

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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ECONOMICS AND MANAGEMENT FACULTY**

Accounting and Taxation

QUALIFICATION WORK

Education Degree - Master

**on: The optimization of teacher performance management program in
private schools**

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TASK

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3. Background to the project (work):

Optimizing the faculty performance management program in private higher education institutions plays a crucial role in shaping the efficiency and effectiveness of the educational process. This master's thesis explores the characteristics of the organization and management of faculty performance in private higher education institutions in China and considers ways to improve it for the future.

4. Contents of settlement and explanatory notes (the list of issues to develop):

This research will outline the study's objectives and significance, review relevant literature, and describe the methodology used. Based on the results of the analysis of the internal and external development environment of Yantai Nanshan University and through the SWOT matrix analysis, future development goals were proposed, and its overall strategic development was defined as a growth strategy with SO combination and a diversified business strategy with ST combination, as well as a differentiated competitive strategy for educational and teaching models. Due to their relatively short history, private universities have seldom studied their own development issues with the use of strategic management methods. It is of great significance to introduce the concept of strategic management into the management of private universities and promote private universities to embark on a path of distinctive development.

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2	Selection and analysis of literary sources, the preparation of the first theoretical chapter	<i>September - December, 2023</i>	
3	Preparation and presentation of draft of the first chapter of the thesis	<i>January 2023</i>	
4	Collection and processing of factual material, synthesis analysis of application issues in the enterprise	<i>March 2024</i>	
5	Making the theoretical part of the thesis, summarizing the analytical part	<i>April 2024</i>	
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Анотація

Ван Йонціан. Оптимізація програми управління ефективністю роботи вчителів у приватних школах

Кваліфікаційна робота на здобуття ОС «Магістр» за спеціальністю 073 «Менеджмент», Сумський національний аграрний університет, Суми, 2024.

Приватна освіта, що виникла в Китаї у 1980-х роках, розвивається вже майже 40 років. З роками вона ставала все сильнішою і сильнішою. Від початкового прагнення до розширення масштабів до нинішнього фокусу на підвищенні якості, вона стала невід'ємною частиною вищої освіти Китаю. Приватна вища освіта поділяється на два рівні: молодший коледж і бакалаврат, а невелика кількість приватних коледжів та університетів почали мати кваліфікацію для зарахування аспірантів. З розвитком суспільства та покращенням економіки люди все частіше прагнуть отримати вищу академічну кваліфікацію. Тому багато приватних коледжів молодших класів були перетворені на коледжі бакалаврату, кинувши виклик колишнім приватним коледжам бакалаврату.

Завдяки глибокому аналізу внутрішнього середовища Університет Яньтай Наньшань було виявлено, що ключовими внутрішніми перевагами є: географічно вигідне розташування в Яньтаї та прекрасне середовище кампусу; популярні спеціальності з відмінними інженерними спеціальностями; всебічні характеристики управління системою коледжів; енергійний викладацький склад; та повна експериментальна база та можливості для стажування.

Використовуючи матрицю внутрішньої факторної оцінки (IFE), після проведення анкетного опитування для кількісного аналізу був використаний метод ентропійної ваги, в результаті чого загальна зважена оцінка внутрішнього середовища Університету Яньтай Наньшань склала 2,52 бали. Це свідчить про те, що Університет Яньтай Наньшань може використовувати свої внутрішні переваги, щоб компенсувати свої недоліки, але використання внутрішніх переваг не є достатньо повним.

На основі результатів аналізу внутрішнього та зовнішнього середовища

розвитку Університету Яньтай Наньшань та за допомогою матричного аналізу SWOT були запропоновані майбутні цілі розвитку, а його загальний стратегічний розвиток був визначений як стратегія зростання за комбінацією SO та диверсифікована бізнес-стратегія за комбінацією ST, а також диференційована конкурентна стратегія для освітніх та викладацьких моделей.

Ключові слова: ефективність роботи викладачів, приватний заклад вищої освіти, стратегія розвитку, управління

Abstract

WANG YONGQIANG. The optimization of teacher performance management program in private schools - Manuscript

Qualification work for the degree of Master's degree in specialty 073 «Management», Sumy National Agrarian University, Sumy, 2024.

Private education, which emerged in China in the 1980s, has been developing for almost 40 years. It has grown stronger and stronger over the years. From the initial drive for scale to the current focus on quality, it has become an integral part of China's higher education system. Private higher education is divided into two levels: junior college and undergraduate, and a small number of private colleges and universities have begun to be qualified to enroll graduate students. With the development of society and the improvement of the economy, people are increasingly seeking higher academic qualifications. Therefore, many private junior colleges have been transformed into undergraduate colleges, challenging the former private undergraduate colleges.

Through an in-depth analysis of the internal environment of Yantai Nanshan University, it was found that the key internal advantages are: geographically advantageous location in Yantai and beautiful campus environment; popular majors with excellent engineering majors; comprehensive college system management characteristics; energetic teaching staff; and complete experimental facilities and internship opportunities.

Using the internal factor evaluation (IFE) matrix, after conducting the questionnaire survey, the entropy weight method was used for quantitative analysis,

resulting in an overall weighted score of Yantai Nanshan University's internal environment of 2.52. This indicates that Yantai Nanshan University can use its internal advantages to compensate for its disadvantages, but the use of internal advantages is not complete enough.

Based on the results of the analysis of the internal and external development environment of Yantai Nanshan University and through the SWOT matrix analysis, future development goals were proposed, and its overall strategic development was defined as a growth strategy with SO combination and a diversified business strategy with ST combination, as well as a differentiated competitive strategy for educational and teaching models.

Keywords: teacher performance, private higher education institution, development strategy, management

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INTRODUCTION

The privately-run education that emerged in China in the 1980s has developed for nearly 40 years. Over the years, it has become stronger and stronger. From the initial pursuit of scale expansion to the current focus on quality improvement, it has become an essential part of China's higher education. The privately-run higher education is divided into two levels: junior college and undergraduate college, and a small number of privately-run colleges and universities have begun to have the qualification to enroll graduate students. With the development of society and the improvement of economy, people are increasingly pursuing higher academic qualifications. Therefore, many private junior colleges have been upgraded to undergraduate colleges, posing a challenge to the original private undergraduate colleges.

In 2019, the State Council issued the National Vocational Education Reform Implementation Plan, which included qualified technician colleges in the sequence of institutions of higher learning. In the following year, 22 vocational colleges nationwide passed the selection of the Ministry of Education and were upgraded to undergraduate colleges. These upgraded or soon-to-be-upgraded vocational colleges are bound to bring certain competitive pressure to the development of private undergraduate colleges, and the competition among private undergraduate colleges is increasingly fierce.

Some studies on the development of catering have been conducted by Chinese scientists, including Qiu Yukun and Gu Guanhua (2016) ; Fan Jixuan (2013) ; Tian Liqiang (2016) ; Ju Guangyu (2010) ; Liu Xianjun (2019) ; Shi Banghong and Han Hongwen (2008) ; Han Xuemei (2013) ; Liu Qiang (2019), but However, in the "14th Five-Year Plan" period, new changes have taken place in the external environment and demands of higher education. We need to re-examine the development strategies of private colleges and universities and formulate strategic decisions that are in line with the current new environment.

The purpose of this work: Due to their relatively short history, private universities have seldom studied their own development issues with the use of strategic management

methods. It is of great significance to introduce the concept of strategic management into the management of private universities and promote private universities to embark on a path of distinctive development.

The main objectives of the study, which ensure the achievement of this goal, are as follows:

- overview of basic concepts and related theories, including the concepts and related theories of strategy and strategic management, strategic management analysis tools, as well as the concepts and nature of private universities.

- an analysis of the internal environment of Yantai Nanshan University. Analyze the infrastructure, faculty, scientific research, and enrollment situation of Yantai Nanshan University. Identify the key factors affecting the development of the college by experts, conduct a matrix analysis of these critical internal factors, and summarize the internal strengths and weaknesses of Yantai Nanshan University in its development.

- external environment analysis of Yantai Nanshan University. Using the PEST analysis method and Porter's Five Forces model to analyze the external environment of Yantai Nanshan University. Starting from the macro environment, analyze the external opportunities and challenges faced by Yantai Nanshan University during its development process.

- selection and formulation of the development strategy for Yantai Nanshan University. Using SWOT matrix analysis, IFE (Internal Factor Evaluation) and EFE (External Factor Evaluation) matrix analysis, a quantitative and qualitative analysis of the issues involved in the college's development process is conducted, and a practical and feasible development strategy is formulated for the college.

The object of the study: Yantai Nanshan University

The subject of the research: A Study on Improving the Competitiveness of Colleges and Universities

The research methods used in this paper are as follows:

(1) Literature Research Method

By making full use of online electronic resource platforms, we will search for various authoritative journals, academic reports, periodicals, and other content related to

the development strategies of private colleges and universities. Relevant literature on strategic management, strategic management of colleges and universities, and the development of private institutions will be obtained, sorted out, and summarized to establish a theoretical research foundation, thereby providing strong support for the in-depth study of the development strategy of Yantai Nanshan University.

(2) Questionnaire Survey Method

To ensure the objectivity of the research and the accuracy of the survey data, and to clearly identify the influencing factors of the internal and external environments of Yantai Nanshan University, providing a reliable basis for later strategic analysis, we will utilize the Wenjuanxing software to design questionnaires. These questionnaires will be distributed to personnel at different levels within the university. After conducting a sample survey, the results of the questionnaires will be statistically analyzed, enriching the research content while also ensuring the authenticity and validity of the study.

(3) Strategic Management Tool Research Method

Utilizing various strategic management tools and models such as PEST Analysis, SWOT Analysis, Key Factor Analysis, and Internal-External Factor Evaluation (IFE/EFE) Matrix, we will comprehensively study the internal and external environments of Yantai Nanshan University. These analyses will help identify the university's strengths, weaknesses, opportunities, and challenges. After a thorough synthesis of the results, we will formulate a development strategy tailored to the university's unique circumstances. Furthermore, we will develop corresponding safeguard measures based on the university's actual situation to facilitate the implementation and execution of the strategy, ensuring its successful realization.

The information base includes Chinese laws and regulations, management textbooks, domestic and foreign monographs, research textbooks, scientific publications, economic and financial reports, etc.

Novelty of research:

- based on the results of the internal and external environmental analysis of Yantai Nanshan University's development, and using SWOT matrix analysis, the future development goals of Yantai Nanshan University were proposed, and its overall strategic

development was determined as a growth strategy under the SO combination and a diversified business strategy under the ST combination, as well as a differentiated competitive strategy for educational and teaching models.

Specific implementation measures and safeguards:

- seizing good opportunities based on its own advantages to implement diversified operations.

- enhancing the characteristics of running a school by deepening the student education and management model with the characteristics of the college, strengthening the cultivation of applied talents, and strengthening the construction of professional cluster characteristics to enhance the overall educational and teaching differences of Yantai Nanshan University.

- strengthening the characteristic talent training model of "liberal arts education, knowledge education, and ability cultivation" to achieve differentiated talent training.

- strengthening incentive mechanisms to promote the construction of talent teams.

In terms of strategic implementation safeguards, it is first necessary to achieve strategic consensus among all faculty and staff, followed by financial support.

Practical value of work. With China's opening-up to the outside world, many public universities in China have integrated strategic management concepts into their development and construction, achieving considerable progress. Due to their relatively short history, private universities have conducted fewer studies on their own development issues using strategic management methods. Introducing strategic management concepts into the management of private universities and promoting them to embark on a path of distinctive development holds profound significance.

Own publications. The main theoretical provisions and practical results of the master's work were positively evaluated at two international scientific and practical conferences.

Structure and scope of work. The master's thesis consists of an introduction, three sections, conclusions and suggestions, a list of used sources of 51 items, 4 appendices. The main text is set out on 77 pages of computer text, the work contains 20 tables, 5 figures, 8 formulas.

CHAPTER 1

OVERVIEW OF THE DEFINITION AND DIMENSIONS OF COMPETITIVENESS IN THE CONTEXT OF HIGHER EDUCATION

1.1 Concepts related to private colleges and universities

Private colleges and universities refer to higher education institutions and other educational institutions organized by social organizations and individuals using non-state educational funds, with their educational levels ranging from vocational colleges to undergraduate colleges [1]. In recent years, a small number of private undergraduate institutions have also established master's degree programs.

Some scholars believe that private colleges and universities possess strong cost constraints and market-driven profit mechanisms from both ends of supply and demand. In modern enterprise management, the pursuit of profit maximization requires enterprises to exercise cost constraints throughout the three stages of procurement, production, and sales. Driven by the interests of the procurement and sales markets, enterprises strive to minimize costs and maximize revenue. This is similar to the situation in private colleges and universities. In the management process of private colleges and universities, there are also similar processes, namely: recruitment, education, and enrollment. In the recruitment and enrollment markets, there exist strong profit drivers and cost constraints similar to those in enterprises. The process of providing educational services is similar to the production process in enterprises, where there is a phenomenon of capital substitution under cost constraints. From the perspective of the entire management and operation process of private higher education, it is similar to the production management and operation process of modern enterprises [2]. The difference is that private colleges and universities do not sell products, but rather talent equipped with knowledge and skills.

In the management system of private universities, the president is generally appointed by the school organizer or the board of directors, responsible for the overall affairs of the school's education and teaching, administrative management, etc. Their

work needs to be accountable to the board of directors and report the work situation to the board of directors[3]. This management system is not exactly the same as enterprises hiring professional managers to serve as CEOs to manage the overall affairs of the enterprise.

In terms of operational focus, for enterprises, profit and sustainable development are the two most important factors. Under the premise of achieving profits and maintaining development, they will also take into account other aspects such as corporate social responsibility. Universities are places to cultivate talents. Their operation mainly focuses on providing education services, shouldering the mission of cultivating talents for the country and society. Therefore, their pursuit is not surplus profits, but the improvement of the quality of talents they cultivate. However, the development and operation of private universities receive very little economic support from the state and the government, and basically need to be self-financing. Therefore, improving operating income and enhancing market competitiveness are also very important for private universities, just like enterprises.

