality, and contribute China's solutions to the equitable development of global vocational education.

2. Strengthen dynamic analysis: long-term tracking research on policy effects

This study conducted a static analysis of the equity issues in higher vocational education in Guangdong Province based on cross-sectional data. However, realizing equity in higher vocational education is a long-term process dynamically affected by multidimensional policy interventions and complex social changes. Future research should use longitudinal designs to reveal the time dimension of policy effects and the far-reaching impact of changes in the external environment:

(1) Analysis of the time dimension of policy implementation effects

Higher vocational education is not visible in the short term but requires a long accumulation period to produce significant changes. Future research may try:

Establish a policy tracking mechanism: systematically collect key data during policy implementation, such as fiscal investment, resource allocation, and student employment data, and analyze the incremental impact of policies on the equity of higher vocational education.

Evaluate the interim effectiveness of policies: Review the effectiveness at specific time points in stages, reveal opportunities for policy adjustments and optimizations, and provide data support for the continuous improvement of equity policies for higher vocational education.

(2) The impact of changes in the external environment on policy effectiveness

Higher vocational education is directly affected by policies and constrained by changes in the external environment, such as the economy, technology, and social cognition. Future research may try:

Analyze the chain reaction of economic fluctuations: Explore how regional economic growth or recession affects financial support for higher vocational education and student employment opportunities and reveal the multiple effects of economic factors on educational equity.

Study the synergy between technological development and social cognition: examine the application potential of emerging technologies (such as artificial intelligence and big data) in the equity of higher vocational education and how the transformation of society's cognition of higher vocational education affects the realization of educational equity goals.

### 3. higher vocational education from an interdisciplinary perspective

Higher vocational education involves multiple fields, such as education, economics, sociology, and policy research. Its complexity requires that research break through a single discipline's perspective and adopt an interdisciplinary and comprehensive approach. Future research can try the following directions:

(1) The intersection of pedagogy and technology research

Technological progress has provided new tools and means for equity in higher vocational education. Future research can combine educational theory with technological application to explore data-driven educational equity models:

Build an education equity assessment model: Use artificial intelligence and big data technologies to establish a dynamic education equity monitoring and

evaluation system to achieve real-time monitoring of education equity gaps between regions and schools.

Develop intelligent teaching solutions: Research how technology can optimize teaching processes in higher vocational education in underdeveloped areas, such as improving the efficiency of sharing educational resources through distance education platforms.

#### (2) Integration of Economics and Sociology

in higher vocational education is an educational issue and a key component of economic and social development. Future research can:

Explore the causal relationship between economic development and educational equity: analyze the impact of economic growth on higher vocational education investment and student development outcomes, and reveal the role of educational equity in the sustainable development of the regional economy.

Study the interaction between social structure and equity pattern: From a sociological perspective, explore how higher vocational education can alleviate social inequality, enhance social mobility, and provide a theoretical basis for the long-term goal of equity in vocational education.

In higher vocational education in a broader time and space scope, more complex theoretical framework and deeper practical level. The above research directions provide more researchers with multi-dimensional and multi-level research suggestions, which promote the deepening of equity theory and innovation of practical paths in higher vocational education and provide a solid scientific basis for vocational education reform and social equity development.

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## Appendices

## Appendix A

### List of Specialists and Letters of Specialists Invitation for IOC Verification

### List of Specialists Invitation for IOC Verification

NO.	Name	Position
1.	Pattawan Narjaikaw	Associate Professor, Dr., Lecturer, Faculty of Education, Udon Thani Rajabhat University
2.	Pairach Piboonrunroj	Asst. Prof, Dr., Assistant to the President, ChiangMai University
3.	Sirikorn Tosati	Asst.prof, Ph.D., Educational Evaluation and Research Program, Faculty of Education, Bansomdejchaopraya Rajabhat University
4.	Khagendra Raj Dhakal	Dr., Specialist Lecturer King Mongkut's University of Technology North Bangkok
5.	Trai unyapoti	Dr., Department of Curriculum and Instruction, Faculty of Education, Srinakharinwirot University

Appendix B  
Official Letter

Ref. No. MHESI 0643.14/ ๒๕๖๒



Bansomdejchaopraya  
Rajabhat University  
1061 Soi Itsaraphap 15,  
Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

2<sup>nd</sup> August, 2024

Subject Request for Research Tool Validation  
Dear Asst.prof. Sirikorn Tosati, Ph.D., Educational Evaluation and Research Program,  
Faculty of Education, Bansomdejchaopraya Rajabhat University

Attachment Comprehensive Conceptual Framework and Research Methodology,  
including Validation Documents

Section A. Thesis Concept Paper

A.1 Comprehensive Conceptual Framework and Research Methodology about  
Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong  
Province

A.2 Preliminary Results of SWOT-PEST analysis on equity of higher vocational  
education in Guangdong Province (based primarily on the collection and analysis of research  
articles)

Section B. Research instruments

B.1 Questionnaire on the current status and existing problems of equity in higher  
vocational education in Guangdong Province

B.2 Open-ended questions on the current situations and existing problems of  
equity in higher vocational education in Guangdong Province

Section C. Assessment form for validity:

C.1 Assessment Form for Validity of Comprehensive Conceptual Framework and  
Research Methodology for Enhancing the Strategies,

C.2 Assessment Form for Validity of the Current Situation and Existing Problems  
of of equity in higher vocational education in Guangdong Province, and

C.3 Assessment Form for Validity of the open-ended questions of the Current  
Situation and Existing Problems of equity in higher vocational education in Guangdong Province.

I am writing to seek your expertise regarding the thesis entitled " Development of  
a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province " by Mr.Gao

ShanZhu, a Ph.D. student (ID 6573139002) majoring in Education Management for Sustainable Development at Bansomajchaopraya Rajabhat University, Thailand. This research is conducted under the supervision of Dr. Thanida Sutcharittham, Assistant Professor Dr. Sunate Thaveethavornsawat, and Assistant Professor Dr. Sarayuth Sethakhajom.

Mr. Gao ShanZhu intends to use the attached instruments for her research. Given your extensive experience in the field of education, sustainability, and educational administration, management, and leadership, we would be honored if you could validate these instruments to ensure their suitability for the study. Your input will be invaluable in enhancing the quality and accuracy of the research tools before they are administered to the study participants.

Attached to this letter are the comprehensive conceptual framework, research methodology, questionnaire, and interview schedule. We would greatly appreciate your suggestions and comments for improving these instruments.

Your positive response to this request is highly appreciated. Please complete the validation process and return all files to the researcher within 14 days of receipt.

Thank you for your time and consideration. We look forward to your valuable feedback.

Yours faithfully



(Ast. Prof. Dr. Tanaput Chanchaen)

Vice Dean of Graduate School for Dean of Graduate School

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Ref. No. MHESI 0643.14/3 ๒๕๕๒



Bansomdejchaopraya  
Rajabhat University  
1061 Soi Itsaraphap 15,  
Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

2<sup>nd</sup> August, 2024

Subject Request for Research Tool Validation  
Dear Asst.Prof.Dr.Pairach Piboonrunroj, Assistant to the President, ChiangMai University

Attachment Comprehensive Conceptual Framework and Research Methodology,  
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1061 Soi Itsaraphap 15,  
Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

2<sup>th</sup> August, 2024

Subject Request for Research Tool Validation  
Dear Dr.Khagendra Raj Dhakal, Specialist Lecturer King Mongkut's University of  
Technology North Bangkok

Attachment Comprehensive Conceptual Framework and Research Methodology,  
including Validation Documents

Section A. Thesis Concept Paper

A.1 Comprehensive Conceptual Framework and Research Methodology about  
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I am writing to seek your expertise regarding the thesis entitled " Development of  
a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province " by Mr.Gao

ShanZhu, a Ph.D. student (ID 6573139002) majoring in Education Management for Sustainable Development at Bansomejchaopraya Rajabhat University, Thailand. This research is conducted under the supervision of Dr. Thanida Sutcharittham, Assistant Professor Dr. Sunate Thaveethavornsawat, and Assistant Professor Dr. Sarayuth Sethakhajorn.

Mr. Gao ShanZhu intends to use the attached instruments for her research. Given your extensive experience in the field of education, sustainability, and educational administration, management, and leadership, we would be honored if you could validate these instruments to ensure their suitability for the study. Your input will be invaluable in enhancing the quality and accuracy of the research tools before they are administered to the study participants.

Attached to this letter are the comprehensive conceptual framework, research methodology, questionnaire, and interview schedule. We would greatly appreciate your suggestions and comments for improving these instruments.

Your positive response to this request is highly appreciated. Please complete the validation process and return all files to the researcher within 14 days of receipt.

Thank you for your time and consideration. We look forward to your valuable feedback.

Yours faithfully



(Asst. Prof. Dr. Tanaput Chanchaeroen)

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Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

2<sup>nd</sup> August, 2024

Subject Request for Research Tool Validation  
Dear Associate Professor Dr.Pattawan Narjaikaew, Lecturer, Faculty of Education, Udon  
Thani Rajabhat University

Attachment Comprehensive Conceptual Framework and Research Methodology,  
including Validation Documents

Section A. Thesis Concept Paper

A.1 Comprehensive Conceptual Framework and Research Methodology about  
Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong  
Province

A.2 Preliminary Results of SWOT-PEST analysis on equity of higher vocational  
education in Guangdong Province (based primarily on the collection and analysis of research  
articles)

Section B. Research Instruments

B.1 Questionnaire on the current status and existing problems of equity in higher  
vocational education in Guangdong Province

B.2 Open-ended questions on the current situations and existing problems of  
equity in higher vocational education in Guangdong Province

Section C. Assessment form for validity:

C.1 Assessment Form for Validity of Comprehensive Conceptual Framework and  
Research Methodology for Enhancing the Strategies,

C.2 Assessment Form for Validity of the Current Situation and Existing Problems  
of of equity in higher vocational education in Guangdong Province, and

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Thonburi, Bangkok, Thailand  
10600

2<sup>th</sup> August, 2024

Subject Request for Research Tool Validation  
Dear Dr.Trai unyapoti, Department of Curriculum and Instruction, Faculty of Education,  
Srinakharinwirot University

Attachment Comprehensive Conceptual Framework and Research Methodology,  
including Validation Documents

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Ref. No. MHESI 0643.14/2643



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10600

26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Yang Li

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

- |  |               |
|--|---------------|
| 1. Dr. Thanida Sujarittham                           | Major Advisor |
| 2. Assistant Professor Dr. Sunate Thaveethavornsawat | Co-Advisor    |
| 3. Assistant Professor Dr. Sarayuth Sethakhajorn     | Co-Advisor    |

The thesis advisory committee and the student have considered that you are an expert in this field. Therefore, Graduate School would like to invite you to be an expert to join the interview to provide the student with suggestions for his research.

Thank you for your kind considerations.

Yours faithfully

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10600

26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Ou Fengjuan

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Yours faithfully

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Chen Ying

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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Thank you for your kind considerations.

Yours faithfully

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Chen Zhenqi

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Professor Li Kongze

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Yang Yimei

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Professor Chen Hulfeng

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Associate Professor Zhang Xiaolei

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Zhang Wenshan Deputy Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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Thonburi, Bangkok, Thailand  
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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Wang Xiaoyan Deputy Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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Yours faithfully

A handwritten signature in blue ink, appearing to be 'Tanaput'.

(Asst. Prof. Dr. Tanaput Chanchaoren)  
Vice Dean of Graduate School for Dean of Graduate School

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Thonburi, Bangkok, Thailand  
10600

26 August, 2024

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Dear Lin Xiuling Director

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Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Huang Xianzhou Deputy Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Situ Ning Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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Ref. No. MHESI 0643.14/ 2656



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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Chen Pingqing Deputy Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Qiu Yuan Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join an interview as an expert  
Dear Yang Ning Vice Dean

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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The thesis advisory committee and the student have considered that you are an expert in this field. Therefore, Graduate School would like to invite you to be an expert to join the interview to provide the student with suggestions for his research.

Thank you for your kind considerations.

Yours faithfully

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Ref. No. MHESI 0643.14/2627



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Thonburi, Bangkok, Thailand  
10600

26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Yang Li

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Ou Fenguan

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Yours faithfully

A handwritten signature in blue ink, appearing to read 'Tanaput'.

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Chen Ying

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Chen Zhenqi

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Professor Li Kongze

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Yang Yimei

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Professor Chen Huifeng

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Associate Professor Zhang Xiaolei

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Zhang Wenshan Deputy Director

Mr. Gao ShanZhu is a graduate student in the Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Wang Xiaoyan Deputy Director

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Lin Xiuling Director

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10600

26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Huang Xianzhou Deputy Director

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26 August, 2024

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Dear Situ Ning Director

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Thonburi, Bangkok, Thailand  
10600

26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Chen Pingqing Deputy Director

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Thonburi, Bangkok, Thailand  
10600

26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Qiu Yuan Director

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26 August, 2024

Subject Invitation to join a focus group discussion as an expert  
Dear Yang Ning Vice Dean

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Thonburi, Bangkok, Thailand  
10600

6<sup>th</sup> November, 2024

Subject Request for evaluation of strategies  
Dear Wei Tianxiang, Deputy Director, Development Planning Division, Guangdong  
Provincial Department of Education

Mr. Gao ShanZhu is a graduate student in Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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| 3. Assistant Professor Dr. Sarayuth Sethakhajorn    | Co-Advisor    |

The strategies for improving sustainable equity in higher vocational education in Guangdong Province will be developed in this research. The thesis advisory committee and the student have considered that you are an expert in this field. Therefore, Graduate School would like to invite you to be an expert to assistance in evaluating the adaptability and feasibility of the strategies to provide the student with suggestions for his research.

Thank you for your kind considerations.

Yours faithfully

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Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

6<sup>th</sup> November, 2024

Subject Request for evaluation of strategies  
Dear Wang Weibin, PhD, Professor, Deputy Director, Development Planning Office,  
Shenzhen Institute of Vocational Technology

Mr. Gao ShanZhu is a graduate student in Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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6<sup>th</sup> November, 2024

Subject Request for evaluation of strategies  
Dear Professor Huang Xianzhou, Deputy Director, Student Affairs Department, Shanwei  
Institute of Vocational Technology

Mr. Gao ShanZhu is a graduate student in Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

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Ref. No. MHESI 0643.14/๑ ๒-๗๕๓



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Rajabhat University  
1061 Soi Itsaraphap 15,  
Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

6<sup>th</sup> November, 2024

Subject Request for evaluation of strategies  
Dear Hong JIangan, Senior Economist, Director of Finance Department, Yangjiang  
Institute of Vocational Technology

Mr. Gao ShanZhu is a graduate student in Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

- |  |               |
|--|---------------|
| 1. Dr. Thanida Sujarittham                           | Major Advisor |
| 2. Assistant Professor Dr. Sunate Thaveethavornsawat | Co-Advisor    |
| 3. Assistant Professor Dr. Sarayuth Sethakhajorn     | Co-Advisor    |

The strategies for improving sustainable equity in higher vocational education in Guangdong Province will be developed in this research. The thesis advisory committee and the student have considered that you are an expert in this field. Therefore, Graduate School would like to invite you to be an expert to assistance in evaluating the adaptability and feasibility of the strategies to provide the student with suggestions for his research.

Thank you for your kind considerations.

Yours faithfully

(Asst. Prof. Dr. Tanaput Chanchaoren)

Vice Dean of Graduate School for Dean of Graduate School

Tel.+662-473-7000  
www.bsru.ac.th  
E-mail: grada@bsru.ac.th

Ref. No. MHESI 0643.14/๗๕๓๕๓



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1061 Soi Itsaraphap 15,  
Itsaraphap Road, Hiranruchi,  
Thonburi, Bangkok, Thailand  
10600

6<sup>th</sup> November, 2024

Subject Request for evaluation of strategies  
Dear Professor Qiu Yuan, Director, Quality Management Department, Heyuan Institute of Vocational Technology

Mr. Gao ShanZhu is a graduate student in Doctor of Philosophy Program in Educational Management for Sustainable Development program of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province", supervised by the thesis advisory committee as follows.

- |  |               |
|--|---------------|
| 1. Dr. Thanida Sujarittham                           | Major Advisor |
| 2. Assistant Professor Dr. Sunate Thaveethavornsawat | Co-Advisor    |
| 3. Assistant Professor Dr. Sarayuth Sethakhajorn     | Co-Advisor    |

The strategies for improving sustainable equity in higher vocational education in Guangdong Province will be developed in this research. The thesis advisory committee and the student have considered that you are an expert in this field. Therefore, Graduate School would like to invite you to be an expert to assistance in evaluating the adaptability and feasibility of the strategies to provide the student with suggestions for his research.

Thank you for your kind considerations.

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(Asst. Prof. Dr. Tariaput Chanchaoren)

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Appendix C  
Research Instrument

## Questionnaire

**Research Title:** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

**Direction:**

1. This questionnaire is part of the research on sustainable equity strategies for higher vocational education in Guangdong Province. It aims to understand the perception of higher vocational students in Guangdong Province on the current status and existing equity problems in higher vocational education in Guangdong Province.

2. This survey will be conducted anonymously and take 5-10 minutes. All answers will be kept strictly confidential and used only for research purposes. Please read the questions carefully and choose according to your actual situation. Your opinions are significant to this study.

Thank you for your support and cooperation.

Sincerely,

Mr. GaoShanZhu

A doctoral student in Sustainable Development Education  
Bansomdejchaopraya Rajabhat University

## Part 1 Information about the identity of the respondent

1. Gender:

male       female

2. Place of residence:

City       Township       Rural

3. Family economic status:

rich       Middle       ordinary       poor

Note:

1) A family with an annual income of more than 300,000 yuan is considered a wealthy family;

2) A family with an annual income of 150,000-300,000 yuan is considered a middle-class family;

3) A family with an annual income of 80,000-150,000 yuan is considered an ordinary family;

4) A family with an annual income of less than 80,000 yuan is considered a low-income family

4. School location:

Pearl River Delta       East Guangdong  
 Western Guangdong       Northern Guangdong

## Part 2 Guangdong Province Vocational College Students' Perception of the Equity Status and Problems of Guangdong Province's Higher Vocational Education

Actual perception of the current status and existing equity problems in higher vocational education based on your actual situation and experience. Please use the Likert five-point rating scale: 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree.

dimension (math.)	Questions	Level				
		5	4	3	2	1
Perception of educational equity in the school you attend	I have equal opportunities in school					
	My classmates of different ethnicities, genders, and socioeconomic backgrounds have equal access to educational resources at school.					
	The school's educational and teaching conditions (teachers, internship and training equipment, books, materials, etc.) can help me effectively carry out theoretical and practical learning.					
	The school provides advanced training and teaching conditions such as artificial intelligence and virtual simulation.					
	The school provides necessary scholarships and grants to help struggling students complete their studies.					
	The school provides us with high-quality internship opportunities.					
	The school provides us with a variety of overseas university study and training programs to choose from					

dimension (math.)	Questions	Level				
		5	4	3	2	1
	Higher vocational education costs do not constitute a financial burden for me.					
Perception of equity in Guangdong's higher vocational education	There is a significant development gap between vocational colleges in Guangdong's eastern, western, and northern regions and those in the Pearl River Delta region.					
	The Guangdong Provincial Government has inequity in allocating higher vocational education resources.					
	The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education.					
	The local government, where the school is located, does not emphasize the development of higher vocational education.					
	I am satisfied with the development of higher vocational education in Guangdong Province.					
Overall perception of equity in higher vocational education	My relatives and friends generally have a positive attitude towards higher vocational education					
	Society has prejudice and discrimination against higher vocational education.					
	I think the status of higher vocational colleges is lower than that of undergraduate colleges.					
	The state attaches great importance to the development of higher vocational education.					
	The concept that "vocational education and general education are two different types of education and have equal importance," as					

dimension (math.)	Questions	Level				
		5	4	3	2	1
	formulated by national laws and policies, has enhanced my recognition of higher vocational education.					
The overall perception of educational equity	There is still a problem of educational inequality in China.					
	The issue of educational equity has had a significant impact on me.					
	There is a significant educational gap between urban and rural areas and between regions.					
	Differences in regional economic development are the leading cause of educational inequality.					
	Educational equity is significant to the harmonious development of society.					
Expectations for one's future	I have the opportunity to study undergraduate.					
	I can get equal employment opportunities with general education.					
	I can earn the same amount of money as a regular education.					
	Receiving vocational education is beneficial to future job promotions and salary increases.					
	You will not be discriminated against at work because of your educational level.					

**Part 3 Open-ended Questions**

What opinions and suggestions do you have on how schools, governments, or society can promote sustainable equity in higher vocational education?

.....  
.....  
.....  
.....

Thank you for your kind cooperation in completing the questionnaire!

Researcher  
Mr.GaoShanZhu

## Interview Form

**Research title:** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

**Direction:**

This interview is integral to the research on sustainable equity strategies for higher vocational education in Guangdong Province. It aims to study the current equity status and existing problems of higher vocational education in Guangdong Province.

The information collected from each interviewee will be kept strictly confidential, and the researchers guarantee that your answers will not impact the school or you personally. We kindly ask you to answer truthfully based on your experience and work background.

Thank you for your support and cooperation.

Sincerely,

Mr. GaoShanZhu

A doctoral student in Sustainable Development Education  
Bansomdejchaopraya Rajabhat University

Name:

.....

current school:

.....

Job Position (Teacher/Administrator):

.....

Position / Title:

.....

Years of working in colleges and universities:

.....

1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?

2. What existing policies do you think have effectively promoted sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?

3. In promoting sustainable equity, what significant challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?

4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?

5. How should the government, schools, and other stakeholders work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?

6. what other necessary additional information or opinions do you want to share besides the above questions?

Thank you for taking the time to participate in this interview. Your opinions are significant to our research. If you have any additional information you would like to add, please fill it out below.

## Validity Assessment Form of the Questionnaire on the Current Status and Existing Problems of Equity in Higher Vocational Education in Guangdong Province

**Research title:** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

**Research Objectives:**

1. To study the current equity situation in higher vocational education in Guangdong Province.
2. To develop the strategy for promoting equity in higher vocational education in Guangdong Province.
3. To evaluate the adaptability and feasibility of the strategy for promoting equity in higher vocational education in Guangdong Province.

**Assessor's Name:**

Job title/position:

Employer:

Years of working experience in higher vocational colleges:

**Directions:**

When using the questionnaire, please evaluate whether the contents of the questionnaire about the actual perception of Guangdong vocational college students on the current status and existing equity problems in Guangdong vocational college education are consistent. After evaluation, please tick the corresponding box. Please evaluate according to the following criteria: -1 = does not match the definition, 0 = not sure whether it meets the definition, +1 = corresponds to the definition.

Dimension (math.)	Questions	evaluation result		
		-1	0	1
<b>part 1 Information about the identity of the respondents</b>				
1	gender: <input type="checkbox"/> male <input type="checkbox"/> female			
2	Domicile: <input type="checkbox"/> Urban <input type="checkbox"/> Township <input type="checkbox"/> Rural			
3	family's financial situation: <input type="checkbox"/> Rich <input type="checkbox"/> middle class <input type="checkbox"/> ordinary <input type="checkbox"/> poor			
4	School location: <input type="checkbox"/> Pearl River Delta <input type="checkbox"/> Eastern Guangdong <input type="checkbox"/> Western <input type="checkbox"/> Guangdong, Northern Guangdong			
<b>part 2 Perception of Students from Higher Vocational Colleges in Guangdong Province on the Current Status and existing problems of equity in higher Vocational Education in Guangdong Province</b>				
Perception of educational equity in the school you attend	I have equal opportunities in school			
	My classmates of different ethnicities, genders, and socioeconomic backgrounds have equal access to educational resources at school.			
	The school's educational and teaching conditions (teachers, internship and training equipment, books, materials, etc.) can help me effectively			

Dimension (math.)	Questions	evaluation result		
		-1	0	1
	carry out theoretical and practical learning.			
	The school provides necessary scholarships and grants to help struggling students complete their studies.			
	The school provides us with high-quality internship opportunities.			
	The school allows us to study and further our studies at foreign universities.			
	Higher vocational education costs do not constitute a financial burden for me.			
Perception of equity in Guangdong's higher vocational education	There is a significant development gap between vocational colleges in Guangdong's eastern, western, and northern regions and those in the Pearl River Delta region.			
	The Guangdong Provincial Government has inequity in allocating higher vocational education resources.			
	The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education.			
	The local government, where the school is located, does not emphasize the development of higher vocational education.			
	I am satisfied with the development of higher vocational education in Guangdong Province.			
	My relatives and friends generally have a positive attitude towards higher vocational education			

Dimension (math.)	Questions	evaluation result		
		-1	0	1
Overall perception of equity in higher vocational education	Society has prejudice and discrimination against higher vocational education.			
	I think the status of higher vocational colleges is lower than that of undergraduate colleges.			
	The state attaches great importance to the development of higher vocational education.			
	The concept that "vocational education and general education are two different types of education and have equal importance," as formulated by national laws and policies, has enhanced my recognition of higher vocational education.			
The overall perception of educational equity	There is still a problem of educational inequality in China.			
	The issue of educational equity has had a significant impact on me.			
	There is a significant educational gap between urban and rural areas and between regions.			
	Differences in regional economic development are the leading cause of educational inequality.			
	Educational equity is significant to the harmonious development of society.			
Expectations for one's future	I have the opportunity to study undergraduate.			
	I can get equal employment opportunities with general education.			
	I can get the same financial benefits as a general education.			

Dimension (math.)	Questions	evaluation result		
		-1	0	1
	Receiving vocational education is beneficial to future job promotions and salary increases.			
	You will not be discriminated against at work because of your educational level.			
<b>Part 3 Open-ended questions</b>				
1	What opinions and suggestions do you have on how schools, governments, or society can promote sustainable equity in higher vocational education?			

Suggestions:

.....

.....

.....

.....

## Effectiveness of the Interview Form for Assessing the Current Situation and Existing Problems of Equity in Higher Vocational Education in Guangdong Province

**Research title:** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

### **Research Objectives:**

1. To study the current equity situation in higher vocational education in Guangdong Province.
2. To develop the strategy for promoting equity in higher vocational education in Guangdong Province.
3. To evaluate the adaptability and feasibility of the strategy for promoting equity in higher vocational education in Guangdong Province.

### **Directions:**

When using the interview, please evaluate whether the current status and existing problems of equity in higher vocational education in Guangdong Province are consistent in the interview. After evaluation, please tick the corresponding box. Please evaluate according to the following criteria: -1 = does not match the definition, 0 = not sure whether it meets the definition, +1 = corresponds to the definition.

Serial number	Questions	evaluation result		
		-1	0	1
1	What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?			
2	What existing policies do you think have effectively promoted sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?			
3	In promoting sustainable equity, what significant challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges pose to achieving equity?			
4	What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?			
5	How should the government, schools, and other stakeholders work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?			
6	In addition to the above questions, what other necessary additional information or opinions do you want to share?			

**Suggestions:**

.....

.....

.....

## Evaluation Form

**Research Title:** Development of a Sustainable Equity Strategy for Higher Vocational Education in Guangdong Province

**Direction:**

1. The "Guangdong Province Higher Vocational Education Sustainable Equity Strategy Evaluation Form" is a form for experts to evaluate the adaptability and feasibility of strategies and make recommendations. It contains comprehensive political, economic, and social strategy, including 11 significant strategies and 56 specific measures.

2. The purpose of this study: 1) To study the current situation of equity in higher vocational education in Guangdong Province. 2) To develop a strategy for promoting equity in higher vocational education in Guangdong Province. 3) To evaluate the adaptability and feasibility of the strategy for promoting equity in higher vocational education in Guangdong Province.

3. Your evaluation is of great significance to formulating and improving strategies. The evaluation data will only be used for research purposes and will not adversely impact you personally.