Private universities have similar processes of enterprise production management and operation, so the essence of strategic management in private universities is consistent with that of enterprise strategic management, and their theories are basically interconnected. We can borrow the ideas of enterprise strategic management to conduct research on strategic management in private universities. Implementing strategic management in universities is an important measure to promote the healthy and sustainable development of the school.

Strategic management is an art and science of formulating, implementing, and evaluating multi-functional decisions, which can ensure that organizations achieve their goals [4]. The main content of strategy involves the long-term development direction and scope of the enterprise. The strategy tries to match resources with the environment (especially the market) and consumers to achieve the expected goals of the enterprise. The scope of business operations, how to allocate resources, how to gain competitive advantages, and how to achieve synergies are the contents that strategic management covers. The scope of business operations is the field in which the enterprise engages in

production and operation activities. Resource allocation is the ability and method of allocating and integrating its resources and skills [5]. Competitive advantage refers to the favorable competitive position formed by the enterprise in the market through resource allocation and business scope decisions. Synergy is the overall effect produced by the enterprise when using the same resource for business decisions at different stages or in different aspects [6].

The process of strategic management begins with the determination of the enterprise's vision, mission, and goals, followed by the analysis of the internal and external environments of the enterprise, namely, the analysis of strategic situations. Then strategic analysis and selection are carried out, followed by strategic implementation, and finally strategic evaluation and control. It is worth noting that strategic evaluation and control are not only the end of the strategic management cycle, but also the beginning of a new round of strategic management cycle [7].

From the perspective of the theme of strategic implementation, corporate strategy includes three aspects: Firstly, the overall strategy, also known as corporate strategy. It is the highest level of strategy that determines the enterprise's competitive strategy and functional strategy. Secondly, the competitive strategy, also known as the business-level strategy, is the strategy adopted by the subsidiaries or business divisions of the enterprise or group after the overall strategy, which determines the enterprise's functional strategy. Thirdly, the functional strategy is the strategy adopted by various functional departments such as research and development, procurement, marketing, finance, and human resources.

1.2 Strategic analysis tools

The external macro environment of each company consists of the following factors: political, economic, social and cultural, and technological. The model that analyzes these elements is called the PEST model. When using the PEST model, you can follow the following steps: first, consider political, economic, social, cultural, and technological factors separately to identify the points that the enterprise is most concerned about.

Second, analyze these factors to clarify their impact on the enterprise strategy. Finally, evaluate these factors to determine the key strategic factors.

The Five-Factor Competitiveness Model proposed by Michael Porter, a professor at Harvard University in the United States, provides a framework for enterprises to identify and analyze the sources of competitive factors [8]. According to his view, the five forces that determine the competition pattern of enterprises are: the risk of potential competitors entering the market, the strength of competitors in the industry, the bargaining power of buyers, the bargaining power of suppliers, and the similarity of substitute products. The relationship between the five forces and the role of enterprises is shown in Figure 1.

FIGURE 1: PORTER'S FIVE FORCES MODEL
Adapted from M E Porter, *Competitive Strategy*, Free Press, 1980



Figure 1 - Porter's five forces model

Source: generalized by the author on the basis of source 8

There are three steps to use the five forces model to determine the competitive situation in the industry: first, identify each competitive force in the five forces model and determine the specific factors that lead to each competitive force. Second, evaluate the strength of each force. Finally, determine whether the integration of the five forces can

bring high profitability to the industry[9].

The Internal and External Factor Evaluation (IFE/EFE) Matrix is a method used to analyze and evaluate the key internal and external factors of a business [10]. Through the weighting and scoring of various factors, weighted scores and total scores can be obtained. The final total score enables enterprises to understand whether their responses to internal and external environments and competition are positive, effective, or poor. The operational steps are as follows:

(1) Identify the factors of advantages, disadvantages, opportunities, and threats through analysis.

(2) Determine the weight of each factor, requiring that the weight of each factor is greater than or equal to 0 and less than or equal to 1, with the sum of all factor weights equaling 1. To ensure objectivity in determining weights, we introduce the entropy weight method. The specific steps are as follows:

First, conduct a questionnaire survey to score the importance of each key internal and external factor. Assuming that there are n surveyors who have scored m factors, then x_{ij} represents the numerical value of the j th factor for the i th sample ($i=1, 2, \dots, n$; $j=1, 2, \dots, m$).

Second, normalize the indicators: homogenize heterogeneous indicators. If there are inconsistencies in various indicators, we need to unify the measurement units of each indicator. Before using them to calculate comprehensive indicators, we need to standardize them, that is, convert the absolute values of indicators into relative values, and let $x'_i = |x_i|$. The specific method is as follows:

Positive indicators:

$$x'_{ij} = \frac{x_{ij} - \min(x_{1j}, \dots, x_{nj})}{\max(x_{1j}, \dots, x_{nj}) - \min(x_{1j}, \dots, x_{nj})} \quad \text{Formulas 1.1}$$

Negative indicators:

$$x'_{ij} = \frac{\min(x_{1j}, \dots, x_{nj}) - x_{ij}}{\min(x_{1j}, \dots, x_{nj}) - \max(x_{1j}, \dots, x_{nj})} \quad \text{Formulas 1.2}$$

Assuming that X'_i represents the numerical value of the j -th factor for the i -th sample (where $i=1, 2, \dots, n$; $j=1, 2, \dots, m$). For the sake of convenience, the normalized data is still denoted as X'_i ; of course, if the metrics are uniform, this step can be omitted.

The third step is to calculate the proportion of the i-th sample under the j-th factor compared to the total of that factor.

$$p_{ij} = \frac{x_{ij}}{\sum_{i=1}^n x_{ij}} \quad \text{Formulas 1.3}$$

(i=1,.....,n, j=1,.....,m)

In the fourth step, the entropy value of the jth indicator is calculated:

$$e_j = -k \sum_{i=1}^n p_{ij} \ln (p_{ij}) \quad \text{Formulas 1.4}$$

In the meantime, $k = 1/\ln(n) > 0$. Subject to the condition that $e_j \geq 0$;

The fifth step is to calculate the redundancy of information entropy:

$$d_j = 1 - e_j \quad \text{Formulas 1.5}$$

The sixth step is to calculate the weights of each indicator:

$$w_j = \frac{d_j}{\sum_{j=1}^m d_j} \quad \text{Formulas 1.6}$$

(3) Each factor is rated on a scale of 1 to 4, with 1 representing the lowest impact or primary disadvantage, 2 representing a moderate impact or secondary disadvantage, 3 representing a higher impact or secondary advantage, and 4 representing a very high impact or primary advantage. The scoring results are represented by

(4) Calculate the weighted scores for each factor:

$$\alpha_j = w_j \times \beta_j (j = 1, 2, \dots, m); \quad \text{Formulas 1.7}$$

(5) Calculate the total weighted score for the enterprise:

$$A = \sum_{j=1}^m \alpha_j \quad \text{Formulas 1.8}$$

The SWOT analysis method is based on the internal and external environment of the enterprise [11]. Through a matrix list, it evaluates the four factors of the enterprise's strengths, weaknesses, opportunities, and threats. After evaluating the internal and external factors one by one, it measures the existing strategic situation. At the same time, by combining various internal and external factors and conditions, it observes whether there are any new strategies generated. The SWOT matrix combines two factors to produce four strategies, and their specific meanings are as follows: (1) The SO strategy, which is a strategic form of strengths plus opportunities. It examines the enterprise's

internal advantageous resources and combines them with external opportunities to promote the overall operation of the enterprise. (2) The ST strategy, which is a strategic combination of strengths and threats. It is based on the enterprise's advantageous resources, fully exerts the potential of advantageous resources, uses them to counter external threats encountered by the enterprise, and leverages the advantages of internal resources to reduce external risks. (3) The WO strategy, which is a strategic combination of weaknesses and opportunities. It stands from the perspective of external opportunities, fully utilizes the opportunities brought by the external environment to eliminate or reduce the disadvantages within the enterprise, and seize opportunities to address its own shortcomings. (4) The WT strategy, which is a strategic combination of weaknesses and threats. This combination is a strategy of giving up minor losses to avoid major risks, or using strengths to counter threats.

Building a SWOT matrix typically involves the following eight steps: (1) Identify the strengths, weaknesses, opportunities, and threats of the enterprise internally and externally. (2) Match the internal strengths with external opportunities, and fill in the SO strategy research results in the SO cell of the table. (3) Match the internal strengths with external threats, and fill in the ST strategy research results in the ST cell of the table. (4) Match the internal weaknesses with external opportunities, and fill in the WO strategy research results in the WO cell of the table. (5) Match the internal weaknesses with external threats, and fill in the WT cell of the table with the results of the WT strategy research.

1.3 Study on the optimisation and improvement of the human resources information management system

In the management of some large and medium-sized enterprise groups, the role and value of the human resource information management system have become increasingly prominent. Some common and individual problems in the field of human resource management in enterprises have also been gradually resolved under the support and

influence of this system. Thanks to the systematic and in-depth research conducted by relevant researchers in China, Tian Xuefei (2003) used Siemens as a research sample [12]. After conducting relevant surveys, he concluded that it is necessary for enterprises to carry out human resource information management. At the same time, he divided and studied the actual system modules of Siemens in detail, using questionnaire surveys to study the relevant users of the system. The final results showed that there were many defects in the construction of Siemens' human resource information management system, and proposed reasonable improvement ideas and methods [13]. Liu Meng (2005) pointed out the defects in the human resource management of Chinese enterprises, indicating that most of the human resource management systems in Chinese enterprises are researched and designed by relevant developers, which makes many functions in these application systems not match the actual situation and needs of enterprises, so some functions that meet the actual development needs of enterprises have not been designed [14].

This means that although the system has been built and applied in many enterprises, its value and role in the field of human resource management are not very prominent. Therefore, his view is that every enterprise cannot randomly build a system. The first step is to consult relevant companies, and then find highly qualified developers to carry out targeted design, which is to first research and analyze the specific steps of the business, and then implement the system development. Zhu Yonggeng (2009) referred to the theories of human resource management in China and internationally, and combined them with the current situation in China [15]. Zhang Chuanqing (2013) established the structural framework of Chinese enterprise human resource information management, conducted a deep research on this system architecture, and proposed that the system must have clear system training, performance evaluation, recruitment steps, employee incentive, human resource planning, and mobility in the actual design and operation process. In addition, leaders and employees should communicate frequently [16]. Zheng Xin (2014) proposed to enterprise managers that a scientific human resource information management system is not just about upgrading and improving the system, but also about reconstructing the specific business and processes of the enterprise [17]. Peng Tugyuan (2014) studied a large state-owned enterprise, conducted a detailed study on the defects

in the construction of its human resource information management system, obtained new construction strategies, defined each module, and proposed initial operation methods and management ideas [18].

In the 1980s, the idea of strategic management in human resources was introduced from abroad and gradually accepted and adopted by Chinese scholars. After the introduction stage in the 1980s, scholars have devoted themselves to further enriching the content of China's strategic management research; In the application stage of the 1990s, strategic management was gradually applied in enterprises, but some strategic problems were also gradually exposed; From the end of the 1990s to the present, the idea of strategic management has reached the stage of digestion and absorption in China, and Chinese scholars have begun to formulate corresponding strategic management methods based on China's national conditions [19].

The idea of strategic management in China's universities gradually emerged in the late 1980s and 1990s. Since the 1980s and 1990s, many universities in China, especially some research universities, have begun to regard the formulation of development strategies as a major event in universities. They have set up development planning offices or policy research offices responsible for researching and planning the long-term development and strategic countermeasures of schools to carry out the overall development strategic planning of schools [20]. Early scholars recognized that strategic management capability is an essential guarantee for improving the level of strategic management in institutions of higher education and promoting the sustainable development of universities. A scientific and reasonable evaluation of strategic management capabilities is an indispensable means to improve the strategic management capabilities of universities [21]. The development strategic planning of universities plays a significant role in university management, including the roles of leading, mobilizing, unifying, and standardizing [22]. However, in practical work, the role of university development strategic planning has not been well played due to various reasons. To do a good job in strategic planning, we should not only grasp the major themes of university development but also master the theoretical basis and basic methods of strategic planning [23].

As the social, political, and economic environments continue to change, domestic scholars have analyzed the development strategies of private universities from different backgrounds. Qiu Yukun and Gu Guanhua (2016) conducted research on the development of private universities under the background of supply-side reform. They believed that in the context of supply-side structural reform in the economic field, the supply-side reform of talent cultivation is also something that private universities should pay attention to. On the one hand, it is to adapt to the changes in talent demand brought about by economic supply-side reform; on the other hand, it is to seize the opportunity to move towards first-class private universities through their own supply-side reform [24]. Fan Jixuan (2013) studied the development strategies of private universities during the period of social transformation. He stated that during the period of social transformation in higher education, it is necessary to seriously study and explore the development strategies of private universities in order to form and maintain competitive advantages and seek long-term survival and development [25]. Tian Liqiang (2016) believed that with the transformation and upgrading of the national economic structure and the continuous deepening of higher education reform, the development thinking, direction, model, motivation, and guarantee of private universities have shown some new characteristics and changes. At the same time, they are also facing new challenges and problems in terms of development environment, self-development, and competitive pressure. Under the new situation, private universities need to think strategically about their own strategic paths, and achieve a higher level and more sustainable development by reshaping value orientations, improving internal governance, and promoting transformational development [26]. Ju Guangyu (2010) emphasized that the sustainable development of private higher education in China is facing great challenges. In order to cope with this challenge, it is necessary to objectively view the nature of private higher education in China; and establish a clear classification management system based on the characteristics of for-profit and non-profit private universities [27].

With social progress and economic development, China's higher education continues to develop. In such a context, the number of non-profit private colleges and universities has increased. However, there are still many problems in the current

development process of private colleges and universities. Only by taking reasonable and effective measures to solve these problems can we promote the normal development of educational activities in China's non-profit private colleges and universities, and ultimately promote the healthy and sustainable development of higher education [28].