Thank you for your support and cooperation.

Sincerely,

Mr. GaoShanZhu

A doctoral student in Sustainable Development Education  
Bansomdejchaopraya Rajabhat University

Please check each comment box; the score is as follows:

5 indicates the highest adaptability and feasibility.

4 indicates high adaptability and feasibility.

3 indicates average adaptability and feasibility.

2 indicates low adaptability and feasibility;

One indicates the lowest adaptability and feasibility.

Strategy	Adaptability					Feasibility				
	5	4	3	2	1	5	4	3	2	1
<b>【Political Strategy】 Make good use of the existing development policies of superiors</b>										
1. Make good use of national support policies and funds.										
2. Improve the quality of education through policy and financial support.										
3. Promote information-based education reform.										
4. Make use of policy and financial support to enhance self-development capabilities.										
5. Actively seek external support.										
<b>【Political Strategy】 Formulate and implement preferential assistance policies</b>										
1. Optimize and integrate regional educational resources.										
2. Strengthen the tilt of education policies.										
3. Promote technology support policies to narrow regional technology gaps.										
4. Strengthen information construction and reduce the urban and rural education gap.										
5. Improve the quality of higher vocational colleges.										



Strategy	Adaptability					Feasibility				
	5	4	3	2	1	5	4	3	2	1
7. Strengthen provincial coordination and promote resource sharing.										
8. Give full play to the role of higher vocational colleges as talent think tanks.										
9. Optimize the layout of higher vocational colleges.										
10. Strengthen local governments' responsibility and ensure policy implementation.										
<b>【Political Strategy】 Improving the Governance Level of Higher Vocational Colleges</b>										
1. Optimize resource allocation and improve internal management.										
2. Establish an evaluation and feedback mechanism for professional settings.										
<b>【Economic Strategy】 Actively strive for and make good use of external economic resources</b>										
1. Give full play to the advantages of the information industry and promote the construction of educational informatization.										
2. Take advantage of the export-oriented economy and strengthen international cooperation and resource introduction.										
3. Build a diversified capital investment model.										
4. Use government bond funds to upgrade school facilities.										
<b>【Economic Strategy】 Implement preferential support investment</b>										



Strategy	Adaptability					Feasibility				
	5	4	3	2	1	5	4	3	2	1
2. Deepen school-enterprise cooperation and enhance market adaptability.										
3. Promote local enterprises to participate in vocational education.										
4. Deepen cooperation between schools and enterprises and promote the integration of production and education.										
5. Establish a guidance mechanism for school-enterprise cooperation.										
6. Establish a professional setting adjustment mechanism with multi-party participation.										
7. Optimize professional settings and enhance market adaptability.										
<b>【Social Strategy】 Strengthen inter-school resource sharing and cooperation</b>										
1. Promote cooperation with colleges and universities in developed regions to improve technical level.										
2. Strengthen inter-school cooperation with developed regions.										
3. Strengthen inter-school cooperation and share high-quality educational resources.										
<b>【Social Strategy】 Implementation of social cognition enhancement projects guided by policies</b>										
1. Actively participate in local social governance.										
2. Strengthen skills training for social personnel.										
3. Implement social awareness enhancement										



Appendix D  
The Results of the Quality Analysis of Research  
Instruments



Questions	Experts					IOC	Conclusion
	1	2	3	4	5		
Guangdong's eastern, western, and northern regions and those in the Pearl River Delta region.							
The Guangdong Provincial Government has inequity in the allocation of higher vocational education resources	1	1	1	1	1	1	consistent
The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education	1	-1	1	1	1	0.6	consistent
The local government where the school is located does not attach importance to the development of higher vocational education	1	1	1	1	1	1	consistent
I am satisfied with the current development of higher vocational education in Guangdong Province	1	0	1	1	1	0.8	consistent
My relatives and friends generally have a positive attitude towards higher vocational education	1	1	1	1	1	1	consistent
Society has prejudice and discrimination against higher vocational education	1	1	1	1	1	1	consistent
I think the status of higher vocational colleges is lower than that of undergraduate colleges	1	0	1	1	1	0.8	consistent
The state attaches great importance to the development of higher vocational education	1	1	1	1	1	1	consistent
The concept that "vocational education	1	0	1	1	1	0.8	consistent

Questions	Experts					IOC	Conclusion
	1	2	3	4	5		
and general education are two different types of education and have equal importance" put forward by national laws and policies has enhanced my recognition of higher vocational education.							
There is still a problem of educational inequality in China	1	1	1	1	1	1	consistent
The issue of educational equity has had a significant impact on me.	1	0	1	1	1	0.8	consistent
There is a significant educational gap between urban and rural areas and between regions	1	1	1	1	1	1	consistent
Differences in regional economic development are the leading cause of educational inequality	1	1	1	1	1	1	consistent
Educational equity is significant to the harmonious development of society.	1	1	1	1	1	1	consistent
I have the opportunity to study undergraduate	1	1	1	1	1	1	consistent
I can get equal employment opportunities with general education	1	1	1	1	1	1	consistent
I can get the same financial benefits as a general education	1	1	1	1	1	1	consistent
Receiving vocational education is beneficial to future job promotion and salary increase	1	1	1	1	1	1	consistent
You will not be discriminated against at work because of your educational level	1	-1	1	1	1	0.6	consistent





Reliability analysis of research instruments  
Results of variable reliability correlation analysis

Reliability

Scale: all variables

Case handling summary			
		N	%
Case	Effective	400	100
	Excluded	0	0
	Total	400	100
a. List deletions based on all the variables in this program.			

Pre-survey reliability statistics		
Cronbach's Alpha	Based on standardized items, Cronbach Alpha	Number of terms
.815	.815	30

Formal survey's reliability and validity statistics		
Cronbach's Alpha	KMO	Number of terms
.923	.909	400

## Interviewee administrators interview records

### Interviewer 1

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

In my opinion, the main educational inequity problems in Guangdong Province's higher vocational education include uneven regional development, differences in enrollment policies, and uneven distribution of educational resources, which have led to a significant gap in the development of higher vocational colleges between economically developed and underdeveloped regions, a large gap in admission opportunities, and a significant gap in the development of undergraduate and higher vocational education. These problems directly affect students' learning opportunities and development paths. For example, schools in developed areas usually have better teaching staff and teaching facilities, while students in remote areas often have difficulty accessing high-quality educational resources. This not only affects students' learning outcomes but also restricts teachers' professional development, which may lead to talent loss and affect the overall development of the school.

**2. Which policies do you think have effectively promoted sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

Policies such as the "Plan for the Construction of High-level Vocational Schools and Majors with Chinese Characteristics" and the "Implementation Opinions on Promoting the High-end Development of Shenzhen Vocational Education and Creating World-class Education" have achieved certain results in promoting educational equity, improving the development level of higher vocational education and its social influence. These policies have injected strong impetus into the development of

vocational education, promoted the optimal allocation of vocational education resources, and improved the overall school-running level and comprehensive strength of vocational education.

**3. In the process of promoting sustainable equity, what significant challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The overall economic slowdown in Guangdong Province has directly affected investment in vocational education, especially in underdeveloped areas. Due to insufficient resources, vocational colleges in these areas find improving teaching facilities and staff difficult, resulting in a widening gap in education quality with developed areas. The loss of high-level talents has further exacerbated this problem, making it difficult to achieve educational equity. Cutting-edge technologies such as artificial intelligence and virtual simulation can help us overcome these obstacles. Artificial intelligence can be used to optimize curriculum settings and develop personalized learning plans based on student's needs. At the same time, virtual simulation technology can provide students with richer practical experience under limited resources, thereby improving their comprehensive quality.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

I believe that the key to solving the problem of sustainable equity in higher vocational education in Guangdong Province lies in the implementation of policies and the rational allocation of resources. We need to strengthen support for schools in underdeveloped areas, including investment in funds, technology, and teachers. At the same time, we need to build a sound evaluation mechanism to regularly evaluate and adjust the effectiveness of policy implementation to ensure that the goal of educational equity can be implemented. In addition, the participation and support of all sectors of society are also essential, especially the participation of

enterprises in talent training, which can provide students with more internship and employment opportunities.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should play a guiding role, formulate policies to promote educational equity and strengthen support for higher vocational colleges. At the same time, schools should take the initiative to establish cooperative relationships with local governments and enterprises to jointly promote the sharing of educational resources. Stakeholders, such as industry associations and social organizations, can provide support to schools by providing industry information, training resources, etc. All parties should strengthen cooperation in policy coordination, resource sharing, and practical activities, form a joint force, and jointly promote the sustainable equity of higher vocational education in Guangdong Province.

**6. In addition to the above questions, what other necessary additional information or opinions do you want to share?**

In addition to the above points, I would also like to emphasize the importance of mental health education. In the pursuit of educational equity, we should pay attention not only to academic performance and employment rate but also to students' mental health and career development planning. Schools should provide students with psychological counseling and career development guidance to help them better cope with the pressure of study and life. At the same time, social recognition and support for higher vocational education is also the key to achieving equity. Only when vocational education is valued will students be more actively involved in learning and development.

## Interviewer 2

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

In Guangdong Province's higher vocational education, the problem of inequity is mainly reflected in the significant regional and inter-school disparities in access to educational resources. In particular, students in rural areas face the problem of relatively insufficient learning resources and employment opportunities after entering vocational colleges in underdeveloped areas. For teachers, unequal resource allocation may lead to increased work pressure, decreased job satisfaction, and even affect the quality of teaching. For schools, unbalanced resource allocation will limit their development potential and lead to unbalanced competition between schools, thus affecting the overall reputation and attractiveness of the school.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

1) The "Double High Plan" and "Innovation and Strengthening School Plan" have achieved remarkable results in promoting the development of higher vocational education in Guangdong Province. Through these policies, higher vocational colleges have deeply explored new models such as industry-education integration and school-enterprise cooperation, promoted the deep integration of vocational education with industry, enterprises, and society, and improved the overall school-running level and comprehensive strength of vocational education, which not only meets the needs of economic and social development demand has also increased the attractiveness and influence of vocational education.

2 ) The higher vocational enrollment expansion policy provides social groups such as veterans, laid-off workers, migrant workers, and high-quality farmers with more learning and development opportunities and trains them to become high-quality technical and skilled personnel, thereby achieving higher quality and sufficient employment, thereby changing their personal destiny, and at the same time

benefiting their entire family, allowing more socially aspiring young people to realize more excellent life value in the process of creating social wealth. "

**3. In the process of promoting sustainable equity, what significant challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The imbalance of regional economic development in Guangdong Province has led to a serious imbalance in the allocation of vocational education resources. Developed regions are able to obtain more financial and policy support to attract high-quality teachers and advanced equipment, while underdeveloped regions are stretched in these areas and find it difficult to provide the same level of education as developed regions. This resource imbalance directly affects educational equity. Artificial intelligence and virtual simulation technology can play an important role in alleviating these problems. Artificial intelligence can help personalize teaching and provide differentiated educational support based on the needs of different students, while virtual simulation technology can create a more equitable learning environment in practical teaching so that all students can gain similar practical experience.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

Key measures include increasing investment in education in underdeveloped areas, improving school management, and promoting the professional development of the teaching staff. In particular, in underdeveloped areas, policy support and resource support are needed to ensure that vocational schools in these areas can obtain the same high-quality educational resources as schools in developed areas.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should continue to increase policy support, especially in terms of resource allocation and capital investment. At the same time, schools should take the initiative to strengthen cooperation with enterprises and social organizations to jointly promote the development of vocational education. Stakeholders such as industry associations can play an important role in providing internship opportunities and curriculum development. All parties should strengthen coordination in policy formulation, resource allocation, and talent training to promote the realization of educational equity jointly.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In the process of promoting educational equity, I believe that we should also pay attention to students' mental health education and career development guidance. Vocational schools should not only cultivate students' skills, but also help them establish a correct career and life outlook. In addition, the society's attention and support for vocational education is also an important guarantee for achieving educational equity. Only with the joint efforts of the whole society can vocational education truly play its due role.

**Interviewer 3**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

The main problems are the gap in educational resources between economically developed and underdeveloped regions, the uneven distribution of resources between schools, and the difference in social recognition between vocational education and general education. Especially in underdeveloped regions, students often find it difficult to obtain the same educational resources and opportunities as those in developed regions. This inequity phenomenon not only limits students' development space but also has a negative impact on teachers' teaching effectiveness, making them feel the plight of resource scarcity in their work.

For schools, unequal resource allocation directly affects their overall school quality and social influence, putting them at a disadvantage in competition.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

A number of high-level vocational colleges have been cultivated and established in the economically developed areas of Guangdong Province, which are ranked at the forefront of the country. At present, a regional linkage assistance mechanism is implemented to organize first-class vocational colleges to pair up with vocational colleges in underdeveloped areas to improve their school-running strength. For example, through paired assistance, many vocational colleges in underdeveloped areas have received more resource support, improved teaching conditions, and increased teaching staff. With the support of this policy, Jieyang Vocational and Technical College has successfully implemented a series of measures to improve the quality of education, especially in professional construction and school-enterprise cooperation, and has achieved remarkable results, which has significantly improved the employment rate and satisfaction of students. These successful cases prove that reasonable policy guidance can effectively narrow the education gap between regions and promote educational equity.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The outflow of high-level talent is a serious challenge facing vocational education in underdeveloped regions. These regions find it difficult to provide competitive salaries and career development prospects, resulting in the loss of excellent teachers and management talents, which weakens the quality of education. In addition, the low social recognition of vocational education makes it difficult for these institutions to attract high-quality students and teachers, further hindering

educational equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent and create more equal practical opportunities for students, thereby improving educational effectiveness and promoting educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

The key to solving the problem of sustainable equity in higher vocational education in Guangdong Province lies in building a scientific resource allocation mechanism and improving the professional level of the teaching staff. To achieve this goal, the government needs to increase its support for underdeveloped areas to ensure the rational allocation of educational resources. In addition, it is necessary to strengthen teacher training and improve teachers' professional quality and teaching ability. At the same time, promoting school-enterprise cooperation is also key, and improving students' practical ability and employment competitiveness through actual projects and internship opportunities.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should play a leading role in policy formulation and resource allocation to ensure that policies on educational equity can be implemented. Schools need to take the initiative to cooperate with enterprises and social organizations to jointly promote the reform and development of vocational education. Enterprises and industry associations can support the development of vocational education by providing internship opportunities and funding projects. All parties should strengthen cooperation in policy implementation, resource sharing, and social recognition to promote the realization of educational equity jointly.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In addition to the above, I also believe that the equity of vocational education should not only be reflected in the allocation of material resources but also focus on the personalized development and mental health of students. Schools should provide more support and guidance to students to help them find the right direction for themselves in the process of career development. In addition, society's attention and support for vocational education is also the key to achieving educational equity. Only when vocational education is recognized and accepted by the whole society can students really benefit from it, and educational equity can be truly realized.

#### **Interviewer 4**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

There are problems such as unbalanced regional development, differences in family economic backgrounds, and unequal resource allocation between different schools. These problems have led to significant gaps in students' learning conditions and employment opportunities, affecting their knowledge and skills, and thus the quality of talent input into society, affecting economic development and social vitality. For teachers, unequal resource allocation may affect their work enthusiasm and teaching quality, which in turn has a negative impact on students' academic performance. In terms of schools, this imbalance may lead to a decline in the attractiveness of some colleges and universities for enrollment, which in turn affects the overall development of schools.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

Guangdong Province has implemented the "Double High Plan," "Innovation and Strengthening School Plan," and student aid policies, which have played a positive role in promoting the development of higher vocational education, ensuring the schooling of higher vocational students, and promoting the equity of higher

vocational education. For example, by subsidizing students with financial difficulties and providing them with more learning opportunities, more students can successfully complete their studies. With the support of these policies, Shanwei Vocational and Technical College provides a full range of funding and support services for poor students, enabling these students to not only successfully complete their studies but also successfully find employment after graduation. This successful case shows the practical effect of policies in improving educational equity.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The general low social recognition of vocational education is one of the main factors hindering the development of vocational education. This social concept not only affects the attractiveness of vocational education, but also leads to the loss of students and teachers. In addition, the existence of international technological barriers makes it difficult for vocational colleges in underdeveloped areas to introduce advanced technology and cultivate international talents, which further affects educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

I believe that the key to solving the problem of sustainable equity in higher vocational education in Guangdong Province lies in increasing investment in education in underdeveloped areas and promoting the rational allocation of educational resources. In addition, we need to strengthen professional training for teachers and improve their teaching ability. In order to implement these measures, the government needs to provide more financial support and establish a sound education evaluation mechanism to ensure that various measures are effectively implemented.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should continue to play a leading role, formulate and implement policies to promote educational equity and provide more support to underdeveloped regions in resource allocation. Schools need to strengthen cooperation with enterprises, social organizations, etc., expand the depth and breadth of school-enterprise cooperation, provide more practical opportunities, and enhance students' employment competitiveness. All parties should strengthen communication and collaboration in policy implementation, resource allocation, and educational practice and jointly promote the realization of educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In addition to the above, I believe that mental health education cannot be ignored in the process of promoting educational equity. When students face learning and life pressures, they need schools to provide more psychological support and counseling services. It is also very important to improve the recognition of vocational education by society. Only when vocational education is widely valued can students' career development be smoother.

#### **Interviewer 5**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

The inequality of higher vocational education in Guangdong Province is mainly manifested in the resource gap between regions, the uneven distribution of funds between schools, and the disadvantages of poor students in educational opportunities and learning conditions. These problems not only directly affect students' learning outcomes and career development but also have a negative

impact on teachers' work enthusiasm and the overall quality of school management. Specifically, schools with insufficient funds find it difficult to attract excellent teachers and update teaching facilities, which in turn affects the quality of education. This inequity may also lead to some students not being able to obtain sufficient support and having difficulty achieving academic and employment success.

**2. What existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The student aid policy implemented by Guangdong Province has played a significant role in promoting sustainable equity in higher vocational education. For example, they can set up special funds to help students with financial difficulties reduce or waive tuition fees and provide various forms of financial support such as student loans and scholarships. Through this policy, Yangjiang Vocational and Technical College has provided financial assistance to a large number of poor students, enabling them to successfully complete their studies. Such successful cases show the importance of financial support in alleviating educational inequality and provide a useful reference for other schools.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The decline in the birth rate has brought about the challenge of a decrease in the number of students, especially in underdeveloped areas. Vocational schools in these areas are at a disadvantage in terms of competition for students. In order to maintain operations, schools have to lower admission standards, which directly affects the quality and equity of education. At the same time, the lack of social recognition of vocational education has further weakened the attractiveness and status of vocational education.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

One of the key measures to solve the problem of sustainable equity in higher vocational education in Guangdong Province is to optimize the allocation mechanism of funds to ensure that funds can flow more fairly to schools and students in need of support. In addition, strengthening resource investment in underdeveloped areas and improving the quality of education in schools in these areas are also key to achieving educational equity. In order to implement these measures, the government needs to provide continuous financial support and establish a transparent and equity fund management and supervision mechanism to ensure the effectiveness of fund use.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should continue to play a leading role in policy formulation and funding allocation to ensure equity distribution of educational resources. Schools need to actively participate in the implementation of policies, especially in resource management and use, to ensure that funds are truly used to improve the quality of education and support student development. At the same time, enterprises can participate in the development of vocational education by providing practical opportunities and financial support. All parties should strengthen coordination and cooperation in resource allocation, policy implementation, and talent training and jointly promote the realization of educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

I believe that in the process of achieving educational equity, the transparency and efficiency of financial management are also crucial. Schools should strengthen the openness and transparency of financial management to ensure that every penny of funds can play the greatest role. In addition, the understanding and support of

vocational education from all walks of life is also an important factor in achieving educational equity. Only with the joint efforts of the whole society can the sustainable equity of higher vocational education in Guangdong Province be truly realized.

#### **Interviewer 6**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

I believe that some of the educational inequalities in Guangdong Province's higher vocational education are mainly reflected in regional disparities, uneven resource distribution, and individual differences among students. The imbalance of educational resources between regions often puts rural students at a disadvantage in their studies. In addition, the resource gap between schools also affects the teaching quality of different schools and the learning experience of students. For teachers, uneven resources may lead to increased workload and affect their career satisfaction. Schools are limited in their reputation and social influence, especially in resource-scarce areas, where this inequity is particularly prominent.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

Policies implemented in Guangdong Province have achieved remarkable results in promoting educational equity. Through these policies, Maoming Vocational and Technical College has provided various financial aids such as tuition exemptions and bursaries for students with financial difficulties and actively promoted the internship and employment of poor students, which has achieved good social response. Precise financial support not only alleviates the financial pressure of poor students but also improves their learning motivation and academic performance, thus effectively promoting educational equity.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province? What barriers might these challenges pose to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

The overall economic slowdown in Guangdong Province and the decrease in the number of students have put vocational education under double pressure. Vocational schools in underdeveloped areas are particularly difficult to cope with these challenges. The lack of educational resources and the mismatch between the development of the digital economy make it difficult for these schools to provide modern educational services, resulting in the loss of educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

I believe that the key to solving the problem of sustainable equity in higher vocational education in Guangdong Province lies in establishing a more reasonable and scientific resource allocation mechanism to ensure that all students have equal learning opportunities. It is also necessary to strengthen support for teachers' professional development and improve their teaching level in order to better meet the diverse needs of students. To this end, the government should increase investment in education, especially support for underdeveloped areas, and schools need to strengthen internal management and improve the efficiency of resource use.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

In the process of promoting educational equity, the government should continue to play a leading role in ensuring the implementation of policies and the equitable distribution of resources. Schools need to strengthen cooperation with enterprises and social organizations, especially in the fields of school-enterprise

cooperation, internships, and employment, to ensure that students can get more practical opportunities. In addition, all parties need to strengthen communication and coordination in policy implementation, resource integration, and social support to promote the realization of educational equity jointly.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

I believe that in the process of achieving educational equity, we also need to pay attention to students' mental health and comprehensive quality training. Vocational education should focus not only on students' skill training but also on their all-round development. Helping students establish a positive outlook on life and values through diversified activities and courses is an important aspect of achieving educational equity. At the same time, society's understanding and recognition of vocational education is also key. Only when society has a higher recognition of vocational education can educational equity be truly achieved.

**Interviewer 7**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

The educational inequality problem in Guangdong Province's higher vocational education is mainly due to the imbalance in resource allocation caused by uneven economic development between regions, as well as the impact of uneven internal management levels of schools on the quality of education. Schools in economically developed areas usually have more financial support and high-quality educational resources, while students in economically underdeveloped areas may face problems such as outdated facilities and insufficient teachers. For students, this inequality means differences in the opportunity and quality of education; for teachers, it may lead to an imbalance in the working environment and career development space; for schools, it affects the overall educational outcomes and social reputation. The above

educational inequality issues ultimately affect the output of high-quality labor, thereby affecting the economic and social development of the region.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

1) Guangdong Province has played a positive role in promoting educational equity by implementing the policy of "expanding capacity, improving quality, and strengthening services." In 2023, Guangdong Province allocated 600 million yuan to support the development of vocational education. Among them, the provincial fiscal support funds for the national "Double High Plan" totaled 51.2 million yuan, and the reward and subsidy funds for the "Innovation and Strengthening School Project" of higher vocational colleges totaled 344.85 million yuan. Through these policies, Heyuan Vocational and Technical College has optimized its educational and teaching conditions, formed a unique school-running feature and educational brand, improved the quality of education and student satisfaction, and enhanced the school's influence and reputation.

2) The student aid policy provides strong financial support for students from rural areas, poor students, and special students to attend school. In 2023, approximately 10%-15% of new students will be admitted through the green channel, 23%-25% of students will apply for scholarships and student loans, and 20% of students in need will reduce their daily financial burden by applying for on-campus work-study positions.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The widening gap in regional economic development has led to an increasing shortage of vocational education resources in underdeveloped areas. The outflow of high-level talents has further weakened the teaching staff of vocational colleges in

these areas, and the gap in education quality with developed areas has continued to widen, making it difficult to ensure educational equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent. Artificial intelligence can help schools allocate resources more scientifically and improve the efficiency of education management through data analysis; virtual simulation technology can provide equal practical opportunities, especially in resource-scarce areas, to help students get the same learning experience as students in economically developed areas, thereby narrowing the gap in education quality.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

First, insisting on high-level advancement provides solid political and organizational guarantees for the development of higher vocational education.

Secondly, we will improve the support and guarantee system, including the promulgation of the "Guangdong Provincial Vocational Education Regulations" and the issuance of relevant documents, strengthen financial support, and improve the per capita funding system for vocational colleges, providing legal and financial support for the development of higher vocational education.

Third, strengthening coordination and linkage is also a key link. By coordinating the development of higher vocational education at the provincial level and the development of secondary vocational education at the municipal level, we can innovate the way of combining vocational education resources, implement the operation of provincial vocational college groups, effectively stimulate the vitality of vocational education, and promote the open sharing of high-quality resources.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

To promote sustainable equity in higher vocational education, the government should continue to improve policies and regulations, ensure equity allocation of resources, and strengthen supervision of policy implementation. Schools should actively promote internal management reforms, improve the quality of education, and take the initiative to cooperate with all sectors of society to provide students with more learning and practice opportunities. All stakeholders, including enterprises, social organizations, and parents, should strengthen collaboration and jointly build a supportive educational environment to achieve sustainable equity in education through multi-party efforts.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In addition to the above issues, I believe that in the process of promoting educational equity, society's understanding and recognition of vocational education also needs to be further improved. As an important part of the higher education system, the value of vocational education lies not only in cultivating technical talents but also in promoting social equity and economic development. Therefore, the government and all sectors of society should work together to improve the social status of vocational education and provide students with more equitable learning and development opportunities. In addition, the realization of educational equity is inseparable from the establishment of a long-term mechanism, and it is necessary to ensure the effective implementation of equity measures through continuous policy support and social attention.

**Interviewer 8**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

Large regional differences and uneven resource distribution are the main aspects of inequality in higher vocational education in Guangdong Province. For example, schools in economically developed areas can receive more financial

support and educational resources, while schools in relatively remote areas may face problems of backward facilities and insufficient teachers. This leads to gaps in learning conditions and opportunities among students, and for teachers, a lack of resources may limit their professional development and teaching effectiveness. The overall level of school running has also been affected by this, and the quality of students and the employment competitiveness of graduates vary significantly between different schools.

**2. Which current policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some success stories?**

Higher vocational colleges in economically developed areas, such as Shenzhen Vocational and Technical College and Guangdong Light Industry Vocational College, are among the top higher vocational colleges in Guangdong Province and even the country. The “paired assistance” policy and “vocational education” implemented by Guangdong Province, the “Special Fund Support” policy, have played a significant role in promoting educational equity. Taking Qingyuan Vocational and Technical College as an example, through these policies, the school has established special funding projects to help students with financial difficulties complete their studies and provides students with more internship and employment opportunities through school-enterprise cooperation projects. These measures have significantly improved students' academic performance and employment rates while also enhancing the school's social influence.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province? What barriers might these challenges pose to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

The disconnect between vocational education and the development of the digital economy is particularly prominent in underdeveloped regions. Vocational schools in these regions lack resources and capabilities, making it difficult to adjust

their courses and teaching methods in a timely manner, resulting in students' lack of competitiveness in the job market. In addition, the decline in student sources and low social recognition have further exacerbated the challenge of educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

I believe that the key measure to solve the problem of sustainable equity in higher vocational education in Guangdong Province is to strengthen the government's regulation and supervision of resource allocation to ensure the rational allocation of education funds. In addition, attention should be paid to the professional development of teachers, and their teaching ability should be improved to meet the diverse needs of students. At the same time, schools should strengthen cooperation with social enterprises, build a diversified support system, and provide students with more practice and employment opportunities.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

In promoting sustainable equity in higher vocational education, the government should play a leading role, ensure that policies are implemented, and increase support for underdeveloped regions. Schools need to take the initiative to establish close cooperative relationships with all sectors of society, especially enterprises and industry associations, to provide more resources and opportunities for students. All parties should strengthen coordination in resource sharing, policy implementation, and social support to jointly promote the realization of educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

I believe that achieving sustainable equity in higher vocational education requires not only the support of policies and resources but also a change in social concepts. Vocational education should be more widely recognized by society so that

educational equity can be truly achieved. At the same time, the internal management mechanism of the school also needs to be continuously optimized to adapt to the needs of social and economic development so as to provide students with a more equitable and high-quality educational environment.