In the analysis of the development strategies chosen by private universities, Liu Xianjun (2019) pointed out from the perspective of strategic extroversion that the strategic choices of private universities should focus on the requirements of the new era, the challenges of artificial intelligence, the new requirements of the popularization of higher education, and the pressure brought by the rapid development of public universities [26]. Shi Banghong and Han Hongwen (2008) conducted research on the talent strategy direction of private universities, pointing out that innovation is the key for private universities to gain competitive advantages, and talent is the source of innovation; customer satisfaction reflects the relevance of the services provided by talents to market demand, which is an indicator of the school's market position and future earnings [29]. Han Xuemei (2013) studied the development of private universities from the perspective of their internationalization development strategy. By deeply analyzing the main content and problems of the current internationalization development of domestic private universities, she proposed corresponding strategies such as realizing the latest concept of internationalization development of higher education, formulating medium- and long-term strategic plans for the internationalization development of private education, and building an external atmosphere suitable for the internationalization development of private education [30]. Liu Qiang (2019) conducted research from the perspective of the connotative development of higher education, pointing out that university strategic management faces embarrassing situations such as insufficient internal driving force and lack of management capabilities, leading to a serious dilemma of virtualization in university strategic management [31].

Scholars have recognized that China has now entered the stage of popularization of higher education, and the opportunities, challenges, and strategic choices faced by private universities are worth considering. In the stage of popularization, private universities will face significant opportunities such as tremendous room for development,

a more favorable policy environment, and continuously improved external support. At the same time, they will also face challenges such as conceptual recognition and organizational legitimacy, scale expansion and quality improvement, changing demands and effective supply. Private universities need to make correct strategic choices in terms of scientific planning and accurate positioning, leveraging advantages and mobilizing resources, improving governance, and enhancing overall standards [32].

In recent years, the country has focused on the development of vocational education, driving changes in higher vocational education. However, during the transformation process of private undergraduate universities, although there is a clear direction, the depth of theoretical research is insufficient, and there is relatively little paradigm guidance [33]. Private vocational universities should combine differentiation with connotative development, and have distinct characteristics in terms of development orientation, teaching methods, professional settings, employment orientation, and brand marketing [34].

In summary, China has introduced strategic management concepts into the development of higher education for a certain period of time. With changes in socio-economic and political environments, domestic scholars have analyzed and chosen development strategies for private universities from different perspectives. However, entering the "14th Five-Year Plan" period, new changes have taken place in the external environment and demands of higher education. We need to re-examine the development strategies of private universities and formulate strategic decisions that are in line with the current new environment.

CHAPTER 2

ORGANIZATIONAL AND ECONOMIC DESCRIPTION OF THE UNIVERSITY

2.1 Organizational structure, mission, goals and analysis of the main indicators of financial and economic activity of the studied university

Over the years, Yantai Nanshan University has cultivated a large number of talents in the new era. However, with the intensified competition for undergraduate enrollment in the college entrance examination, Yantai Nanshan University is facing a trend of falling into a trough after a short-term expansion. The mobility of teachers has increased, and the quality of students has declined. Although the university has made progress in terms of quantity and scale, it has encountered a bottleneck in terms of development quality. In recent years, Yantai Nanshan University has always ranked at the bottom among similar universities in Shandong Province, which is not conducive to its competition in the higher education market. Therefore, finding a way for long-term development and growth, as well as a method to enable the university to firmly establish itself in social and economic development without being shaken, has become a key issue to be resolved in the development process of Yantai Nanshan University.

Yantai Nanshan University adopts the management model of "led by the board of directors, presided over by the president, supervised by the party committee, and run by professors". The board of directors is the highest decision-making level of the university, consisting of five members: two representatives of the organizers, one person in charge of the party organization, one president, and one representative of the faculty and staff. The board of directors has the power to change the organizers, appoint and dismiss the president, assess the middle and senior management of the university, review and approve the school constitution, development plan, and financial plan, determine the scale and salary standards of the faculty and staff, and has the power to decide on major issues such as the change, merger, division, and termination of the university. The institutional setup, faculty development, budget control, and other matters of the university are all decided

by the board of directors, indicating a high degree of centralized power in Yantai Nanshan University.

In the process of school operation and management, there is a phenomenon of family governance in Yantai Nanshan University. The chairman of the board is the organizer of the university, and the vice chairman is the son of the chairman. He also serves as the executive president of the university, managing the administrative work, student education and safety management, logistics support, financial management and cost control, asset management and other work of the university. The highly centralized family control and the patriarchal style in the management process of Yantai Nanshan University are not conducive to the management and development of the university.

Yantai Nanshan University adopts a student management model that emulates the "residential college system" of European and American universities, using the community where students reside as a platform for implementing general education. The residential colleges take on the task of ideological and moral education as well as the cultivation of student behavior. Yantai Nanshan University currently has six residential colleges: Yougong, Youshan, Youmin, Youren, Youai, and Youda. Taking Youda College as an example, it is located in the Youda Yuan dormitory building on campus. The Youda Yuan community is equipped with a student cafe, reading room, activity room, conference room, psychological counseling room, and other places for students to relax, entertain, and communicate. The students living in Youda Yuan come from the School of Data Science and Intelligent Engineering and the School of Foreign Languages. Students from different schools living in one college are integrated together, truly achieving interdisciplinary communication. In addition to the "dual-college system" of college and residential college, the school also implements a "dual-teacher" education model. An undergraduate student has two tutors, one in the residential college and one in the school. The counselor of the residential college is mainly responsible for students' innovation and entrepreneurship, extracurricular activities such as sports and arts, as well as ideological and political education and psychological counseling. At the same time, the school will also appoint a class tutor for each class, who is mostly a professional course teacher, mainly responsible for solving students' professional learning, academic style construction, and other issues.

As the only university in Shandong Province with a residential college system, the distinctive student management model of Yantai Nanshan University has attracted many students and parents, which is an advantage for the school.

According to the investigation of Yantai Nanshan University, as shown in Table 2.1 and 2.2 the overall budget revenue of Yantai Nanshan University has shown a downward trend in the past three years, while the budget revenue of individual projects has generally exhibited an upward trend, except for the decrease in fiscal appropriations and other income in 2023.

Table 2.1- Budget income statement of Yantai Nanshan University

The Project	In 2021	In 2022	In 2023
Revenue from financial grants	1967	2132	2006
Income from education	688	509	702
Income from research funds	55	52	59
Income from operations	122	132	155
Other income and expenses	218	218	45
Total budget revenue	3050	3043	2967

Unit: ten thousand yuan. Source: systematized by the author

The budget expenditure situation of Yantai Nanshan University is as follows: other projects have generally tended to increase, except for a decrease in common expenses in 2022. At the same time, due to fewer infrastructure projects in the past two years, infrastructure expenditure has shown a downward trend year by year.

Table 2.2-- Budget and expenditure table of Yantai Nanshan University

The Project	In 2021	In 2022	In 2023
research undertakings	122	130	143
Operating expenses			
Expenditure on personnel	1863	2132	1714
Expenditure on public funds	567	420	576
Expenditure on scientific	52	52	51
Other expenses	266	268	488
Infrastructure spending	180	41	--
Total budget expenditure	3050	3043	2967

Unit: ten thousand yuan. Source: systematized by the author

The budget execution rate = (final accounts ÷ budget amount) * 100%. Yantai Nanshan University has not yet established a comprehensive budget management

performance evaluation index system, but this is also an important means for the current stage of the school to implement budget management. According to the analysis of the actual situation, the budget of Yantai Nanshan University in Shandong was higher than the final accounts in 2023. The specific income budget execution rate can be seen in Table 2.3. The execution rate of fiscal appropriations income is 107.65%; the execution rate of educational revenue is 91.23%, which is due to the difference between the actual budgeted income of affiliated units and the recorded situation in the table. In 2022, the execution rate of educational revenue was 79.63%, and there were two reasons for this issue: firstly, the budget and final accounts of other educational amounts differed significantly, with the proportion of final accounts in the budget amount only 40%; secondly, the actual budget of affiliated units was not truly paid.

Table 2.3 - Implementation rate of revenue budget and final accounts of Yantai Nanshan University

The Project	Implementation rate in 2021	Implementation rate in 2022	Implementation rate in 2023
Revenue from financial grants	109.62%	107.52%	107.65%
Income from education	79.67%	79.63%	91.23%
Income from research funds	141.56%	119.78%	87.66%
Income from operations	117.87%	132.24%	88.52%
Other income and expenses	1345.43%	79.78%	1023.43%
Total income	108.55%	111.21%	118.23%

Source: systematized by the author

According to the analysis of the actual situation, the expenditure final accounts of Yantai Nanshan University exceeded the budget in 2022. The specific expenditure budget execution rates are 111.21% and 107.65%, as detailed in Table 2.4. The overall expenditure budget execution rate is 115.77%. The most significant increase is in personnel expenses. This paper believes that there are two reasons for the growth in personnel expenses: firstly, the funding for hired staff continues to increase, and secondly, changes in medical insurance policies have led to an increase in the total number of employees. Yantai Nanshan University did not effectively control the execution of special expenditures in 2022, resulting in significant deviations in common expense expenditure and lower actual expenditures than the budget. In recent years, the total expenditure final

accounts have exceeded the budget. The main reason for this issue is the significant difference between the expenditure budget and reality, manifested by the large variations in the execution rate of personnel expense budget and common expense budget.

Table 2.4 - Implementation rate of expenditure budget and final accounts of Yantai Nanshan University

The Project	Implementation rate in 2021	Implementation rate in 2022	Implementation rate in 2023
Expenditure on personnel	118.58%	139.47%	101.48%
Expenditure on public funds	99.86%	83.09%	126.58%
Expenditure on scientific research undertakings	99.89%	109.23%	95.16%
Operating expenses	113.42%	116.21%	89.27%
Other expenses	46.85%	69.63%	94.18%
Total expenditure	111.2%	115.77%	103.74%

Source: systematized by the author

Deviation rate = (final accounts - budget) / budget * 100%. Through research, it was found that starting from 2021, Yantai Nanshan University has seen a decrease in the deviation rate between budget and final accounts for three consecutive years, with an average deviation rate of only 7.61%. However, when looking at individual projects, the performance is not satisfactory, showing high deviation rates between income budgets and final accounts. This indicates that Yantai Nanshan University has a serious issue of over-collection, which should be of concern to the management. From an overall perspective of income budgets and final accounts, Yantai Nanshan University also exhibits a certain level of deviation. Upon closer observation of different income projects, significant structural differences can be observed. Refer to Table 2.5, where it is found that several income budget deviation rates have shown a decreasing trend, such as operating income, educational revenue, research funding, and other projects. In 2021, the overall income budget deviation rate decreased, but the fiscal appropriations income showed an upward trend. From this, it can be inferred that the deviation in total income is not significantly related to the deviation in fiscal appropriations income. Based on the above discussion, it is evident that the current deviation in total income budget and final accounts at Yantai Nanshan University is primarily caused by the deviation in research funding income budgets and final accounts.

Table 2.5 - Implementation rate of expenditure budget and final accounts of Yantai Nanshan University

The Project	Implementation rate in 2021	Implementation rate in 2022	Implementation rate in 2023
Revenue from financial grants	11.34%	12.02%	18.95%
Income from education	-17.29%	-16.07%	-11.07%
Income from research funds	35.45%	21.45%	-9.57%
Operating and other income	46.11%	19.35%	1.72%
Total income	10.02%	6.54%	6.26%

Source: systematized by the author

Table 2.6 presents the specific analysis results of the deviation rate between budget and final accounts for expenditure at Yantai Nanshan University. Over the three years starting from 2021, the average deviation rate for total expenditure budget and final accounts is relatively low, at 4.23%. This suggests that the overall deviation rate for total expenditure is decreasing. However, due to significant deviation rates in certain expenditure projects, the overall level remains high. This indicates the presence of significant overspending at the university, requiring timely intervention from relevant departments to avoid potential risks. In terms of expenditure, it was observed that several projects showed a decrease in deviation rates, including operating expenses, personnel expenses, and other expenses. Among these, personnel expenses had the largest base, highlighting its significant impact on the university and contributing to the noticeable deviation in total expenditure. As a result, the university needs to pay close attention to controlling personnel expenses.

Table 2.6 - Deviation degree of expenditure budget and final accounts of Yantai Nanshan University

The Project	Implementation rate in 2021	Implementation rate in 2022	Implementation rate in 2023
Expenditure on personnel	24.00%	8.75%	0.78%
Expenditure on public funds	-21.25%	-16.56%	28.37%
Expenditure on scientific research undertakings	-3.45%	9.46%	-6.57%
Operating expenses	14.25%	15.86%	-10.74%
Other expenses	11.26%	47.04%	--
Infrastructure spending	-54.53%	-30.27%	-7.21%
Total expenditure	6.51%	3.75%	2.43%

Source: systematized by the author

Based on the analysis of the deviation of budget and final accounts and the execution of budget and final accounts, it is found that Yantai Nanshan University has numerous problems in budget management. As a self-supporting private university, Yantai Nanshan University's main responsibilities are scientific research and vocational education. Only by building a good budget management and performance evaluation system can the university achieve better development. In addition, due to the poor overall debt situation this year, it is necessary to improve the efficiency of fund utilization through effective budget management performance evaluation.

Most of the funding for private universities comes from tuition fees collected by the schools, which is generally known as "supporting education with education". The number of enrolled students directly affects the school's income for the academic year, so recruitment in private universities is particularly important. In the past five years, the number of students enrolled in the university has been increasing, along with the number of admitted students.

However, the number of students reporting for classes and the reporting rate showed negative growth in 2022, which the school took very seriously. Therefore, multiple departments jointly investigated the reasons for this phenomenon that year. After research, it was found that the main reason for the negative growth in the number of students reporting for classes and the reporting rate in 2022 was the substantial increase in tuition fees that year. Tuition fees rose from the original range of 23,000 to 26,000 yuan (varying by major) to between 25,000 and 35,000 yuan. The sudden surge in tuition fees discouraged many students. In 2023, although the reporting rate increased compared to 2022, it was still lower than the reporting rate in 2021 before the tuition increase. This indicates that tuition fees affect the reporting rate at Yantai Nanshan University, and excessive increases in tuition fees are unfavorable for its recruitment. The school's enrollment situation in the past three years is shown in Figure 2.1. From the figure, we can see that the planned enrollment of the school has been increasing in the past three years, accompanied by an increase in the number of admitted students.