### **Teacher interview records**

#### **Interviewer 1**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

In recent years, with the great attention of the Guangdong Provincial Government and the Guangdong Provincial Department of Education, Guangdong Province's higher vocational education has achieved remarkable results, but there are still problems such as uneven distribution of educational resources, large regional development differences, and uneven quality of talent training. High-quality schools can obtain more educational resources, while late-developing schools in remote areas are short of resources, resulting in a large gap in the learning environment and education quality. The imbalance of regional economic development has led to different school conditions among schools, affecting the overall teaching quality. The uneven quality of talent training has also led to society being cautious about hiring higher vocational students or setting discriminatory thresholds. These educational inequalities have had a negative impact on students' learning experience, teachers' teaching work, and the social influence of schools.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

Among the current policies, the Outline of the National Medium- and Long-term Education Reform and Development Plan has played an important role in promoting sustainable equity in higher vocational education in Guangdong Province. These policies have gradually narrowed the gap in educational resources by

promoting balanced development of urban and rural education, improving the quality of vocational education, and strengthening educational support in poor areas. A successful case is the "vocational education group school" implemented in some areas of Guangdong Province. Through resource sharing and teacher exchanges, the utilization efficiency of educational resources in various schools has been improved, and the realization of educational equity in the region has been promoted.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The existence of international technological barriers has caused many difficulties for higher vocational education in Guangdong Province in cultivating internationally skilled personnel. Due to resource and technological limitations, vocational colleges in underdeveloped areas find it difficult to introduce and apply internationally advanced technologies and teaching methods, which puts students in these colleges at a disadvantage in global competition, further widens the inequality of educational resources and opportunities, and hinders the development of educational equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent. For example, virtual simulation technology can make up for the current situation of insufficient practical training equipment, while artificial intelligence can meet the diverse needs of students through personalized teaching, thereby promoting educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

1) Increasing investment in education in underdeveloped areas and improving school conditions in these areas can effectively narrow the regional gap.

2) Strengthening teachers' professional training, especially in underdeveloped areas, and improving teachers' teaching levels can effectively improve the quality of talent training.

3) The advancement of educational informatization can make up for the gap in educational resources between regions through online education and resource sharing.

To implement these measures, support from the government, enterprises, and society is needed, including financial investment, policy guarantees, and technical support.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province. The government should increase policy support and resource allocation to ensure the implementation of policies on educational equity. Schools need to take the initiative to improve the quality of education, especially schools in remote areas, which should improve their school management level through resource sharing and teaching exchanges. Enterprises and social organizations can help vocational education meet market demand by providing funding, equipment support, and school-enterprise cooperation. All parties should strengthen communication and coordination, form a joint force, and jointly promote educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

It is worth noting that educational equity is not only about the equitable distribution of resources but also involves the renewal of educational concepts and the innovation of educational models. Cultivating students' innovative spirit and practical ability to adapt to the development needs of future society is a higher goal of achieving educational equity. At the same time, we should pay more attention to

the construction of "soft power" in vocational education, improve the comprehensive quality of students, and cultivate more competitive and high-quality technical talents for society.

#### **Interviewer 2**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers or schools?**

The problems of educational inequity in higher vocational education in Guangdong Province are mainly concentrated in the large differences in the distribution of educational resources, the large differences in the development of regional higher vocational colleges, and the large differences in per-student funding. Schools in developed areas have more teaching resources and better infrastructure, while governments in remote and underdeveloped areas have limited financial resources, which affects their investment in local higher vocational colleges. This leaves students with problems in terms of education quality and learning conditions. Significant difference. These problems affect students' learning results and teachers' teaching enthusiasm and limit the overall development level of the school to a certain extent.

**2. Which current policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some success stories?**

Guangdong Province has issued and implemented a series of policy documents with significant effects, among which the implementation opinions on deepening the integration of industry and education have played a prominent role. This policy supports each prefecture and city in running at least one higher vocational college and gives priority to the construction of application-oriented undergraduate colleges. Measures such as promoting school-enterprise cooperation have effectively improved the equity of educational resource distribution.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province? What barriers might these challenges pose to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

The outflow of high-level talent and international technological barriers are particularly prominent in underdeveloped regions. These problems have weakened the education quality and management level of vocational colleges in these regions. The low social recognition of vocational education has also made it difficult for these colleges to attract high-quality students and teachers, affecting educational equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent. Virtual simulation technology can provide a high-quality, practical training experience for schools with insufficient resources, while artificial intelligence can help teachers personalize teaching and improve teaching effectiveness, thereby promoting educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

1) The government should increase investment in education in underdeveloped regions to ensure equity distribution of resources.

2) Teachers' professional development also needs more support to improve teaching quality.

3) Promote educational informatization and enable educational resources to be used more widely and equitably through the combination of online and offline methods.

The implementation of these measures requires policy support from the government, investment of social resources, and cooperation and coordination among all parties.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational**

**education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government, schools, and other stakeholders should strengthen cooperation in policy formulation, resource allocation, and practical teaching. The government should provide policy support and financial investment to ensure the effective implementation of equity policies. Schools should take the initiative to improve the quality of education and bridge the uneven distribution of educational resources through school-enterprise cooperation and resource sharing. At the same time, enterprises and social organizations can help students better adapt to social needs by providing internship opportunities and supporting educational projects. All parties should strengthen coordination on communication mechanisms and jointly promote the sustainable equity of higher vocational education.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In the process of promoting educational equity, special attention should also be paid to students' mental health and career development needs. Higher vocational education should not only cultivate students' skills but also pay attention to their all-round development, including career planning and the improvement of psychological quality. By providing psychological counseling and career guidance services, schools can better support students' growth and development and ensure that educational equity is reflected not only in resources but also in students' personal development opportunities.

### **Interviewer 3**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

Due to geographical location and economic development constraints, vocational schools in Jieyang and other places have difficulty obtaining the same educational resources as those in the Pearl River Delta, such as advanced teaching

equipment and excellent teaching staff. This imbalance in resources directly affects students' learning experience and development opportunities and also puts teachers under greater pressure to teach, making it impossible for them to give full play to their professional abilities. At the same time, this inequality may also put schools at a disadvantage in the employment competition, further exacerbating the unequal distribution of resources.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The vocational education pairing assistance policy implemented by Guangdong Province has played a significant role. By pairing developed areas with higher vocational colleges in underdeveloped areas, it has effectively improved the level of higher vocational colleges in these areas. Through this policy, Jieyang Vocational and Technical College successfully established cooperative relationships with some colleges and universities in the Pearl River Delta, introduced advanced management methods and teaching resources, and effectively helped the development of the school.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province? What barriers might these challenges pose to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

The slowdown of Guangdong's economy and the low social recognition of vocational education have made it difficult for vocational colleges to attract students and teachers, especially in underdeveloped areas. The lack of resources has exacerbated the difficulties these colleges face in providing high-quality education, and educational equity is difficult to achieve. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can help make up for the shortage of some practical training, teachers, and other resources, allowing students to gain

practical experience in high-end equipment without equipment restrictions, which will help alleviate the problem of resource imbalance and promote educational equity.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

First, policy support is needed at the government level to distribute educational resources more evenly across the province through regional cooperation and resource integration. Second, continuous training and professional development support for teachers, especially in underdeveloped areas, should be strengthened to improve teaching quality and student learning outcomes. To implement these measures, joint efforts are needed from the government, enterprises, and social organizations, including collaborative cooperation in funding, technical support, and teacher training.

**5. How do you think the government, schools, and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government, schools, and other stakeholders should strengthen cooperation in policy implementation, resource sharing, and practical education to promote sustainable equity in higher vocational education in Guangdong Province. The government should introduce more policies to support underdeveloped regions and ensure that schools in these regions have access to necessary resources. Schools should actively seek opportunities for cooperation to improve the quality of education through inter-school exchanges and resource sharing. At the same time, enterprises and social organizations can help students better adapt to market demand by providing practical training opportunities and financial support. These collaborations need to establish long-term communication mechanisms to ensure their effectiveness and sustainability.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In higher vocational education, in addition to paying attention to hardware facilities and resource allocation, we should also pay attention to the comprehensive quality training of students. Vocational education is not only about imparting skills but also about shaping personality and professional ethics. Therefore, schools should incorporate more content about professional ethics and social responsibility into curriculum design to help students form correct professional values in addition to technical capabilities, which is of great significance for achieving true equity in education.

#### **Interviewer 4**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers, or schools?**

The educational inequality in Guangdong Province's higher vocational education is mainly manifested in regional disparities and uneven resource allocation. Relatively underdeveloped regions such as Shanwei are relatively short of educational resources, especially in terms of teaching staff, teaching equipment, and practical training conditions, which cannot be compared with institutions in developed regions such as the Pearl River Delta. This puts students at a disadvantage in terms of education quality and career development opportunities, and teachers face greater teaching pressure as they must strive to meet students' learning needs with limited resources. For schools, this inequality further limits their development potential and makes it more difficult to improve the overall level of school management.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The policy of paired assistance for vocational education has been implemented for many rounds, which has played a positive role in promoting educational equity. For example, Shanwei Vocational and Technical College has obtained more teaching equipment and financial support through these policies,

established a modern training base, and carried out many teaching exchanges and cooperation with vocational colleges in the Pearl River Delta region through resource sharing platforms. These measures have effectively improved the teaching quality, provided students with more practical training and employment opportunities, and narrowed the gap with developed regions.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

Regional economic disparities are significant, and vocational colleges in underdeveloped areas are unable to obtain sufficient financial support and policy preferences, resulting in weak teaching facilities and weak teachers. This not only affects the quality of education, but also makes it difficult to ensure educational equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent. Students can conduct remote practical training to make up for the limitations of insufficient actual equipment, thus promoting educational equity.

**4. What do you think are the key measures to solve the problem of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

The key is to promote the sharing of educational resources among regions, improve the quality of teachers, and promote the widespread application of educational technology. Specific measures include: the government should increase policy and financial support for underdeveloped regions to ensure that schools in these regions have access to sufficient resources; at the same time, schools should strengthen cooperation with enterprises, increase practical training opportunities, and improve the quality of education through teacher training. In addition, promote information-based teaching methods, through online education platforms and

distance learning, to ensure that every student has equal access to high-quality educational resources.

**5. How do you think the government, schools and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

Stakeholders such as the government, schools, and enterprises should work together to promote the sustainable equity of higher vocational education in Guangdong Province. The government should ensure the equity of resource allocation through policy guidance and financial support; schools should actively improve the quality of education and establish more training bases and employment platforms through cooperation with enterprises; enterprises and social organizations can help students better adapt to workplace needs by providing internship opportunities and technical support. All parties should strengthen coordination in resource sharing, school-enterprise cooperation, and policy implementation to ensure that education equity policies can be truly implemented.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In addition to resource and policy support, attention should also be paid to students' mental health and career development guidance. Higher vocational education is not just about skills training, but should also focus on the all-round development of students and help them build good professionalism and psychological qualities. Schools should provide more career planning services and psychological counseling to help students form correct career values and a healthy mental state in addition to skills, so as to better adapt to the challenges of society and the workplace. This is also crucial to achieving sustainable equity in education.

### Interviewer 5

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers or schools?**

The inequality of higher vocational education in Guangdong Province is mainly reflected in the imbalance of resource allocation between regions and the low social awareness of vocational education. The region where Yangjiang Vocational and Technical College is located is relatively backward in terms of economic development, which makes it difficult for it to compete with schools in the developed Pearl River Delta in terms of teaching resources, teaching staff, and campus environment. This imbalance of resources means fewer learning opportunities and career development support for students, as well as greater teaching burdens and professional pressures for teachers. For schools, this inequality limits their ability to attract outstanding talents and improve the quality of education.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The strategy of “strengthening the province with vocational education” implemented by Guangdong Province and the paired assistance policy for underdeveloped areas have effectively promoted the sustainable equity of higher vocational education. For example, through these policies, Yangjiang Vocational and Technical College has received more provincial financial support to improve teaching conditions and introduce outstanding teachers. In addition, the college has also established cooperative relationships with high-quality vocational colleges in the Pearl River Delta region to share teaching resources and practical training opportunities. These measures have significantly improved the school's overall education level and provided students with more equitable development opportunities.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province?**

**What barriers might these challenges pose to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

The declining birth rate and the decrease in the number of students have brought challenges to the survival and development of vocational colleges in underdeveloped areas. In addition, regional economic disparities and the outflow of high-level talents have further weakened the educational resources in these areas and affected the realization of educational equity. However, the use of artificial intelligence and virtual simulation technology can effectively alleviate these problems. Through virtual laboratories and online courses, students in remote areas can also access high-quality educational resources. At the same time, the setting of personalized learning paths can also improve students' learning effects and teachers' teaching efficiency.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

First, the government should promote the integration of educational resources among regions, encourage high-quality colleges and universities to cooperate with schools in underdeveloped areas, and share teaching resources and training bases. Second, schools should strengthen cooperation with enterprises, improve the fit between teaching content and actual industry needs, and improve teachers' professional capabilities through diversified teacher training programs.

In order to implement these measures, the government needs to provide continuous financial support, the society needs to actively participate, and the school needs to innovate its internal management mechanism.