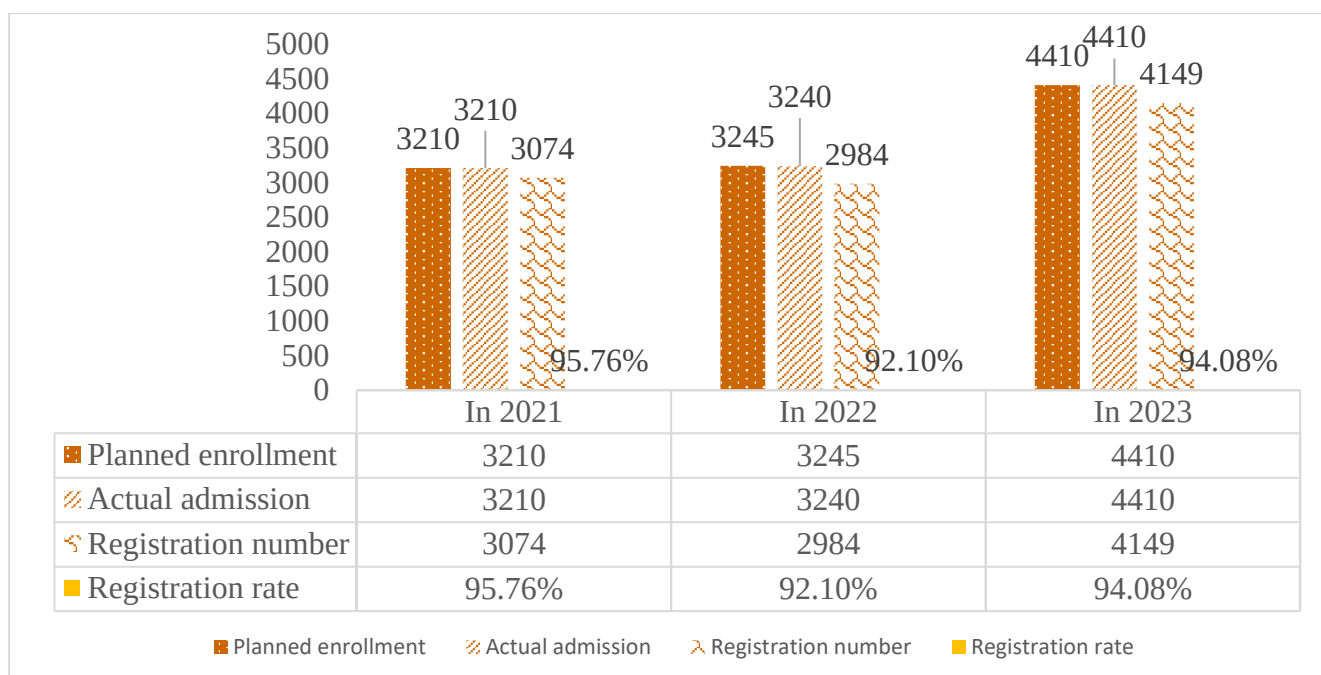


Figure 2.1 - Enrollment in the past three years

Source: systematized by the author

In general, the funds of private colleges and universities mostly come from tuition fees collected by the schools, which are generally "self-sustaining". The number of students directly affects the school's income in this academic year, so the enrollment of private colleges and universities is particularly important. The students in the school are divided into undergraduate students admitted by general college entrance examination (referred to as GCEE) and those transferred from junior colleges to senior colleges. Table 2.7 shows that the proportion of students transferred from junior colleges to senior colleges is relatively small, and the school is mainly composed of students of GCEE. Among them, the students from Shandong Province account for the majority, with a proportion of more than 50%. Therefore, we mainly analyze the situation of Shandong students in the school.

Figure 2.7 - Enrollment in the past three years

Years	In 2021	In 2022	In 2023
Total planned enrollment	3210	3245	4410
The number of students enrolled in the plan	550	535	985
Number of students enrolled in Pugao plan	2660	2710	3425
Shandong Pugao plan enrollment	1560	1523	2112
The proportion of students from Shandong	58.65%	56.20%	61.66%

Source: systematized by the author

Since 2020, Shandong Province has merged the first and second batches of general undergraduate admissions into a unified undergraduate batch. After the merger, the admission score lines of the school's GCEE students are shown in Table 2.8. From the table, we can see that the admission score of Yantai Nanshan University is declining, from 15-20 points above the undergraduate line to less than 10 points above the undergraduate line. The decline in the quality of student enrollment can be seen from the admission situation, which is a disadvantage for Yantai Nanshan University.

Table 2.8 - Admission situation of Shandong Province

Time	category	Take the highest score	Minimum admission score	Undergraduate batch tangent	Minimum point difference from the tangent line
In 2021	Literature and history	501	480	465	15
	Science and engineering	481	422	402	20
In 2022	history	507	467	467	0
	physics	496	427	423	4
In 2023	history	505	470	468	2
	physics	482	435	428	7

Source: systematized by the author

The total number of students enrolled in Yantai Nanshan University is generally on the rise, but its high tuition fees will affect the school's reporting rate, and excessively high tuition increases are not conducive to school enrollment. The admission score of Yantai Nanshan University for college entrance examination is declining, from 15-20 points above the undergraduate line to less than 10 points above the undergraduate line, which has led to a decline in the quality of enrolled students. These are disadvantages for Yantai Nanshan University.

2.2 Assessment of the university's research activities, including publications, patents, and research collaborations

In recent years, the university has gradually begun to attach importance to scientific research work. Since 2020, the university has established a special scientific research office to cultivate and support scientific research projects, and the scientific research

situation has developed significantly. The scientific research achievements of the university from 2020 to 2023 are shown in Table 2.9.

Table 2.9 - Research projects from 2020 to 2023

Time	College level	University level	Provincial level	National level	Total
In 2020	0	41	34	0	75
In 2021	12	50	41	0	103
In 2022	16	59	35	0	110
In 2023	32	36	39	0	107

Source: systematized by the author

Yantai Nanshan University has shown a trend of increasing total scientific research achievements year by year, indicating that the teachers of the college still attach importance to scientific research. But Yantai Nanshan University has never had any national-level scientific research projects from 2020 to 2023. After the establishment of the Scientific Research Office in 2020, the situation of scientific research projects has slightly improved. The scientific research situation from 2020 to 2023. As we can see from the table, the total number of scientific research projects has increased in the past four years, but there are still relatively few scientific research projects above the provincial level. Most of them are mainly school-level and secondary college-level scientific research projects. This indicates that the school's scientific research strength is still relatively weak. It is mainly because the young teachers constitute the majority in Yantai Nanshan University, and the proportion of teachers with junior and intermediate titles is relatively large. The teachers' own research level is not high enough, and the research achievements tend to be relatively easy literature papers.

In addition to the above factors, another reason affecting teachers' performance appraisal is that in terms of research topics and papers, some private universities are particularly important in performance appraisal and professional titles in order to improve the reputation of the school. As a result, teachers mainly neglect students' talents by focusing on teaching and research. Nanshan University in Yantai, Shandong Province, is no exception. The scientific research achievements of Yantai Nanshan University from 2021 to 2023 are shown in Figure 2.2.

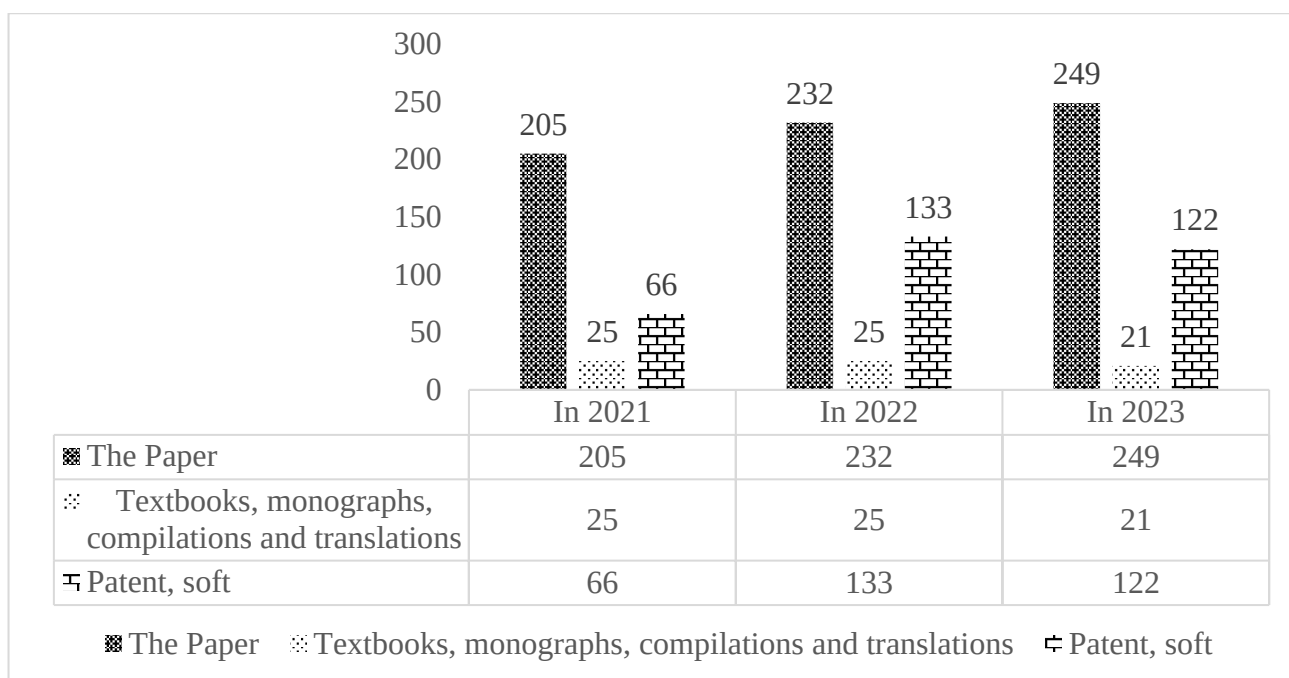


Figure 2.2 - The scientific research achievements of Yantai Nanshan University from 2021 to 2023

Source: systematized by the author

As can be seen from Figure 2.2, the total number of scientific research achievements at Yantai Nanshan University has shown a trend of increasing year by year, indicating that the college teachers still attach importance to scientific research. However, the total number of research achievements in the form of monographs, compilations, translations, textbooks, etc. is relatively small and the quality is low. This is mainly due to the fact that young teachers account for the majority of the teachers at Yantai Nanshan University, with a large proportion of teachers holding junior and intermediate professional titles. Teachers' own research level is not high enough, and their scientific research achievements tend to be relatively easy literature papers. Since engineering teachers are in the majority, the number of patents and software copyrights has increased rapidly, indicating that the school's teachers have developed rapidly in practical research.

Publications, patents, and research collaborations are related to the level of teacher seniority. The university currently has 542 full-time teachers, among whom 186 are aged between 25 and 35, 266 are aged between 35 and 45, 45 are aged between 45 and 60, and 45 are over 60 years old. The distribution is shown in Figure 2.3. As we can see from the

figure, the majority of teachers in the university are young and middle-aged, and the teaching staff tends to be younger. Such a team is more dynamic, energetic, and has a higher work enthusiasm.

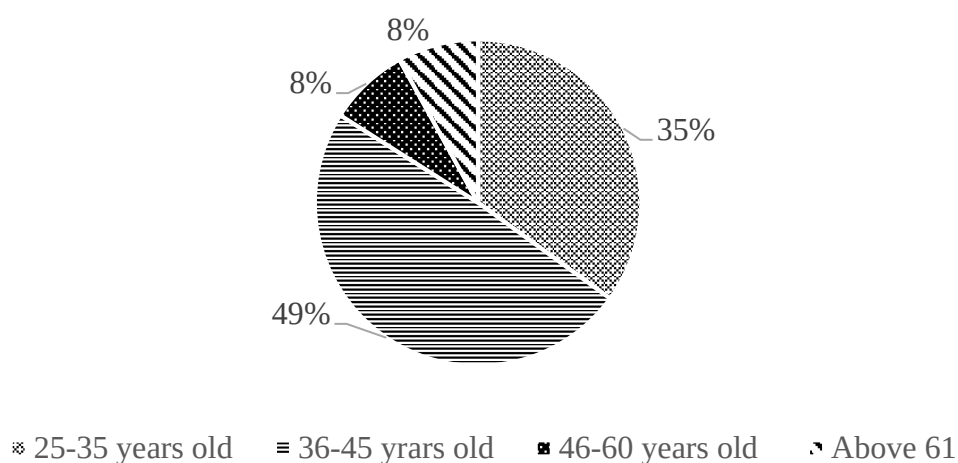


Figure 2.3 - Full-time Teachers

Source: systematized by the author

Regarding the academic qualifications of full-time teachers, the university currently has 55 doctors, 385 masters, and 102 bachelors, totaling 542 teachers. The structural distribution is shown in Figure 2.4. As we can see from the figure, the number of teachers with doctoral degrees at Yantai Nanshan University is relatively small, and more than 70% of the teachers hold master's degrees.

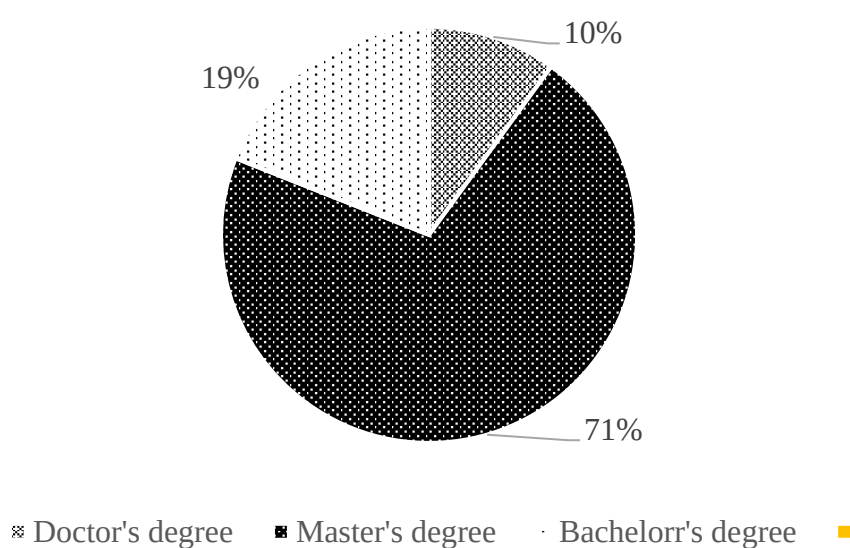


Figure 2.4 - Degrees of full-time teachers

Source: systematized by the author

According to the provisions of the Ministry of Education's "Interim Provisions on the Establishment of Regular Undergraduate Colleges and Universities", the proportion of full-time teachers with graduate degrees in the total number of full-time teachers should be no less than 50%. Obviously, Yantai Nanshan University has far exceeded this regulation, indicating that the university possesses a certain amount of high-quality teaching resources. At the same time, the proportion of teachers with doctoral degrees is relatively small, leaving considerable room for improvement in terms of teachers' academic qualifications. In terms of professional titles, the university currently has 51 professors, 136 associate professors, 216 lecturers, 76 teaching assistants, and 63 teachers who have not been rated. The structural distribution is shown in Figure 2.5 The professional titles of full-time teachers in the college are concentrated at the lecturer level, accounting for 40%. The proportion of teachers who have not been rated accounts for 12%. This is due to the fact that the university recruits new teachers every year, and they have not yet undergone the evaluation and appointment process. On the other hand, since there are no additional salary subsidies for junior titles in the university, some young teachers do not intend to work at Yantai Nanshan University for a long time, so they have not participated in the professional title evaluation.