**5. How do you think the government, schools and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

Promoting sustainable equity in higher vocational education in Guangdong Province requires joint efforts from the government, schools, enterprises and social organizations. The government should play a leading role in ensuring equity distribution of educational resources through policy formulation and financial support. Schools need to actively participate in regional cooperation and school-enterprise cooperation to continuously improve their teaching quality and school management level. Enterprises and social organizations can help students gain richer career experience and skills training by providing practical opportunities and technical support. All parties should establish a long-term and effective communication mechanism to ensure coordinated advancement in resource sharing, policy implementation and educational innovation.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

As teachers, we must constantly learn and adapt to new technologies, apply technologies such as artificial intelligence and virtual reality to teaching, and improve teaching effectiveness. At the same time, we must focus on cultivating students' comprehensive quality and innovation ability to enhance their competitiveness in the future job market. I hope that the government and society can pay more attention to the development of education in underdeveloped areas and jointly create a more equitable and high-quality education environment.

**Interviewer 6**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers or schools?**

The unequity of higher vocational education in Guangdong Province is mainly reflected in regional disparities, uneven distribution of educational resources, and the disconnection between professional settings and market demand. Compared with economically developed regions such as the Pearl River Delta, Maoming has a significant shortage of educational resources, especially in terms of teaching staff and

experimental training equipment, which makes students lack practical opportunities in the learning process and difficult to compete with students in big cities. At the same time, teachers often have to bear more work pressure in such an environment, not only to make up for the lack of resources, but also to ensure the quality of teaching. This inequity also restricts the overall development of the school and affects its improvement in education quality.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The policy of expanding enrollment in higher vocational schools and the policy of paired assistance for vocational education have made positive contributions to promoting the development of higher vocational schools in underdeveloped areas. Through these policies, Maoming Vocational and Technical College has obtained special government funding, which has effectively improved the school's development level, provided students with a better learning and training environment, and improved their professional skills.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

The outflow of high-level talents and uneven distribution of resources make it difficult for vocational colleges in underdeveloped areas to compete with developed areas in terms of education quality. The low social recognition of vocational education makes these regions face huge challenges in attracting high-quality students and teachers, and educational equity is damaged. The use of artificial intelligence and virtual simulation technology can partially solve these problems, but the promotion of these advanced applications also requires financial and technical support from the government, otherwise it will be difficult for higher vocational colleges in underdeveloped areas to promote such advanced technologies.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

1) The government should continue to increase financial support for underdeveloped regions and promote balanced distribution of educational resources among regions;

2) Schools should strengthen cooperation with enterprises to ensure that professional settings are closely aligned with market demand;

3) Promote information-based education platforms and use modern scientific and technological means to improve teaching quality and educational equity.

The implementation of these measures requires continued support from the government, active participation from enterprises, and independent innovation from schools.

**5. How do you think the government, schools and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

Promoting sustainable equity in higher vocational education requires close cooperation between the government, schools, enterprises and social organizations. The government should play a guiding and supporting role, and ensure equity distribution of resources through policy regulation and financial support; schools should take the initiative to improve their teaching quality and management level, strengthen cooperation with enterprises, and ensure seamless connection between education and the employment market; enterprises should actively participate in school-enterprise cooperation, provide internship and employment opportunities, and help students better integrate into the workplace. All parties should strengthen coordination and cooperation in resource sharing, education innovation and policy implementation, and jointly promote the realization of educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In the process of promoting educational equity, special attention should also be paid to the professional development and innovation ability of teachers. Teachers are the key factor in achieving educational equity. Only by continuously improving the professional level and innovation ability of teachers can the continuous improvement of education quality be ensured. The government and schools should provide teachers with more training opportunities and professional development support to stimulate teachers' teaching enthusiasm and innovation awareness. In addition, social publicity on educational equity issues should be strengthened to increase the recognition and attention of vocational education in the whole society, which is also crucial to the realization of educational equity.

#### **Interviewer 7**

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers or schools?**

Differences in resource allocation between regions, uneven funding between schools, and insufficient policy support are the main educational inequalities faced by higher vocational education in Guangdong Province. Especially in remote areas such as Heyuan, educational resources are relatively scarce, which puts students at a disadvantage in terms of learning equipment and practical opportunities. This inequality not only affects the quality of student training, but also increases the work pressure of teachers and restricts their career development. At the same time, it is difficult for schools to attract and retain high-quality teachers in such an environment, further exacerbating the gap in education quality.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

Policies such as the "Double High Plan" and "Innovation and Strengthening School Plan" implemented by Guangdong Province have effectively supported high-quality vocational colleges in underdeveloped areas. Through these policies, Heyuan

Vocational and Technical College has obtained special government funding support, improved laboratories and teaching equipment, established a number of key majors, and effectively improved the quality of education and student employment rate.

**3. In the process of promoting sustainable equity, what major challenges do you think higher vocational education in Guangdong Province faces? What obstacles might these challenges bring to achieving equity? Can the use of cutting-edge technologies such as artificial intelligence and virtual simulation help solve the problem of educational equity?**

There is a significant gap in regional economic development. Underdeveloped areas lack vocational education resources, making it difficult to provide the same education quality as developed areas. The mismatch between vocational education and the digital economy, coupled with the low social recognition of vocational education, makes it difficult to achieve educational equity. However, the application of cutting-edge technologies such as artificial intelligence and virtual simulation can solve these problems to a certain extent. Through virtual simulation technology, students can remotely access advanced experimental equipment and practical training courses; artificial intelligence can provide personalized learning guidance to help students make up for their lack of knowledge and skills, thereby achieving higher education in areas with insufficient educational resources. equity.

**4. What do you think are the key measures to solve the problem of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

The key to solving the problem of sustainable equity in higher vocational education in Guangdong Province is to improve and optimize the resource allocation mechanism and ensure the transparency and equity of resource allocation. It is also necessary to strengthen the training of education managers and improve management capabilities and levels to better implement equity education policies. In addition, the government should increase support for underdeveloped regions and provide more funds and resources, especially in infrastructure construction and teacher training, to narrow the urban-rural education gap.

**5. How do you think the government, schools and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

To promote the sustainable equity of higher vocational education in Guangdong Province, the government should play a leading role to ensure the equity implementation of policies and the rational allocation of resources; schools should continuously improve their teaching level, actively cooperate with enterprises and other educational institutions, and provide more practical training and employment opportunities; enterprises should actively participate in vocational education, provide technical support and practical opportunities, and help schools cultivate talents that meet market demand. All parties should strengthen cooperation in policy implementation, resource sharing and educational innovation, and establish a multi-party collaborative mechanism to ensure the continued realization of educational equity.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

While promoting educational equity, we also need to pay attention to students' personalized development and mental health education. Vocational education should not only focus on skills training, but also cultivate students' comprehensive qualities and help them establish a correct career and life outlook. In addition, schools should strengthen communication with families and society to form a joint force to jointly create a good environment for students' all-round development. The government and all sectors of society should also increase their attention and recognition of vocational education and provide more support and opportunities for students' future development.

### Interviewer 8

**1. What educational inequalities do you think exist in higher vocational education in Guangdong Province? What impact do these issues have on students, teachers or schools?**

I believe that the main educational inequalities in Guangdong Province's higher vocational education include regional differences, unequal resource allocation, and diversity in student backgrounds. These issues have led to inequalities in educational opportunities, teaching quality, and employment opportunities for students. For example, schools in economically developed areas usually have access to more educational resources and policy support, while schools in remote areas face challenges such as insufficient funding and weak teaching staff. This inequality directly affects students' learning outcomes and future development, while also bringing work pressure and career development bottlenecks to teachers. For schools, unequity resource allocation will limit their overall school management level and social influence.

**2. Which existing policies do you think have played an effective role in promoting sustainable equity in higher vocational education in Guangdong Province? Can you share some successful cases?**

The current "Double High Plan" (high-level vocational schools with Chinese characteristics and professional construction plan) and the vocational education paired assistance policy have played a positive role. For example, Guangdong Province has strengthened its support for schools with better education quality in underdeveloped areas through the "Double High Plan", so that these schools can receive more resource investment, thereby improving the quality of school operation and educational equity. Some schools have made significant progress through this policy. For example, higher vocational colleges in some prefecture-level cities have significantly improved their professional development and student employment rate.

**3. In the process of promoting sustainable equity, what do you think are the main challenges facing higher vocational education in Guangdong Province? What barriers might these challenges pose to achieving equity? Can the use of**

**cutting-edge technologies such as artificial intelligence and virtual simulation help solve the issue of educational equity?**

Uneven economic development has a direct impact on the allocation of vocational education resources. Due to insufficient funding and policy support, vocational schools in underdeveloped areas find it difficult to provide high-quality education services. The loss of teachers has also led to a continuous decline in the quality of education in these areas, seriously affecting educational equity. These challenges have led to differences in education quality between different schools and hindered the realization of equity. The use of cutting-edge technologies such as artificial intelligence and virtual simulation can alleviate these problems to a certain extent.

**4. What do you think are the key measures to address the issue of sustainable equity in higher vocational education in Guangdong Province? What support or resources do you think are needed to implement these measures?**

I believe that the key to solving the problem of sustainable equity in higher vocational education in Guangdong Province lies in increasing the rational allocation of educational resources, especially in the investment in underdeveloped areas. At the same time, improving the overall quality of the teaching staff and promoting the professional development of teachers are also necessary conditions for achieving equitable education. In order to implement these measures, the government needs to increase financial investment, schools need to strengthen teacher training, and all sectors of society need to provide multi-faceted support and cooperation.

**5. How do you think the government, schools and other stakeholders should work together to promote sustainable equity in higher vocational education in Guangdong Province? In what areas should all parties strengthen cooperation or coordination?**

The government should strengthen policy guidance and resource allocation to ensure equity distribution of educational resources in various regions. Schools should actively participate in policy implementation, optimize resource allocation through internal management, and improve the quality of education. Other stakeholders, such

as enterprises and social organizations, can provide schools and students with more practical opportunities and resource support through industry-education integration and school-enterprise cooperation. All parties should strengthen cooperation and coordination in policy formulation, resource allocation and practical activities, and jointly promote the sustainable equity of higher vocational education.

**6. In addition to the above questions, what other important additional information or opinions do you want to share?**

In addition to the above-mentioned aspects, I believe that the equity of higher vocational education should also focus on students' mental health and equal development opportunities. In the process of promoting educational equity, we should not only pay attention to the allocation of material resources, but also pay attention to students' psychological growth and long-term planning for career development. At the same time, the change of society's concept of vocational education and the improvement of its recognition are also important links in achieving educational equity.

Appendix E  
Certificate of English

**BS  
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RAJABHAT UNIVERSITY

This is to certify that

***Mr. Gao Shanzhu***

Achieved BSRU English Proficiency Test (BSRU-TEP) level

**C2**

Given on 9<sup>th</sup> August 2022



(Assistant Professor Dr Kulsirin Aphiratvoradej)  
Director

## Appendix F

### The Document for Acceptance Research

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**LETTER OF ACCEPTANCE**

Dear author: GaoShanZhu, Thanida Sujarittham, Sunate Thaveethavornsawat, Sarayuth Sethakhajorn, QiujiaMin

It's a great pleasure to inform you that, after the peer review process, your article "Investigation and Analysis on the current situation of equity in Higher Vocational Education in Guangdong Province" has been accepted and considered for publication in the **Pakistan Journal of Life and Social Sciences**.

The article will be Published in **Volume 22 , 2024 .**

Please make sure to pay the publication fee within five business days. If you have any further questions, please do not hesitate to contact us.

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## RESEARCH ARTICLE

## Investigation and Analysis on the Current Situation of Equity in Higher Vocational Education in Guangdong Province

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## ABSTRACT

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In order to investigate the current status and existing problems of equity in higher vocational education in Guangdong Province, this study used questionnaire survey and SPSS software to quantitatively analyze the perception of higher vocational students on the current status of equity in higher vocational education in Guangdong Province; semi-structured interviews were used to qualitatively analyze the opinions put forward by the respondents. The results show that students in higher vocational colleges in Guangdong Province mainly come from low- and middle-income or poor families. Their satisfaction with higher vocational education, higher vocational education in Guangdong Province, and educational equity in schools is at a medium-low level. They generally believe that there are large gaps in the development of higher vocational education in different regions, large gaps in the allocation of educational resources, some local governments do not attach importance to higher vocational education, and social prejudice and discrimination are serious. They do not have high expectations for their future development. The results of this study provide a current reference for education policy makers, educational institutions, and academia to further improve the fairness and quality of higher vocational education, thereby promoting the overall progress and harmonious development of society.

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## 1. INTRODUCTION

## 1.1 Introduce the problem

As a fundamental issue related to the future development of a country, educational equity serves not only as an important foundation for social equity but also as a critical consideration in the decision-making of higher vocational education. Globally, the pursuit of educational equity remains a key focus of contemporary society, with most countries incorporating it into their strategic agendas. Article 26, paragraph 1, of the *Universal Declaration of Human Rights* (United Nations, 1948) states, "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and vocational education shall be generally available. Higher education shall be equally accessible to all on the basis of merit." Furthermore, the *International Covenant on Economic, Social and Cultural Rights* (United Nations, 1966) recognizes the right to equal education as a fundamental human right, rooted in the inherent dignity and equality of all people and its interconnection with other basic human rights.

As a nation prioritizing educational equity, China has worked diligently to achieve this goal. Since the founding of the People's Republic of China, the government has emphasized "opening up education to workers and farmers." In the 21st century, the *National Medium- and Long-Term Education Reform and Development Plan (2010-2020)* (Ministry of Education, 2010) identified "promoting educational equity as a basic national education policy" and "improving quality as the core task of education reform and development." These efforts have significantly advanced China's educational system, with substantial improvements in educational equity. From the widespread illiteracy of the past to the

near-universal availability of compulsory education and the establishment of a multi-level education system—including junior high school, high school, and vocational education—China has made historic progress. Today, the number of college students in China ranks first globally, and the average years of education per capita have risen from 1.6 years in 1949 to 10.9 years in 2022 (Ministry of Education, 2022). These achievements underscore China's dedication to promoting educational equity.

The *Opinions on Promoting the High-quality Development of Modern Vocational Education* (General Office of the CPC Central Committee & State Council, 2022) emphasizes that "as an important part of the national education system and human resources development, vocational education shoulders the important responsibilities of cultivating diverse talents, inheriting technical skills, and promoting employment and entrepreneurship." The newly revised *Vocational Education Law of the People's Republic of China* (CPC Central Committee & State Council, 2022) further asserts that "vocational education is a type of education that has the same importance as general education." Despite its elevated status in laws and regulations, vocational education faces imbalances in its practical development. For decades, some regions have regarded vocational colleges as a "low-end version" of general education, prioritizing general education over vocational training. This misconception has led to discrimination and bias from some local governments, as well as a skewed allocation of educational resources favoring other types of education.

## 1.2 Explore importance of the problem

The issue of fairness in higher vocational education is critical, particularly in Guangdong Province, one of China's most economically developed regions. Educational fairness plays a fundamental role in promoting social equity and mobility. Higher vocational education serves as a vital pathway for students from low-income and rural families to access quality education, acquire technical skills, and enhance their socioeconomic status. Addressing inequalities in this system ensures that all students, regardless of their background, have equal opportunities to succeed and contribute to society (United Nations, 1966; Ye & Fan, 2021).

Regional economic disparities in Guangdong Province further highlight the importance of educational equity. While the Pearl River Delta thrives as an economic powerhouse, the eastern, western, and northern regions lag behind in development. Unequal access to quality higher vocational education exacerbates these regional inequalities, restricting underdeveloped areas from cultivating skilled labor crucial for local economic growth. Bridging this gap through fair educational practices can significantly impact regional balance and prosperity (Xu, 2020; Guangdong Provincial Department of Education, 2023).

Workforce development also hinges on equitable vocational education. By focusing on practical and technical training, higher vocational institutions play a key role in meeting the demands of Guangdong's diverse and expanding economy. Ensuring fairness in access and resource allocation not only addresses labor shortages but also enhances overall productivity and competitiveness. Equitable vocational education systems are vital for developing the skilled workforce necessary for sustained economic growth (General Office of the CPC Central Committee & State Council, 2022).

Moreover, disparities in educational resources, such as funding, infrastructure, and faculty quality, reveal inefficiencies in policy implementation. Tackling these issues can guide more effective resource distribution and policy reforms, ensuring balanced development across all regions of the province. Fairness in vocational education is essential for maximizing the impact of public investment in education and achieving long-term sustainability (Luo, 2019; Ministry of Education, 2010).

On a broader scale, Guangdong's success in achieving fairness in vocational education could serve as a model for other regions in China and globally. Promoting equitable access to education aligns with the United Nations' Sustainable Development Goals, particularly Goal 4, which emphasizes inclusive and equitable quality education for all (United Nations, 1948; Song, Vongurai, & Duangkanong, 2023). This makes the pursuit of fairness in vocational education not only a regional but also a global priority.

Finally, addressing educational inequalities has profound implications for students' aspirations and societal perceptions. Unresolved disparities can negatively influence students' perceptions of fairness and limit their future ambitions. Moreover, societal bias and stigma toward vocational education may persist, further marginalizing these students. By ensuring equity, the system can enhance students' confidence and encourage broader societal recognition of vocational education as a valuable and equal alternative to traditional academic pathways (Zhang & Lei, 2023).

In summary, addressing the issue of fairness in Guangdong's higher vocational education system is essential for fostering social equity, balancing regional development, meeting workforce demands, and improving the effectiveness of educational policies. It also has the potential to influence national and global efforts toward creating inclusive and equitable educational environments.

### 1.3 Describe relevant scholarship

According to the *Guangdong Provincial Higher Vocational Education Quality Annual Report (2023)*, Guangdong Province has 95 independent higher vocational colleges, with 75% located in the Pearl River Delta, 7% in eastern Guangdong, 10% in western Guangdong, and 5% in northern Guangdong (Guangdong Provincial Department of Education, 2023). Li et al. (2016) further demonstrated that the proportion of higher vocational colleges and students in eastern, western, and northern Guangdong is lower than the GDP share of these regions, highlighting an imbalance between the development of higher vocational education and regional economic levels. This uneven distribution of educational resources within the province directly impacts the fairness of higher vocational education.

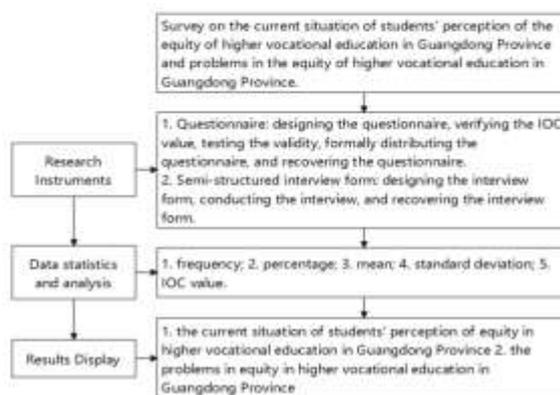
Xu (2020) highlighted that although Guangdong Province has implemented measures such as requiring higher vocational colleges in developed areas to provide counterpart assistance, supporting the development of higher vocational education in eastern, western, and northern regions, and conducting targeted poverty alleviation initiatives by leveraging regional and professional advantages, there is a lack of comprehensive development plans and policy support for higher vocational education in economically underdeveloped areas. This deficiency has led to inadequate school conditions in the east, west, and north of Guangdong and significant disparities in development between these areas and the Pearl River Delta, further widening the regional development gap. Similarly, Zhang (2017) found that the Guangdong Provincial Government's macro-control efforts in higher vocational colleges have been limited to ensuring that each prefecture-level city has at least one vocational college, with insufficient follow-up measures for development and quality control, resulting in inconsistent quality across institutions. Additionally, Luo (2019) noted that the province's funding for higher vocational education does not align with its developmental needs. This mismatch has resulted in inadequate resources for higher vocational colleges, making it challenging to cultivate high-quality, multi-skilled talents, thereby affecting the sustainable development and overall quality improvement of education.

Jin (2010) argued that the current role of local governments in the development and management of higher vocational education is either inaccurate or unreasonable, significantly hindering the progress of higher vocational education and reducing management efficiency. Similarly, Luo (2019) noted that local governments in underdeveloped areas of Guangdong Province have yet to establish effective management mechanisms for higher vocational education. These governments often lack a clear understanding of the critical role higher vocational education plays in regional economic development and scientific and technological advancement. Additionally, support for the development of higher vocational education has not been adequately integrated into the overall planning of economic and social development in most regions.

In summary, the main unfair problems in Guangdong Province's higher vocational education are imbalanced regional layout, insufficient policy support, poor policy implementation, and insufficient investment in higher vocational education in underdeveloped areas. The existence of these problems has seriously affected the fairness and quality of Guangdong Province's higher vocational education, and urgently needs the attention and improvement of the government and all sectors of society.

### 1.4 State hypotheses and their correspondence to research design

To examine the current status and existing challenges regarding equity in higher vocational education in Guangdong Province, this study employed research tools including questionnaires and semi-structured interviews. Additionally, experts were invited to evaluate the research instruments to ensure their validity and reliability. The research framework guiding this study is presented in Figure 1.



**Figure 1: Research framework**

The objective of this study is to investigate and study the current equity situation and existing problems in higher vocational education in Guangdong Province.

## 2. METHOD

The study surveyed students from higher vocational colleges in the Pearl River Delta, eastern Guangdong, western Guangdong, and northern Guangdong regions of Guangdong Province. Additionally, semi-structured interviews were conducted with administrative staff and teachers from these institutions. The research utilized questionnaires and semi-structured interview outlines as primary tools. An online questionnaire survey was administered to students, with the data analyzed quantitatively using SPSS software. Semi-structured interviews were also conducted online to gather qualitative insights. The findings of this study provide valuable perspectives for advancing research on educational equity, offer a scientific foundation for addressing fairness issues in higher vocational education, and assist government departments in gaining a deeper understanding of these challenges to inform policy and practice.

### 2.1 Participant (subject) characteristics

#### 2.1.1 Total sample for questionnaire survey

A stratified sampling method was employed to select two vocational colleges from each of the 4 regions in Guangdong Province: the Pearl River Delta, East Guangdong, West Guangdong, and North Guangdong. This approach resulted in a total of eight vocational colleges. The selected schools in the Pearl River Delta were Shenzhen Vocational and Technical College and Guangdong Light Industry Vocational and Technical College. In East Guangdong, Jieyang Vocational and Technical College and Shanwei Vocational and Technical College were chosen. For West Guangdong, Yangjiang Vocational and Technical College and Maoming Vocational and Technical College were included. In North Guangdong, Heyuan Vocational and Technical College and Qingyuan Vocational and Technical College were selected. The total population for the questionnaire survey consisted of 142,051 students from these eight vocational colleges.

#### 2.1.2 Total sample for semi-structured interviews

The semi-structured interview sample included 5,971 teachers and 2,474 administrators from the same eight vocational colleges.

### 2.3 Sampling procedures

#### 2.3.1 Sample group for questionnaire survey

Using Krejcie and Morgan's (1970) sampling table, 384 students were randomly selected from the eight vocational colleges for the questionnaire survey. To improve the reliability and accuracy of the data, the sample size was increased to 400 students.

### 2.3.2 Sample group for semi-structured interviews

A purposive sampling method was applied to select 8 full-time teachers and 8 administrative staff from the 8 vocational colleges for semi-structured interviews.

There are the Criterias for Administrative Staff: Administrative staff were required to hold a department deputy position or higher, possess at least 5 years of administrative management experience in higher vocational colleges, and be well-versed in the laws, regulations, and local policies governing higher vocational education.

There are the Criterias for Teachers: Teachers were required to hold the title of associate professor or higher and have at least 5 years of experience in teaching or student management in higher vocational colleges.

### 2.3.3 Measures and covariates

#### 1) Research instrument

##### 1. Questionnaire

The questionnaire was distributed to respondents online, and the collected data were statistically analyzed to capture students' perceptions of fairness in higher vocational education in Guangdong Province and identify existing issues. The questionnaire consisted of two main parts:

**Part 1:** Basic demographic information, including gender, registered residence, family economic status, and the region where the higher vocational college is located.

**Part 2:** Perceptions of educational fairness. Using a Likert Scale, the survey assessed respondents' views on:

- a. Educational fairness within their school.
- b. Fairness in higher vocational education across Guangdong Province.
- c. Overall fairness in higher vocational education.
- d. Their expectations for their personal future.

##### 2. Semi-structured interview outline

To complement the questionnaire and obtain deeper insights, a semi-structured interview outline was designed for administrative staff and teachers at higher vocational colleges. The interviews aimed to reveal the current status and challenges of equity in higher vocational education in Guangdong Province. The Core Interview Questions are as follows:

- a. Are there unfairness issues in higher vocational education in Guangdong Province?
- b. What specific educational unfairness problems exist?
- c. What are the reasons behind these issues?
- d. How do these problems impact students?

The details about questionnaire and interview are shown as Table 1.

**Table 1: Key points in the research**

	Method	Purpose	Components
1	Questionnaire	Assess students' perceptions of fairness in higher vocational education.	- <b>Part 1:</b> Demographic information (gender, residence, economic status, college location). - <b>Part 2:</b> Perception of fairness in school, provincial fairness, overall fairness, and future expectations.
2	Semi-Structured Interviews	Gain in-depth insights into fairness challenges from administrative staff and teachers.	- Are there unfairness issues in higher vocational education?  - What specific problems exist? - What are the causes of these issues? - How do these issues impact students?

## 2) Data collection

The online questionnaire survey was conducted using the WJX platform, resulting in the collection of 400 valid responses.

semi-structured interviews were conducted with 8 administrative staff and 8 teachers, yielding a total of 16 completed interview forms after the sessions.

## 3) Data analysis

The questionnaire data were analyzed using SPSS, focusing on frequency, percentage, mean, and standard deviation. This analysis covered respondents' basic demographic information and their perceptions of educational equity.

A qualitative analysis was conducted on the content of the semi-structured interviews to explore the current status of equity in higher vocational education in Guangdong Province.

## 4) Reliability and validity

Before collecting questionnaire data and conducting focus interviews, the researchers invited five experts from Thai universities with expertise in education, sustainable development, and linguistics research to conduct an Item-Objective Consistency (IOC) assessment of the questionnaire and interview forms. The IOC values for all items were  $\geq 0.6$ , indicating that all items met the required standard.

Prior to the official distribution of the questionnaire, the researchers conducted a preliminary reliability test. A random sample of 20 eligible participants was invited to complete the questionnaire. The Cronbach's  $\alpha$  coefficient for the preliminary survey was 0.815, indicating acceptable reliability.

After collecting 400 valid questionnaires, the researchers assessed the reliability and validity of the data. The Cronbach's  $\alpha$  coefficient was 0.923, demonstrating excellent reliability based on the evaluation standard of Cronbach's  $\alpha \geq 0.8$ . The Kaiser-Meyer-Olkin (KMO) test score was 0.909, indicating that the data were highly suitable for extracting information, reflecting strong validity according to the evaluation standard of  $KMO \geq 0.8$ .

## 3. RESULTS

### 3.1 Recruitment

Table 1 shows that among the students who participated in the survey, the largest number of people were registered in rural areas, accounting for 66.5%, followed by cities and towns, accounting for 17.5% and 16% respectively. Family economic conditions are mainly concentrated in two levels: ordinary and poor. Ordinary families accounted for the highest proportion, reaching 67%, and poor families accounted for 23.5%. Rich families accounted for the lowest proportion, only 1%. Middle-class families accounted for 8.5%. Overall, low- and middle-income families accounted for the vast majority.