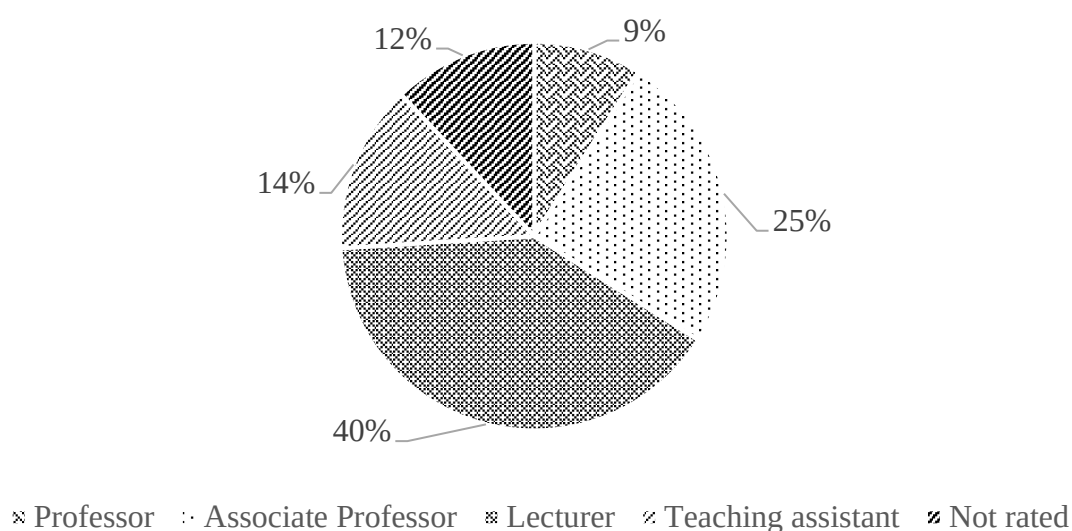


Figure 2.5 - Professional titles of full-time teachers

Source: systematized by the author

The proportion of full-time teachers with associate senior or higher professional

titles (associate professors and professors) reaches 34% from figure 2.2.5, meeting the national requirement that private colleges and universities should have 30% of full-time teachers with associate senior or higher professional titles. However, some of these teachers are retiring or retired professors from public universities who have been introduced, and the university itself has fewer senior professional title teachers trained internally.

In addition, in terms of "double-qualified" teachers, the university currently has 198 such teachers, accounting for 36.53% of the total. According to the latest administrative regulations of the Ministry of Education for applied undergraduate colleges and universities, the proportion of "double-qualified" teachers should be no less than 50%. Obviously, Yantai Nanshan University is far from meeting this standard.

Through the policy of introducing and actively cultivating teachers, Yantai Nanshan University is gradually reducing the student-teacher ratio and improving the quality of teaching, indicating that the school has placed teacher construction in an important position. In the past three years, the number of full-time teachers in the school has also shown a trend of increasing year by year, which can meet the daily teaching needs. From the perspective of age structure, there are more young and middle-aged teachers in the school, and the teaching staff tends to be young. Such a team is relatively vigorous, energetic, and highly motivated. In addition, from the perspective of the proportion of teachers with associate senior professional titles or above, it meets the requirement of the Ministry of Education that the proportion of teachers with associate senior professional titles or above should not be less than 30%.

Table 2.10 - Teacher scale and student-teacher ratio

Items	In 2021	In 2022	In 2023
Number of full-time teachers	391	416	542
Number of part-time teachers	240	242	242
Total teacher population	631	658	784
Number of students enrolled	10589	10866	12160
Teacher-student ratio	20.72	20.23	18.34

(Note: pupil-teacher ratio = Number of students/(full-time teacher + external teacher *0.5))

Source: systematized by the author

Judging from the academic structure of teachers, nearly 80% of the full-time

teachers in the school have graduate degrees, far exceeding the requirement of the Ministry of Education that more than 50% of the full-time teachers in undergraduate universities need to have graduate degrees. All of these indicate that Yantai Nanshan University has a certain number of high-quality teachers among its teaching staff. These are the advantages of Yantai Nanshan University in terms of teachers.

From Table 2.10, we can see that in the past three years, the number of full-time teachers in the school has increased year by year, with an average growth rate of 16%; while the number of external teachers has slightly decreased, and the total number of teachers and its growth rate have also shown a trend of increasing year by year, indicating that the school's investment in teachers has also increased year by year, and the school's previous talent introduction plan has achieved some results.

From the perspective of student-teacher ratio, according to the relevant contents of the "Interim Provisions on the Establishment of Ordinary Undergraduate Colleges", the student-teacher ratio of ordinary undergraduate colleges should be less than or equal to 18. The student-teacher ratio is an indicator reflecting the allocation of teacher resources. Judging from the data of the past three academic years, the student-teacher ratio of Yantai Nanshan University has been decreasing year by year, but it has not yet reached the national standard, so it is necessary to strengthen the construction of teachers in the future.

In addition, from 2021 to 2023, the number of departures from the school in the past three years was 28, 36, and 43 respectively, with an average turnover rate of about 8%. For a university, the occasional departure of full-time teachers is not conducive to the stability of education and teaching. Therefore, Yantai Nanshan University needs to maintain the policy of talent introduction in the future, and at the same time, it should appropriately improve the welfare benefits of teachers and their sense of belonging and identity.

2.3 Analysis of the university's current competitiveness status in comparison to peer institutions

After identifying nine key factors of the internal environment of Yantai Nanshan

University, we invited a school leader, three secondary college presidents, a director of administrative functional department and two professors to form a seven-member expert group. They were asked to grade and score the key internal factors of the university through questionnaires. The details of the questionnaire are attached in Annex A. In the rating, 1 to 4 points were given to each factor, with 1 point representing a major disadvantage, 2 points representing a secondary disadvantage, 3 points representing a secondary advantage, and 4 points representing a major advantage.

After the questionnaire scoring data was obtained, the final ratings were calculated by averaging the scores of each factor, and the results were rounded to integers. The final rating results are shown in Table 2.11.

To objectively and accurately analyze the influence of internal key factors on the development of Yantai Nanshan University, we adopted the entropy weight method to determine the weights of internal key factors.

This article adopted the method of questionnaire survey to conduct quantitative scoring on the importance of each factor, with scores ranging from 1 to 10, where 1 represents the lowest degree and 10 represents the highest degree. The questions designed for the questionnaire are attached in Annex B.

Table 2.11 - Factors influencing the internal environment of Yantai Nanshan University

Key internal factors	serial number	Rating
Advantages:		
Geographical location and campus environment	S1	4
Popular professional setting, and the school's engineering professional characteristics are more obvious	S2	4
The teaching staff has vitality and meets the requirements of the national title structure	S3	3
There are complete places for experiment and practice	S4	4
Disadvantages:		
The management system is too centralized	W1	1
With higher tuition, the quality of the student pool decreases	W2	2
Brain drain, doctor, double qualified teachers lack	W3	1
Teaching room and book resources are not up to standard	W4	2
The investment in scientific research is small, and the scientific research results are weak	W5	1

Source: systematized by the author

In selecting survey participants, in order to fully cover the job levels of the surveyed

personnel, four types of personnel were selected for sampling survey, including school management (such as presidents, presidents of secondary colleges, directors of various departments, etc.), frontline teachers, teaching assistants, and other teaching support staff. After the questionnaire was designed, the questionnaire was distributed through the internet using the Questionnaire Star platform. A total of 28 questionnaires were collected, all of which were valid.

After obtaining the scoring data from the questionnaire survey, the entropy weight method was used to determine the weight model for calculating the weights of each factor. The calculation principle of the model has been explained in Chapter 1, so it will not be repeated here. The final weights of each factor are shown in Table 2.12.

Table 2.12 - Weight of internal environmental impact factors

Key internal factors	entropy value	utility value	weight
Advantages:			
Geographical location and campus environment	0.9964	0.0036	7.05%
Popular professional setting, and the school's engineering professional characteristics are more obvious	0.9945	0.0055	10.88%
The teaching staff has vitality and meets the requirements of the national title structure	0.9981	0.0019	3.69%
There are complete places for experiment and practice	0.9947	0.0053	10.49%
Disadvantages:			
The management system is too centralized	0.9949	0.0051	10.06%
With higher tuition, the quality of the student pool decreases	0.9952	0.0048	9.52%
Brain drain, doctor, double qualified teachers lack	0.9969	0.0031	6.13%
Teaching room and book resources are not up to standard	0.9927	0.0073	14.34%
The investment in scientific research is small, and the scientific research results are weak	0.9957	0.0043	8.50%

Source: systematized by the author

Based on the above analysis of the management system, infrastructure and other operational conditions, discipline construction and scientific research, faculty, and enrollment of Yantai Nanshan University, we can summarize its internal environmental advantages and disadvantages as follows:

(1) Advantages:

① Location and campus environment

The university is located in the beautiful coastal city of Yantai, which has a strong momentum for economic development as a special economic zone, a high demand for

talents, mature urban construction, and a pleasant climate and environment, enjoying good location advantages. In addition, the campus environment is beautiful, attracting many film and television crews to shoot, which has also attracted a lot of students.

② Popular major settings and distinct engineering specialties

In terms of major settings, Yantai Nanshan University can meet the direction of social development and compensate for the market's lack of demand for engineering talents. Its majors have distinct characteristics, with many provincial first-class majors being engineering-oriented, demonstrating strong engineering advantages. These are the advantages of G College in major settings.

③ Complete experimental and internship facilities with sufficient equipment investment

As a comprehensive institution, Yantai Nanshan University has considerable investment in experiments, equipment, and instruments. The average cost value of its experimental and equipment instruments is 74.46% higher than the national standard, indicating that the university has made significant investments in student practical teaching, which is conducive to the cultivation of applied talents and in line with the school's orientation.

④ Dynamic faculty that meets the requirements of the national professional title structure

Yantai Nanshan University has continuously introduced talents, increased investment, and actively cultivated them to reduce the teacher-student ratio and improve teaching quality, demonstrating that the school attaches great importance to faculty construction. In the past three years, the number of full-time teachers in the school has also shown a trend of year-on-year growth, meeting the daily teaching needs. From the perspective of age structure, the majority of teachers in the school are young and middle-aged, making the faculty younger, more dynamic, enthusiastic, and motivated. In addition, the proportion of teachers with associate senior or higher titles meets the requirement of no less than 30% set by the Ministry of Education. These all indicate that Yantai Nanshan University possesses a certain amount of high-quality teaching resources, which are the advantages of the school's faculty resources.

(2) Disadvantages

① Overly centralized management system

From the perspective of the college's management system, Yantai Nanshan University, as a private institution, is closer to the management model of a business enterprise compared to public schools. It has a considerable degree of independence and is not subject to excessive restrictions from educational authorities. The board of directors holds decision-making power over all critical aspects of the school, including its development, appointment of key personnel, faculty size, and financial control. This concentration of power, along with its familial management style, is not conducive to the long-term development of the institution.

② High tuition fees leading to a decline in the quality of student intake

Although the overall enrollment trend at Yantai Nanshan University is upward, the high tuition fees have negatively impacted the school's enrollment rate. Excessive tuition increases are disadvantage attracting students and have led to the loss of some high-quality student sources. Additionally, the decline in the admission scores of the university, from requiring a score 15-20 points above the undergraduate line to now only requiring a score within 10 points of the undergraduate line, has resulted in a decrease in the quality of students enrolled. These are disadvantages for Yantai Nanshan University.

③ Brain drain and a lack of doctoral and dual-qualified teachers

While Yantai Nanshan University has met the national requirement of a student-to-teacher ratio of greater than 18, the combined ratio of full-time and contracted teachers to students has been decreasing year by year in recent years, especially in 2022, when it decreased from 20.23 to 18.34, approaching the critical point of the standard. This indicates that the school still has room for improvement in teacher resources. Additionally, the average annual turnover rate of teachers at the university is 8%, which is not conducive to the stability of teaching. In terms of teacher qualifications, the proportion of doctoral faculty stands at 10%, which is lower than the requirement set by the Ministry of Education that the proportion of faculty with doctoral degrees should be no less than 15%. There is considerable room for improvement in the academic structure. Similarly,

the proportion of dual-qualified teachers is only 36.53%, also falling short of the Ministry of Education's requirements. These are disadvantages in terms of faculty resources at Yantai Nanshan University.

④ Substandard infrastructure in some areas

In terms of teaching facilities, although Yantai Nanshan University meets the national standards for school establishment in terms of land area and building area, if the school continues to expand its enrollment, these facilities may not be able to fully meet the needs of students. Currently, there is already a shortage of classroom space. Regarding library resources, although the school has been gradually increasing the number of books in its library, the current per-student book resources do not meet national standards. These are disadvantages for Yantai Nanshan University.

⑤ Limited investment in research and weak research outcomes

Although the research situation at Yantai Nanshan University has shown an upward trend in recent years, due to the short history of the institution and its predominance of young and middle-aged teachers, there are no relatively mature research teams or systems. Therefore, there is still a significant gap in the total volume and quality of research compared to public schools. Additionally, the funding for Yantai Nanshan University mainly comes from student tuition fees. After deducting expenses for teacher salaries, experimental equipment, and the maintenance of buildings and other hardware facilities, the amount available for research is relatively small.

Based on the above summary, the following table lists the factors that affect the advantages and disadvantages of the internal environment of Yantai Nanshan University, with each factor assigned a specific number for reference. (Please note that the specific table cannot be directly inserted into the text, but you can create it separately based on the information provided.)

In this section, we will base on the macro environment of Yantai Nanshan University and adopt the PEST analysis tool in strategy to conduct a detailed analysis of its external environment. After analyzing the macro environment and competitive environment of Yantai Nanshan University, we have summarized the opportunities and threats affecting the development of the university as follows:

(1) Opportunities

① Support from the national and local governments for private higher education policies

The state has successively issued multiple policies and regulations to encourage and support the development of private universities; the Shandong Provincial Government has also issued several policies such as "Several Opinions of the Shandong Provincial People's Government on Further Supporting and Regulating the Development of Private Higher Education" and "Interim Measures for the Supervision and Administration of Profit-making Private Schools in Shandong Province" to support the development of private universities operating in Shandong Province. The national and local governments have given affirmation to private higher education in terms of legal status, and also provided great policy support in terms of school size and fees. Against the backdrop of a good political and legal environment, Yantai Nanshan University will have great market development potential. The university should seize the opportunity to enhance its comprehensive strength.

② National economic growth and increase in per capita income of residents

The development of economy and education often rely on each other. China's economy is steadily improving, and economic development has driven the progress of education in China. As the national fiscal expenditure on education increases year by year, the national awareness of education will continue to improve, helping to promote the development of private universities. The economic growth of Shandong Province, where Yantai Nanshan University is located, ranks in the top ten in the country. The rapid growth of the local economy provides a material foundation and funding guarantee for the development of local higher education. The increase in local public education funding in Shandong Province will also contribute to the development of local private universities. As the economy grows and national income increases, the proportion of family funds invested in education will also increase, and the number of people who drop out of school due to financial problems will gradually decrease. With the assistance of these environmental factors, universities can obtain more students.

③ The reform of college entrance examination admission batches has expanded

the scope of private university student sources.

Under the traditional mode of admission by batches, private universities were almost always placed in the later batches such as the second or third batch, which limited their enrollment scope and was not conducive to the competition for student sources. However, under the new college entrance examination reform, the merger of batches has given private universities the opportunity to compete with other universities for advantageous student sources. In this regard, private universities should continuously strengthen brand building, enhance overall strength, strengthen professional construction, improve research capabilities, and enhance competitiveness to better attract high-quality student sources.

④ The growth of undergraduate student sources and society's pursuit of higher education qualifications.

In 2022, the number of students enrolled in higher education in China reached 44.3 million, ranking first in the world. The number of students that can be accommodated by existing public institutions is limited, and the remaining student sources can be filled by private universities. With the progress of society, both employers and individual students have been pursuing higher education qualifications in recent years. Compared with vocational colleges, undergraduate universities have a higher level in cultivating student qualifications, so private undergraduate colleges still occupy a certain advantage in the higher education ranks. In addition, the recent "postgraduate entrance examination fever" has also provided a development direction for the future development of private undergraduate universities. In this atmosphere and trend, it is an opportunity for private universities to enhance their educational strength and have great potential for development from the perspective of applying for master's programs.

⑤ The development of information network technology has broadened the model of higher education.

The development of information networks has provided feasibility for the innovation of educational models. Teachers can use the internet to guide students to actively explore and learn with computers, mobile phones, and other devices, and carry out teaching activities on social media such as WeChat. Schools can also use this to

develop models such as correspondence courses and online education. The development of online education through the internet frees schools from factors such as the number of students, classrooms, and seats, which is an opportunity for private universities. In addition, the country's opening up of online educational resources allows private universities, whose library resources may not be as good as those of public universities, to obtain excellent office and educational resources.

⑥ The rise of new engineering disciplines and the increasing attention of the country and society to engineering colleges.

In today's job market, there is a serious shortage of talents in new engineering disciplines, leading to increasing attention from the country and society in this field. The concept of new engineering disciplines is constantly being upgraded, and discussions are deepening. This is an opportunity for Yantai Nanshan University, which focuses on engineering education. It should seize the changes of the times, deepen its understanding of new concepts under the background of "new engineering", carry out deep cooperation between schools and enterprises, focus on the cultivation of dual-qualified teachers, and other measures to improve the school's practical teaching abilities and cultivate application-oriented professionals in the "new engineering" era. This will not only enhance the strength of the school but also enhance its reputation.

(2) Threats

① Increasingly fierce competition in the industry of undergraduate institutions of higher learning.

According to the "2021 National Education Development Statistics Bulletin" issued by the Ministry of Education, there are 390 ordinary private undergraduate institutions and 22 undergraduate-level vocational schools in China. According to statistics from the Ministry of Education, there were 1,243 undergraduate institutions in China in 2017, and by 2021, the number had reached 1,270. With the increase in national undergraduate institutions of higher learning, competition between undergraduate institutions is becoming increasingly fierce.

② Deep-rooted traditional prejudice against private institutions.

Due to historical conditions and traditional beliefs, society has a low level of recognition for private colleges and universities. People's subjective consciousness believes that the conditions for running private colleges and universities, their management level, teaching quality, and teacher quality are all inferior to public institutions of higher learning, which is not conducive to the development of private colleges and universities.

③ Threats from potential entrants.

The "Opinions on Promoting the High-Quality Development of Modern Vocational Education" issued by the state clearly states that by 2025, the enrollment scale of vocational undergraduate education should not be lower than 10% of the enrollment scale of higher vocational education. With the support of relevant policies, the scale of vocational colleges upgrading to undergraduate institutions cannot be underestimated. After upgrading to undergraduate institutions, vocational colleges will inevitably compete with private undergraduate institutions for undergraduate-level students.

With the country's opening up and the development of the "Belt and Road" initiative, China's huge student market has attracted a large number of foreign institutions of higher learning. Many foreign universities are constantly strengthening cooperation with domestic universities or establishing educational cooperation projects. These Sino-foreign cooperative universities, many of which have strong reputations, pose a significant threat to private colleges and universities.

④ The competition for students is becoming increasingly fierce, and the competitiveness for high-quality students is relatively low.

With the reduction of college entrance examination enrollment batches and the merger of all undergraduate enrollment batches, although it has broadened the enrollment scope for private universities, it has also intensified the competition for students among universities. In the increasingly fierce competition for students, Yantai Nanshan University has higher tuition fees among similar colleges of the same level, and its overall strength ranking is also at the lower end, resulting in poor competitiveness in the competition for high-quality students.

⑤ Changes in the mode of filling out college entrance examination volunteer forms,

with candidates and parents paying more attention to the professional strength of universities.

With the reform of the college entrance examination, students now apply for colleges based on the professional enrollment cutoff line. The focus of candidates has shifted from the institution to the major. In such a situation, the professional strength, duration, and characteristics of running a university have become the most important factors in filling out volunteer forms for the exam. However, private universities often have a short history of running and high tuition fees, which often leads to a loss of competitive advantage among high-quality student groups. Therefore, private universities can only attract more high-quality students by continuously strengthening their professional construction.

⑥ The decline in the population of students eligible for higher education in the future.

Since 2020, the number of births in China has been decreasing year by year, and the peak of the country's birthrate has ended. Subsequently, the number of students enrolling in school will decrease year by year, and the number of students eligible for higher education will also decrease in the future. At that time, private universities will face greater threats.

After identifying 12 key factors in the external environment of Yantai Nanshan University, we invited a school leader, three secondary college presidents, a director of administrative functional department, and two university professors to form a seven-member expert group. They were asked to grade and score the key internal factors of the university through questionnaires. The details of the questionnaire are attached in Annex C. In the rating, a score of 1 to 4 was given to each factor to measure the response degree of the existing strategy to changes in each factor under the influence of the established factors. Among them, 4 points represented a very good response, 3 points represented a good response, 2 points represented an average response, and 1 point represented a very poor response.

After obtaining the questionnaire scoring data, the final ratings were calculated by averaging the scores of each factor, and the results were rounded to integers. The final

rating results are shown in Table 2.13.

Table 2.13 - Rating of key factors of external environment of Yantai Nanshan University

Key internal factors	serial number	Rating
Advantages:		
National and local government support for private higher education policies	01	4
China's economy continues to grow, and per capita household income continues to rise	02	4
The reform of the admission batches of the college entrance examination has expanded the range of students in private colleges and universities	03	2
The growth of undergraduate students and society's pursuit of higher education	04	3
The development of information network technology has broadened the mode of higher education.	05	2
The rise of new engineering, the importance of the state and society to engineering colleges and universities	06	4
Disadvantages:		
The industry competition among colleges and universities is increasingly fierce	T1	3
The traditional prejudice against private colleges runs deep in society	T2	2
The competitive threat of potential entrants in higher vocational colleges, sino-foreign cooperation in running schools and other industries	T3	1
The competition for students is becoming more and more fierce, and the competitiveness of private colleges is low in the competition for high-quality students	T4	1
With the change of the mode of college entrance examination, candidates and parents pay more attention to the professional strength of the school	T5	2
With the decline of fertility rate, the population of higher education age will gradually decrease in the future	T6	2

Source: systematized by the author

To objectively and accurately analyze the influence of external key factors on the development of Yantai Nanshan University, we adopted the entropy weight method to determine the weights of external key factors. The final weights of each factor are shown in Table 2.14.

Table 2.14 Weight calculation of external environmental impact factors

Key internal factors	entropy value	Utility value	Weight
1	2	3	4
National and local government support for private higher education policies	0.995	0.005	8.56%
China's economy continues to grow, and per capita household income continues to rise	0.9944	0.0056	9.75%
The reform of the admission batches of the college entrance examination has expanded the range of students in private colleges and universities	0.9969	0.0031	5.37%

Continuation of Table 2.14

1	2	3	4
The growth of undergraduate students and society's pursuit of higher education	0.9978	0.0022	3.76%
The development of information network technology has broadened the mode of higher education.	0.9943	0.0057	9.91%
The rise of new engineering, the importance of the state and society to engineering colleges and universities	0.9971	0.0029	5.05%
The industry competition among colleges and universities is increasingly fierce	0.9965	0.0035	5.99%
The traditional prejudice against private colleges runs deep in society	0.9921	0.0079	13.59%
The competitive threat of potential entrants in higher vocational colleges, sino-foreign cooperation in running schools and other industries	0.9963	0.0037	6.45%
The competition for students is becoming more and more fierce, and the competitiveness of private colleges is low in the competition for high-quality students	0.9928	0.0072	12.43%
With the change of the mode of college entrance examination, candidates and parents pay more attention to the professional strength of the school	0.994	0.006	10.35%
With the decline of fertility rate, the population of higher education age will gradually decrease in the future	0.9949	0.00551	8.78%

Source: systematized by the author

To make the determination of key factor weights more objective, this article adopted a questionnaire survey method to quantitatively score the importance of each factor, with scores ranging from 1 to 10, where 1 represents the lowest degree and 10 represents the highest degree. The questions designed for the questionnaire are attached in Annex D.

In selecting survey participants, in order to fully cover the job levels of the surveyed personnel, four types of personnel were selected for sampling survey, including school management (such as presidents, secondary college presidents, directors of various departments, etc.), frontline teachers, teaching assistants, and other teaching support staff. After the questionnaire was designed, it was distributed online through a questionnaire platform to collect the responses. A total of 28 questionnaires were collected, all of which were valid.

CHAPTER 3

STRATEGIES FOR IMPROVING UNIVERSITY COMPETITIVENESS

3.1 Building and maintaining a strong institutional brand to enhance competitiveness and attract top talent

Based on the analysis of the internal and external environmental factors of Yantai Nanshan University in Chapter 2, we have analyzed the internal strengths and weaknesses, as well as the external opportunities and threats that affect the development of Yantai Nanshan University. Now, we summarize the key factors of SWOT analysis of Yantai Nanshan University, as shown in Table 3.1

Table 3.1 - Internal and external environmental factors of Yantai Nanshan University

Internal advantage (S)	Internal disadvantage (W)
S1. School location and campus environment S2. Popular major Settings, and the school's engineering major features are relatively obvious S3. Characteristics of comprehensive management of college students S4. The teaching staff is dynamic and meets the requirements of the national title structure S5. Complete facilities for experiment and practice	W1. The management system is too centralized W2. With higher tuition, the quality of students decreases W3. Brain drain, lack of doctors and double-qualified teachers W4. Lack of teaching room and book resources W5. Low investment in scientific research and weak scientific research results
External Opportunities (O)	External threat (T)
O1. National and local government policies on private higher education support of policy O2. The national economy continues to grow, and the per capita income of residents continues to rise O3. The reform of the admission batches of the college entrance examination has expanded the range of students in private colleges and universities O4. The growth of undergraduate students and society's pursuit of higher education O5. The entry of information network technology broadens the mode of higher education. O6. The rise of new engineering, the importance of the state and society to engineering colleges and universities	T1. The industry competition among colleges and universities is becoming increasingly fierce T2. The traditional prejudice against private colleges is deeply rooted in society T3. Competitive threats from potential entrants in industries such as graduate promotion in higher vocational colleges and Chinese-foreign cooperation in running schools T4. The competition for students is becoming more and more fierce, and the competition for high-quality students in private colleges is relatively low T5. Changes in the filling mode of college entrance examination, candidates and parents pay more attention to the professional strength of schools T6. With the decline of fertility rate, the population of age for higher education will gradually decrease in the future

Source: systematized by the author

Based on the analysis of the internal and external environmental factors of Yantai Nanshan University in Chapter 2, we have analyzed the internal strengths, weaknesses, external opportunities, and threats that affect the development of Yantai Nanshan University. Now, we summarize the key factors of the SWOT analysis of Yantai Nanshan University as follows 3.2:

Table 3.2 - SWOT matrix of Yantai Nanshan University

The SO Strategy	WO strategy
1.Consolidate the characteristics of engineering majors, strengthen the construction of "new engineering", and improve the characteristic majors (S2, O2) 2. Seize the favorable policy opportunities, grasp the location advantages, expand the enrollment scale (S1, O1, O2, O3) 3. Consolidate existing high-quality resources and explore diversified operations (S3, S4, S5, O4, O5)	1. Take advantage of government policies to introduce high-quality talents and "double-qualified" teachers and strengthen the construction of teachers (W3, O1) 2. Improve the level of operation and management according to social needs, improve system construction, improve infrastructure, increase investment in scientific research, and enhance the competitiveness of the university (W1, W4, W5, O2, O4) 3. Enhance school-enterprise cooperation, further expand the joint training projects between schools and enterprises, and explore the "order-type" talent training mode (W2, O6)
The ST Strategy	WT strategy
1. Combined with the characteristics of the school, a talent training mode with engineering characteristics should be developed to improve the overall education level and attract more high-quality students (S2, T1, T2, T4, T5). 2. Integrate superior resources of the school, expand business areas, and implement relevant diversification (S1, S2, S3, S5, T3, T6)	1. Appropriately reduce tuition fees to enhance the competitiveness of students and attract high-quality students (W2, T1, T4, T6) 2. In the face of fierce competition, cultivate existing full-time teachers and strengthen the construction of self-owned teachers (W3, T1)

Source: systematized by the author

(1) The SO Strategy

The SO strategy is a combined strategy of strengths and opportunities. With the popularization of higher education, people have higher requirements for teaching quality, and the national and local governments have provided unprecedented policy support for the development of private universities. Yantai is the core area of Shandong Province, with rapid economic development and mature urban construction. Yantai Nanshan University should seize its regional advantages in Yantai, a coastal special economic zone, appropriately expand the enrollment scale, and explore diversified forms of running

schools with the support of the rapid development of information network technology.