**Table 1: Demographic and general data table (N=400)**

Project	Options	Frequency	Percentage (%)	Cumulative percentage (%)
Gender	Male	113	28.25	28.25
	Female	287	71.75	100
Place of residence	City	70	17.5	17.5
	Township	64	16	33.5
	Rural	266	66.5	100
Family's financial situation	Rich	4	1	1
	Middle class	34	8.5	9.5
	Ordinary	268	67	76.5
	Poor	94	23.5	100
The region where the vocational	Pearl River Delta	166	41.5	41.5
	East Guangdong	51	12.75	54.25
	Western Guangdong	86	21.5	75.75

college you are attending is located	Northern Guangdong	97	24.25	100
<b>Total</b>		400	100	100

Through interviews, it learned that the student aid policy provides strong financial support for the education of students in rural areas, poor students, and special students. In 2023, approximately 10%-15% of new students will be admitted through the green channel, 23%-25% of students will apply for scholarships and student loans, and 20% of needy students will reduce their daily financial burden by applying for on-campus work-study positions.

In summary, the study found that the majority of students in higher vocational colleges come from rural families, ordinary and poor families, and higher vocational colleges provide more affordable educational opportunities for the above students.

### 3.2 Statistics and data analysis

#### 3.2.1 Perception of the current status of school education equity

According to the statistical results in Table 2, the highest score is "I have equal access to education" ( $\bar{x}=3.37$ ), followed by "the school provides necessary scholarships and grants to help students in need complete their studies" ( $\bar{x}=3.27$ ), and the lowest score is "the school provides us with a variety of overseas university study and training programs to choose from" ( $\bar{x}=2.49$ ).

**Table 2: Perception of educational equity in the school you attend (N=400)**

	Project	$\bar{x}$	S.D.	Level	Order
1	I have equal opportunity in school	3.37	1.31	Medium	1
2	My classmates of different ethnicities, genders, and socioeconomic backgrounds have equal access to educational resources at school.	3.13	1.45	Medium	3
3	The school's educational and teaching conditions (teachers, internship and training equipment, books and materials, etc.) can help me to carry out theoretical and practical learning well.	3.02	1.27	Medium	4
4	The school provides us with advanced training and teaching conditions such as artificial intelligence and virtual simulation	2.65	1.30	Medium	7
5	The school provides necessary scholarships and grants to help students with difficulties complete their studies	3.27	1.30	Medium	2
6	The school provides us with high-quality internship opportunities	2.75	1.39	Medium	5
7	The school provides us with a variety of overseas university study and training programs to choose from	2.49	1.40	low	8
8	The cost of higher vocational education does not constitute a financial burden for me	2.66	1.23	Medium	6
<b>Total</b>		2.92	1.33	Medium	

Through interviews, it learned that the main educational unfairness problems in Guangdong Province's higher vocational education include uneven regional development, differences in admissions policies and uneven distribution of educational resources, which have led to a large gap in the development of higher vocational colleges between economically developed and underdeveloped regions, a large gap in admission opportunities, and a large gap in the development of undergraduate and higher vocational education.

In summary, the study found that higher vocational colleges, especially those in underdeveloped areas, can only provide basic educational and teaching conditions. They are generally unable to meet students' needs in terms of obtaining advanced teaching conditions, high-quality internship opportunities, international projects and other higher educational requirements. As a result, students' perception of educational fairness in their schools is at a medium level.

#### 3.2.2 Perception of the current status of equity in Guangdong's higher vocational education

According to the statistical results in Table 3, the highest score is "The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education" ( $\bar{x}=3.22$ ), followed by "I am satisfied with the current development of higher vocational

education in Guangdong Province" ( $\bar{x}$  = 2.51), and the lowest score is "The local government of Guangdong Province attaches great importance to the development of higher vocational education" ( $\bar{x}$  = 2.06).

**Table 3: Perception of the current status of fairness in Guangdong's higher vocational education (N=400)**

	Project	$\bar{x}$	S.D.	Level	Order
1	There is no big development gap between vocational colleges in the eastern, western and northern regions of Guangdong and those in the Pearl River Delta region.	2.23	1.17	low	3
2	There is no unfairness in the allocation of higher vocational education resources by the Guangdong Provincial Government	2.08	1.21	low	4
3	The local governments of Guangdong Province attach great importance to the development of higher vocational education	2.06	1.26	low	5
4	The Guangdong Provincial Government should formulate more policies to support the development of higher vocational education	3.22	1.48	Medium	1
5	I am satisfied with the current development of higher vocational education in Guangdong Province	2.51	1.29	Medium	2
	<b>Total</b>	2.42	1.28	low	

Through interviews, it was learned that the main educational unfairness problems in Guangdong Province's higher vocational education include uneven regional development, differences in enrollment policies, and uneven distribution of educational resources, which have led to a large gap in the development of higher vocational colleges between economically developed and underdeveloped regions, a large gap in admission opportunities, and a large gap in the development of undergraduate and higher vocational education. These problems directly affect students' learning opportunities and development paths. At the same time, Song et al. (2023)'s research shows that management, facilities, teaching quality, academic support, and image have a significant impact on satisfaction and loyalty.

In summary, the study found that the students' satisfaction with the current development status of higher vocational education in Guangdong is at a medium level. They generally believe that there is a large development gap between higher vocational colleges in the east, west and north of Guangdong and those in the Pearl River Delta, unfair allocation of educational resources, and some local governments' lack of attention to the development of higher vocational education. At the same time, they strongly call for more policies to support the development of higher vocational education.

### 3.2.3 Perception of the current status of equity in higher vocational education in China

According to the statistical results in Table 4, the highest score is "the similar concept proposed by national laws and policies that 'vocational education and general education are two different types of education with equal importance' has enhanced my sense of identity with higher vocational education" ( $\bar{x}$  = 2.85), followed by "the country attaches importance to the development of higher vocational education" ( $\bar{x}$  = 2.78), and the lowest score is "there is no prejudice or discrimination against higher vocational education in society" ( $\bar{x}$  = 2.33).

**Table 4: Perception of the current status of fairness in higher vocational education in China (N=400)**

	Project	$\bar{x}$	S.D.	Level	Order
1	My relatives and friends generally have a positive attitude towards higher vocational education	2.66	1.25	Medium	3
2	There is no prejudice or discrimination against higher vocational education in society	2.33	1.13	low	5
3	I believe that the status of higher vocational colleges is equal to that of undergraduate colleges	2.59	1.16	Medium	4
4	The state attaches great importance to the development of higher vocational education	2.78	1.37	Medium	2
5	The concept that "vocational education and general education are two different types of education and have equal importance" put forward by national laws and	2.85	1.37	Medium	1

	policies has enhanced my recognition of higher vocational education.				
	<b>Total</b>	2.64	1.26	Medium	

Through interviews, it learned that although the social status and development speed of higher vocational colleges have improved under the attention of the state, they are still constrained by the uneven distribution of educational resources, resulting in limited opportunities for higher vocational students to obtain high-quality education, hindered career development of teachers, and affected teaching quality of higher vocational colleges, thus affecting society's evaluation of higher vocational college students.

In summary, the study found that the attitudes of the interviewed students and their relatives and friends towards higher vocational education are at a medium level, and they still feel strongly about the prejudice and discrimination against higher vocational education in society.

### 3.2.4 Personal future expectations

According to the statistical results in Table 5, the highest score is "receiving vocational education is conducive to future job promotion and salary increase" ( $\bar{x}$  = 2.9), followed by "I can get equal employment opportunities with those with general education" ( $\bar{x}$  = 2.86), and the lowest score was "I have access to equal employment opportunities with general education" ( $\bar{x}$  = 2.86).

**Table 6: Personal future expectations (N=400)**

	Project	$\bar{x}$	S.D.	Level	Order
1	I have the opportunity to study undergraduate	2.78	1.37	Medium	4
2	I can get equal employment opportunities with general education	2.86	1.34	Medium	2
3	I can get the same financial benefits as a general education	2.75	1.36	Medium	5
4	Receiving vocational education is beneficial to future job promotion and salary increase	2.90	1.37	Medium	1
5	You will not be discriminated against at work because of your educational level	2.84	1.37	Medium	3
	<b>Total</b>	2.82	1.36	Medium	

Through interviews, it learned that employers, including government departments, generally set excessively high educational qualifications when recruiting, resulting in higher vocational students failing to meet basic educational requirements, limiting their employment scope, and causing them to have difficulty finding employment.

In summary, the study found that the expectations of the interviewed students for future employment were at a medium level, and they expressed concerns about the opportunities to further improve their academic qualifications and the academic discrimination they might face in future employment.

## 4. DISCUSSION

### 4.1 Conclusion and discussion

This study investigated the actual perception of students from higher vocational colleges in Guangdong Province on the current status of fairness in higher vocational education in Guangdong Province, revealing the current status and existing problems of fairness in higher vocational education in Guangdong Province.

1. Most students in higher vocational colleges come from rural areas, and their families are mostly in the middle-low income or poverty level. This highlights the key role of higher vocational colleges in providing affordable education, promoting social mobility and promoting educational equity, and providing a platform for students from ordinary and poor families to realize their dreams. This role not only reduces the financial burden on students and families, but also creates more opportunities for these students in society. The results of this study are consistent with the research conclusions of Ye Yuting & Fan Weichen (2021). Their research found that about 70% of higher vocational students come from rural areas, becoming the first generation of college students in millions of families, which shows that higher vocational education plays an important role in intergenerational transmission.
2. The interviewed students' perception of educational fairness in their schools is at a medium level. They believe that the schools provide equal admission opportunities, good practical training and teaching conditions, necessary scholarships and grants, and fair distribution of

educational resources. However, they have doubts or dissatisfaction in improving advanced teaching conditions, high-quality internship opportunities, international projects and economic burdens. It is necessary for the government to increase investment in higher vocational colleges to better meet the higher level of learning, research and internship requirements of higher vocational students, and further reduce the economic burden of students' study, so as to improve the overall quality of talent training and meet the society's demand for high-quality technical and skilled talents. The results of this study are consistent with the conclusions of Xu Guiting (2020). Her research proposes that efforts should be made to promote fairness in the higher vocational education process, vigorously strengthen the basic capacity building and management of higher vocational colleges, effectively promote the integration of production and education and school-enterprise cooperation, increase various investments in higher vocational education, focus on improving the quality of talent training and employment, and strive to improve the ability and level of higher vocational education technology to serve economic and social development. Xianquan et al. (2024) proposed that higher vocational colleges should adjust their professional structure in a timely manner and actively adapt to market demand, industrial structure and technological innovation.

3. The students interviewed were satisfied with the overall development status of higher vocational education in Guangdong Province at a medium level, but generally believed that there was a significant development gap between higher vocational colleges in the eastern, western and northern regions of Guangdong and the Pearl River Delta. In addition, students generally believed that there was a large development gap between higher vocational colleges in the eastern, western and northern regions of Guangdong and those in the Pearl River Delta, unfair allocation of educational resources, and some local governments did not attach importance to the development of higher vocational education. The results of this study are consistent with the research conclusions of Xu Xiaoqin (2020). She believed that there was an imbalance between the layout scale of higher vocational colleges in Guangdong Province and educational opportunities, an imbalance between higher vocational education in Guangdong Province and regional economic development, and an imbalance in investment in higher vocational education in Guangdong Province. These problems have affected students' overall perception of educational equity to a certain extent. To this end, students called on the Guangdong Provincial Government to formulate more policies to support higher vocational education in order to improve the fairness and overall quality of vocational education.
4. The overall perception of society towards higher vocational education is at a medium level, and most of the relatives and friends of the respondents have a neutral attitude towards higher vocational education. The respondents believe that social prejudice and discrimination against higher vocational education still exist, and the status of higher vocational colleges is generally considered to be lower than that of undergraduate colleges. The results of this study are consistent with the research conclusions of Zhang Wenbo & Lei Jianming (2023). Their research found that for a long time, vocational education has been affected by social prejudice, resulting in the low social status of professional talents. Despite this, the country's emphasis on the development of higher vocational education and the support of relevant laws and policies have enhanced the respondents' sense of identity with higher vocational education. This shows that national policies have played a positive role in improving the social status and recognition of higher vocational education. The results of this study are consistent with the research conclusions of Hou Cao (2020), who found that the government, as the main provider and distributor of public resources and services, plays a vital role in the issue of educational equity.
5. The interviewed students have medium expectations for future employment. They are concerned about the opportunity to further improve their academic qualifications and the academic discrimination they may face in future employment. They still lack confidence in future development. This reflects that there is still room for improvement in the social recognition and actual benefits of vocational education. The results of this study are consistent with the research conclusions of Zhang Wenzhi (2017). His research found that with the development of the times, government public service units and enterprises and institutions have higher and higher academic requirements for applicants, which directly leads to the general public's contempt for higher vocational education. Therefore, strengthening the social recognition of vocational education and further improving the allocation of educational resources will help improve the overall benefits of vocational education and students' confidence in future development.

The results of this study are of great significance to education policy makers, educational institutions and academia. By recognizing and solving the current problems, the fairness and quality of higher vocational education can be further improved, thus promoting the overall progress and harmonious development of society.

#### 4.2 Recommendations

1. Expand the research sample and geographical scope. It is recommended that future research should not be limited to Guangdong Province, but also cover higher vocational colleges in other parts of China to more comprehensively reflect the current status and problems of equity in higher vocational education across the country. Factors such as economic development level, policy support and cultural background in different regions may have different impacts on students' perception of fairness.
2. Further explore the impact of background differences. This study found that economic background and urban-rural differences have a significant impact on students' perception of educational equity. Future research can further explore the specific mechanisms and paths of these background differences on the perception of educational equity, such as the specific impact of variables such as family income and parents' education level.
3. Pay attention to the actual effect of policy implementation. Although the government has introduced a number of policies to promote equity in higher vocational education, the actual effect of these policies needs further verification. It is recommended that future research can evaluate the effectiveness of different policy measures and explore their implementation effects and challenges in different regions and contexts.
4. Explore the long-term impact of perceived educational equity on student development. Future research can also track students' career development paths and study how perceived educational equity affects their career choices, career development, and income levels. This will help understand the long-term impact of perceived educational equity on the improvement of an individual's socioeconomic status.

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