With the rise of "new engineering", as a comprehensive university, Yantai Nanshan University should consolidate its original engineering professional characteristics. At the same time, following the pace of the times, it should set up "new engineering" majors, strengthen discipline characteristics, and enhance the competitiveness of the university's majors.

Faced with the increasing pursuit of high academic qualifications in society, Yantai Nanshan University should integrate all its advantageous resources, enhance its comprehensive strength, actively apply for doctoral degree training units, and make preparations for establishing doctoral programs in the future.

(2) WO strategy

The WO strategy is a combination of weaknesses and opportunities, aiming to use external opportunities to compensate for internal weaknesses. In the "Several Opinions on Further Supporting and Regulating the Development of Private Higher Education" issued by Shandong Province, it is clearly stated that teachers from private universities will be included in various special programs for training and development of provincial university teachers, and a strong teacher engineering for private universities will be implemented. Therefore, Yantai Nanshan University should seize the policy advantages, increase efforts to introduce high-quality talents and "double-qualified" teachers, and strengthen the construction of the teaching staff.

With the rise of "new engineering" and the shortage of "new engineering" talents in society, Yantai Nanshan University should cultivate talents market-oriented, enhance school-enterprise cooperation, further expand the joint training projects between the university and enterprises, and explore the "order-based" talent training model. After deepening cooperation with enterprises, Yantai Nanshan University can absorb some funds for running schools from partner enterprises, improve infrastructure, increase investment in scientific research, and enhance the overall competitiveness of the university.

(3) The ST Strategy

The ST strategy is a combination of strengths and threats, where enterprises utilize

internal strengths to reduce the impact of external threats. Therefore, under this strategy, Yantai Nanshan University should combine its professional characteristics to create a talent training model with engineering features, enhance the overall educational level of the university, and attract more high-quality students. In addition, as the educational type of Yantai Nanshan University is relatively single, focusing on full-time undergraduate education, the university should integrate advantageous resources, broaden its educational approach, and develop non-full-time academic education, such as adult education and self-study exams, as well as actively seek cooperation with foreign universities.

(4) WT strategy

The WT strategy is a combination of weaknesses and threats, which is a defensive strategy aimed at reducing internal weaknesses and avoiding external threats. Currently, the tuition fees of Yantai Nanshan University are relatively high within Fujian Province. Facing the increasingly fierce competition for higher education students, Yantai Nanshan University can appropriately reduce tuition fees to enhance the competitiveness of its student recruitment and ensure the reporting rate of the university. In terms of faculty development, it is necessary to cultivate the existing full-time teachers and strengthen the construction of the teaching staff of current teachers.

The weighted score of each factor is obtained by multiplying the weight of each factor by its rating score. Then, the weighted scores of all factors are added together to get the total weighted score of the enterprise. After the calculation is completed, we get an Internal Factor Evaluation (IFE) Matrix for Yantai Nanshan University, as shown in Table 3.3.

Table 3.3 - Evaluation of internal environmental factors

Key factor	Weight coefficient	rate	Weighted score
1	2	3	4
School location and campus environment	7.49%	4	0.30
Popular specialty Settings, and the university's engineering specialty features are more obvious	10.57%	4	0.42
College system student comprehensive management features	17.71%	3	0.53
The teachers are energetic and motivated	3.93%	3	0.12
Complete experiment and practice places	10.30%	4	0.41
The management system is too centralized	10.15%	1	0.10

Continuation of Table 3.3

1	2	3	4
Tuition fees are higher and the quality of students is lower	9.86%	2	0.21
Brain drain, doctor, double teacher shortage	6.50%	1	0.07
Teaching room, library resources are insufficient	14.22%	2	0.28
Research investment is low, research results are weak	9.27%	1	0.09
total	100.00%	-	2.52

Source: systematized by the author

From the matrix, we can see that the total weighted score of the internal environment of Yantai Nanshan University is 2.52, slightly higher than the average of 2.5. This shows that the internal environment of Yantai Nanshan University has certain advantages, but the disadvantages cannot be ignored for the school's development.

The weighted score of each factor is obtained by multiplying the weight of each factor by its rating score. After adding up the weighted scores of all factors, we get the total weighted score of the whole enterprise. After the calculation is completed, we get an External Factor Evaluation (EFE) Matrix for Yantai Nanshan University, which is shown in Table 3.4.

Table 3.4 - Evaluation of external environmental factors

Items	Weight coefficient	rate	Weighted score
1	2	3	4
National and local government support for private higher education policies	8.56%	4	0.34
National and local government support for private higher education policies	9.75%	4	0.39
The reform of college entrance examination batch has expanded the scope of students in private colleges and universities	5.37%	2	0.11
The growth of undergraduate students and society's pursuit of higher education	3.76%	3	0.11
The development of information network technology broadens the mode of higher education.	9.91%	2	0.20
With the rise of new engineering, the state and society attach importance to engineering colleges	5.05%	4	0.20
Industry competition among colleges and universities is becoming increasingly fierce	5.99%	3	0.18
Society's traditional prejudice against private colleges runs deep	13.59%	2	0.27
The competition threat of potential entrants in higher vocational colleges, Sino-foreign cooperative education and other industries	6.45%	1	0.06
The competition of students is becoming more and more fierce, and the competition of high-quality students is low in private colleges and universities	12.43%	1	0.12

Continuation of Table 3.4

1	2	3	4
With the change of the college entrance examination voluntary filling mode, candidates and parents pay more attention to the professional strength of the school	10.35%	2	0.21
With the decline of the fertility rate, the population of the right age for higher education will gradually decrease in the future	0.09	2	0.18
total	100.0%	-	2.38

Source: systematized by the author

From the matrix, we can see that the weighted total score of the external environment of Yantai Nanshan University is 2.38, which is lower than the average of 2.5. This indicates that Yantai Nanshan University has not been able to effectively utilize opportunities to resist external threats, and has not fully leveraged opportunities. It has failed to use opportunities to reduce the potential adverse effects of external threats. Therefore, in future operations, it should seize opportunities, expand the influence of opportunities, and minimize the potential adverse effects of threats.

For Yantai Nanshan University, a private institution of higher learning, its main competitors are still the similar private colleges within Shandong Province. There are a total of 4 private undergraduate-level science and engineering colleges in Shandong that are similar to Yantai Nanshan University. Based on the analysis of the educational levels, orientations, and scales of these four private colleges, the main competitors of Yantai Nanshan University in Shandong include Shandong Xiehe University and Qilu Institute of Technology. Table 3.5 compares the infrastructure, enrollment scale, faculty situation, and tuition fees of three private science and engineering colleges: Yantai Nanshan University, Shandong Xiehe University, and Qilu Institute of Technology.

Table 3.5 - Main competitors of Yantai Nanshan University

school	Yantai Nanshan University	Shandong Xiehe University	Qilu Institute of Technology
1	2	3	4
Geographical position	Yantai	Jinan	Jinan
School-running level	Undergraduate (Engineering)	Undergraduate (Engineering)	Undergraduate (Engineering)
Administrative teaching room per student (SQM)	16.14	17.59	15.92
Average book (volume)	76.8	90	80.82

Continuation of Table 3.5

1	2	3	4
Per capita equipment value (ten thousand yuan)	0.8	0.8	0.9
Enrollment scale	The enrollment scale is general, of which Shandong students accounted for 47.89%. Students from inside and outside the province are better.	The enrollment scale is general, of which Shandong students account for 56.87%	The enrollment scale is large, of which 77.7% are from Shandong
Registration rate (three-year average)	93.98%	95.27%	94.61%
Acceptance rate (three-year average)	99.95%	92.71%	98.05%
Number of full-time students	12160	17289	14906
Number of teachers	784	921	836
Student-teacher ratio	18.34	19.1	18.14
Proportion of teachers with senior professional titles	34.50%	43.99%	47.72
Tuition Fee (Yuan)	25000-35000	23000-25500	21800-23800
2023 Alumni Association row	Private I class 53	Private I class 42	Private I class 27
Baidu search index attention	1475	1298	1037

Source: (The above data comes from the official websites of each school)

From the above comparative data, we can observe several key points: Firstly, Yantai Nanshan University holds a certain advantage in terms of geographical location, being located in a coastal city, which is relatively attractive to students and their families. Secondly, in terms of basic conditions, the three universities are comparable. However, among the library resources, Yantai Nanshan University falls short of the average standard per student, indicating a slight deficiency. Thirdly, regarding enrollment, all three schools involve both regular undergraduate and top-up degree programs. Although Yantai Nanshan University has a moderate enrollment scale with a relatively lower attendance rate compared to the other two schools, it boasts a higher admission rate, indicating an overall higher quality of student intake. Fourthly, the proportion of senior-title teachers at Yantai Nanshan University is relatively low, reflecting a generally lower overall teaching quality of the university's faculty. Fifthly, the tuition fees at Yantai Nanshan University

are the highest among the three universities. The high tuition fees deter many families, which primarily accounts for Yantai Nanshan University's highest admission rate yet lowest attendance rate compared to the other two schools.

In summary, compared with its major competitors in the industry, Yantai Nanshan University has a relatively strong competitive advantage in geographical location. However, its comprehensive competitiveness in infrastructure, teaching resources, enrollment status, and influence is relatively weak, all of which pose threats to Yantai Nanshan University.

3.2 Strategies for enhancing teaching and learning methodologies to promote academic excellence

"To cultivate talents takes a century, and to establish a prestigious university also takes a century." This is the educational aspiration of Yantai Nanshan University. The university takes the construction of high-quality educational culture and the establishment of a top-tier university as important goals for its work. It comprehensively deepens the reform of education and teaching, takes market demand as the orientation, fulfills the mission of serving local economic and social development, and uses innovation and reform as the driving force to promote the comprehensive, coordinated, and sustainable development of the university's educational cause.

With market demand as its orientation and the improvement of the university's overall strength and profitability as its ultimate goal, Yantai Nanshan University needs to establish a long-term vision for 2030 in order to gradually achieve this goal. The specific goals are as follows:

(1) Overall Goal

Through 10 years of efforts, the university aims to form a relatively clear educational characteristic, focusing on improving the capacity of educating people, led by the construction of high-quality educational culture, and supported by the optimization of the teaching staff. It aims to cultivate outstanding talents with comprehensive development in morality, intelligence, physical fitness, aesthetics, and labor through a

unique educational model. The university strives to make significant progress in the quality of education and teaching and the level of management, so that its overall level and reputation in education rank among the top of similar institutions in the province and gain greater influence and popularity nationwide.

(2) Specific Goals

① Possess a good management mechanism and order for private universities. Seriously practice the modern university concept and modern university system; promote the more efficient operation of the modern university governance system of "president's responsibility, party committee supervision, professorial governance, and democratic management"; deeply integrate modern network information technology with education and teaching; further improve the teaching quality evaluation system of supervision to effectively improve the quality of education and teaching.

② Strive to become a pilot construction university for the cultivation of professional doctoral degree granting rights in Shandong Province by 2025, with an enrollment of 13,000 students; pass the undergraduate education and teaching audit assessment of the Ministry of Education by 2026; strive to obtain professional doctoral degree granting rights by 2029, stabilize the enrollment at around 14,000 students, and have more than two professionally certified majors.

③ Establish a stable and sufficient teaching staff with high-quality teaching and research capabilities, gradually achieving the "three highs" (high remuneration, high threshold, and high requirements) for the teaching staff. Through the implementation of measures such as the "Hundred Doctoral Program" and the "Young and Middle-aged Teacher Improvement Program," the proportion of full-time teachers will reach over 75%, the proportion of "double-qualified" teachers will reach over 55%, the proportion of teachers with doctoral degrees among the total number of full-time teachers will reach over 30%, the proportion of teachers with senior titles among the self-owned full-time teachers will reach over 45%, and the proportion of self-owned full-time teachers with international exchange, study abroad, or research experience will reach over 25%.

④ Possess strong overall capabilities in education and teaching, and take a

scientific, reasonable, and distinctive path in educating people. Establish a high-level talent training system; promote the more effective operation of the trinity talent training model of "liberal arts education, knowledge education, and ability cultivation," significantly enhancing student learning outcomes and teachers' ability to educate people. Maintain a graduation employment rate of over 97% for each graduating class, and achieve a postgraduate entrance examination rate of 10% for graduating students.

⑤ Achieve remarkable results in education and teaching reform, with increasingly mature discipline construction and leading positions in professional construction among similar institutions. Optimize discipline structure and resource allocation, take excellent discipline construction as the leader, build key disciplines, and drive the overall improvement of discipline construction levels. Strive to establish 1-3 provincial key disciplines and 4-6 university-level key disciplines, forming 2-3 first-class discipline groups. Further build a professional chain that adapts to the development needs of the country's pillar industries and strategic emerging industries. Stabilize the number of undergraduate majors at around 40, forming a professionally structured, distinctive, and advantageous layout.

⑥ Form a school-running characteristic with both clear theoretical generalizations and specific practical support.

⑦ Clarify the status of secondary colleges as the main body of school-running, with high enthusiasm for school-running, initial achievements in school-running, and a comprehensive improvement in talent cultivation capabilities.

⑧ Form a unique and complete educational culture of Shandong Yantai Nanshan University that has good educational functions internally and significant influence externally.

Yantai Nanshan University needs to establish a long-term vision for 2030 in order to gradually achieve this goal. The summary is shown in Table 3.6

Based on the comprehensive and systematic qualitative and quantitative analysis of Yantai Nanshan University, combined with the analysis results of internal and external environmental factors, according to the SWOT matrix analysis, Yantai Nanshan

University should adopt a growth strategy under the SO combination and a diversified business strategy under the ST combination for its overall strategic choice. The reasons are as follows:

Table 3.6 - Yantai Nanshan University for 2030 achieve this goal

Overall Goal	The university strives to make significant progress in the quality of education and teaching and the level of management, so that its overall level and reputation in education rank among the top of similar institutions in the province and gain greater influence and popularity nationwide.
Specific objectives	① Possess a good management mechanism and order for private universities.
	② strive to obtain professional doctoral degree granting rights by 2029, stabilize the enrollment at around 14,000 students, and have more than two professionally certified majors.
	③ Establish a stable and sufficient teaching staff with high-quality teaching and research capabilities, gradually achieving the "three highs" (high remuneration, high threshold, and high requirements) for the teaching staff.
	④ Possess strong overall capabilities in education and teaching, and take a scientific, reasonable, and distinctive path in educating people.
	⑤ Achieve remarkable results in education and teaching reform, with increasingly mature discipline construction and leading positions in professional construction among similar institutions.
	⑥ Form a school-running characteristic with both clear theoretical generalizations and specific practical support.
	⑦ Clarify the status of secondary colleges as the main body of school-running, with high enthusiasm for school-running, initial achievements in school-running, and a comprehensive improvement in talent cultivation capabilities.
	⑧ Form a unique and complete educational culture of Shandong YANTAI NANSHAN UNIVERSITY that has good educational functions internally and significant influence externally.

Source: systematized by the author

Firstly, the growth development strategy under the SO combination is in line with the development status of Yantai Nanshan University. Under the environment of the popularization of higher education and the increasing pursuit of high academic qualifications by society, expanding enrollment scale, improving the quality of education, changing the single type of education, and further developing and growing are in line with the trend of environmental development.

Secondly, based on the continuous improvement of the national economy and the support of national and local government policies, adopting the SO growth strategy will help Yantai Nanshan University fully leverage its own advantages and achieve the two major transformations from "external expansion to internal development" and "from

quantitative accumulation to qualitative improvement".

Thirdly, with the growth strategy under the SO combination as the mainstay and the diversified business strategy under the ST combination as the auxiliary, Yantai Nanshan University can fully leverage its flexible school-running mechanism and good market sensitivity, utilize external opportunities, expand the scale and forms of education, and further explore postgraduate education, broaden international education and continuing education, build a university with engineering as its specialty, establish "new engineering" specialty programs, create a professional brand image, and improve the level of teachers, so as to reduce the pressure of running the school and resist fierce external competition.

In summary, the combination of the SO strategy and the ST strategy can improve the connotative construction of the college, enhance its comprehensive influence, conform to the development laws of the college, and is conducive to the long-term planning and development of Yantai Nanshan University.

The famous strategic management expert Michael Porter proposed three basic strategies in his book "Competitive Strategy", which are: overall cost leadership strategy, differentiation strategy, and focus strategy.

The overall cost leadership strategy refers to achieving the strategic goal of cost-effectiveness by rationally planning the use of funds, appropriately allocating human resources, and reasonably utilizing other resources to reduce personnel, administrative, and consumption costs. If this strategy is adopted to reduce administrative expenses and teacher costs, it will increase the risk of personnel turnover, unstable team development, reduced management level, and lower educational quality for Yantai Nanshan University, which already faces issues such as personnel turnover and low administrative management standards.

The focus strategy involves focusing on a narrow market segment and gaining a comparative advantage by serving a specific customer group. For Yantai Nanshan University, its current educational format is already relatively single, with only ordinary undergraduate and top-up undergraduate students as its sources of enrollment. Facing increasingly fierce competition in the higher education industry and a gradual decline in

the number of eligible higher education students due to the decreasing birth rate, coupled with a lower enrollment rate than its main competitors in the industry, Yantai Nanshan University cannot compete with other universities in ordinary undergraduate enrollment. Therefore, the focus strategy is not suitable for the development of Yantai Nanshan University.

The differentiation strategy involves providing products that are distinct from competitors, achieving exclusivity and monopoly through differentiation, and attracting a wide range of customers. For private universities, their product is educational services, and providing more distinctive and high-quality educational services can gain the favor of more students and parents, thereby increasing the first-choice enrollment rate and attendance rate.

In summary, Yantai Nanshan University should adopt a differentiated development strategy at the competitive level. Firstly, the differentiation strategy aligns with the development trend of Yantai Nanshan University. Based on the current situation of teachers, infrastructure, and enrollment scale, implementing a differentiated strategy can increase market share and enhance competitiveness for attracting high-quality students. Secondly, the differentiation strategy is in line with the actual situation of Yantai Nanshan University. As a private university, Yantai Nanshan University cannot compete with public universities in all aspects. Therefore, we need to enhance competitiveness through differentiation in talent cultivation, major settings, diversified operations, and educational service management.

First, diversified educational courses should be provided. By adding adult education, self-study exams, and other continuing education courses, different educational programs can be offered to different student groups, expanding educational forms and increasing educational operating income.

Second, certification training services should be offered. By establishing a professional certification center, the education service business of certification training can be expanded. As the number of enrolled students increases, the income from certification training will be considerable. In addition to increasing school income, this business will also enhance the market competitiveness of students, killing two birds with

one stone.

Third, the school's property and facilities should be fully utilized to increase income. As the number of students increases, the popularity of shops along the school's pedestrian street is also increasing, and the school can appropriately increase store rents. The school's classrooms, lecture halls, concert halls, etc., can also be rented out during non-teaching hours to increase income. In addition, in recent years, the "Golden Rooster and Hundred Flowers Film Festival" has been held in Yantai, attracting many film crews to come to the city to shoot TV dramas, including many youth campus dramas. The school can take advantage of this opportunity to rent out the school's venues to film crews without affecting normal teaching and student classes. After the above income is increased, it can be invested in the school's infrastructure construction to improve the school's facilities.

Yantai Nanshan University is the only university in Shandong that adopts the college system for student education and management, which is very attractive to students and parents. The college system breaks the "gathering" of students in the same major, enabling students to have broader communication and wider horizons. Students can achieve cross-major communication. It is also because students of different disciplines are gathered together, and there is not much comparability among students of different categories in terms of professional performance. Therefore, in the comprehensive evaluation of students, performance is no longer the only measurement standard. The college aims to cultivate students who are useful talents with high comprehensive quality and comprehensive development.

The professional colleges where students are located focus on teaching and research, while the college is responsible for the overall development of students. Therefore, it is necessary to strengthen the communication and exchange between the college and the school. Otherwise, there will be a situation where the college focuses on students' professional abilities and academic performance as indicators, while the college focuses on students' practical and comprehensive abilities as indicators. There is a lack of communication between the college and the school, and a lack of a link between teaching and practice. Therefore, Yantai Nanshan University should deepen the student education management model with college characteristics and prevent the situation where the "two

skins" operate independently.

The school should be based in Yantai, face the south of Shandong, radiate the whole Shandong Province, and actively adapt to the local economic and cultural development needs in talent allocation. Adhere to the principles of "student-centered, outcome-oriented, and continuous improvement", while ensuring the adaptability of the training program to the needs of regional economic and social development, highlighting practical operability, and striving to achieve structural balance and positive interaction between talent training and talent demand. As an undergraduate university mainly focused on engineering, Yantai Nanshan University should adhere to cultivating applied talents, enhancing cooperation with enterprises, and jointly modifying talent training programs with enterprises based on their employment requirements. The construction of an industry-education integration practical teaching model is conducive to the cultivation of professional applied talents and the seamless connection of employment, while enhancing students' professional abilities and core competitiveness in employment and entrepreneurship. This not only improves the employment rate of students, but also gains widespread recognition from society and enterprises.

Drive the overall professional construction through the high-quality construction of key majors. Fully leverage the exemplary role of civil engineering, international economy and trade, and other majors that have been selected as provincial first-class professional construction projects. Keep up with the pace of first-class professional construction set by Shandong Provincial Education Department, increase the construction efforts of first-class majors within the university, carry out planned and focused construction in batches, establish a preferential support and open competition system, change the past phenomenon of weak investment planning and unobvious benefits, cultivate a group of majors with certain influence in the province, and improve the overall level of disciplines. Plan, adjust, and optimize the professional layout with a strategic mindset of professional clusters, and reasonably allocate human, financial, and material resources for running the university. Strengthen the construction of professional connotations in accordance with the new "national standards", take the needs of the industry as the guidance, take the integration of industry and education, and school-

enterprise cooperation as the path, actively cultivate new engineering and new business majors, set up majors that are urgently needed for regional economic and social development and have a foundation for running the university. Optimize the development direction of majors, adhere to the professional layout dominated by engineering, expand and strengthen existing engineering majors, increase the development efforts of liberal arts and economic majors, strengthen professional characteristics, create professional advantages, and enhance the relevance and contribution of majors to local and industry development.

The inherent impression of engineering students is that they are rigorous and down-to-earth, but not very sensitive to life, art, and literature. To achieve comprehensive education, the university can deepen the school's characteristic "liberal arts" education and enhance students' comprehensive strength. The construction of the general education curriculum for liberal arts education includes liberal arts course teaching, the cultivation of liberal arts behavior, and the influence of liberal arts culture. It builds a variety of effectively linked liberal arts education patterns, including liberal arts teaching courses, disciplinary general courses, classic liberal arts reading, liberal arts lecture teas, liberal arts society clubs, and liberal arts academy communities. This concept is very beneficial for the formation of a characteristic training model, but it needs to be deeply integrated into the construction of the curriculum system. Therefore, the development of liberal arts education should take the construction of the core curriculum system of liberal arts education as the starting point to design liberal arts education courses, which include four categories: humanities and arts, social sciences, natural sciences, and ideological and political education. At the same time, it is also necessary to continuously improve the teaching level of the general courses in liberal arts education. Through liberal arts education, students are guided to independently discriminate and choose in complex social and cultural life, improve their aesthetic awareness and taste, and gain personality strength from it. The university also connects students' knowledge education and ability training through liberal arts education, realizing the characteristic talent training model of "liberal arts education, knowledge education, and ability training" as a trinity.

Firstly, we should strengthen the introduction of high-level talent teams. We will

further optimize and revise the management measures for the introduction of high-level talents in the college, promote the "Hundred Doctors Project", and plan to introduce 100 doctors from key universities, scientific research institutions and other units at home and abroad by 2030. We will focus on introducing high-level talents and key talents from retired servicemen, Yantai Double Hundred Talents, famous universities (research institutions) at home and abroad, as well as enterprises and institutions, and strive to make breakthroughs in the introduction of high-level leading talents and high-level scientific research and innovation teams. We will encourage young teachers to improve themselves, revise the management measures for the improvement and training of college staff, and further improve the policy support for the improvement of doctoral degrees of in-service teachers. We will formulate relevant supporting policies to ensure that talents can be introduced, retained, and perform well, driving and promoting the overall construction level of the school's teaching staff.

Secondly, we need to optimize the talent incentive mechanism, establish and improve the appointment system and post management system, and establish a competitive incentive mechanism. We will promote the reform of the title evaluation system and the evaluation and assessment system, clarify the promotion and elimination mechanism, and form an internal distribution mechanism that rewards more for more work and better pay for better work.

Thirdly, we will complete the construction of the salary system and improve the treatment level of teachers. We will introduce skill-based salaries, emphasizing the incentive for individuals and teams, design new models that are suitable for the development of teaching and administrative staff, and build a scientific and reasonable salary system that is suitable for the development of the school, satisfactory to teaching and administrative staff, and higher than the salary level of similar universities in the region.

Taking Yantai Nanshan University as a specific case, let's analyze how it can implement these strategies in detail.

Firstly, enhancing the introduction of high-level talent teams is crucial. To achieve this, Yantai Nanshan University should further optimize and revise its management

measures for attracting high-level talents. The university should actively promote the "Hundred Doctoral Talents Program" and aim to introduce 100 doctoral talents from key domestic and international institutions of higher learning, research institutes, and other units by 2030. The focus should be on attracting retired military personnel, the "Double Hundred Talents" of Yantai City, high-level talents and key personnel from renowned universities (research institutions) and enterprises at home and abroad. The university should strive to make breakthroughs in attracting leading talents and high-level scientific research and innovation teams. Additionally, it should encourage young teachers to self-improve and revise its management measures for faculty members' professional development and further improve the policy support for in-service teachers to pursue doctoral degrees. By establishing relevant supporting policies, the university can ensure that talents are attracted, retained, and perform well, thereby driving and promoting the overall construction level of the school's teaching staff.

Secondly, optimizing talent incentive mechanisms is essential. Yantai Nanshan University should establish and improve appointment systems and post management systems to create a competitive incentive mechanism. The university should promote the reform of its title evaluation system and evaluation and assessment system, clarify promotion and elimination mechanisms, and form an internal distribution mechanism that rewards hard work and excellence.

Thirdly, completing the construction of a compensation system and improving teachers' treatment levels is vital. Yantai Nanshan University should introduce skill-based pay, emphasizing incentives for individuals and teams. It should design a new model that aligns with the development of faculty and staff and establish a scientific and reasonable compensation system that suits the university's development, satisfies faculty and staff, and offers higher compensation levels than similar institutions in the region.

By implementing these strategies, Yantai Nanshan University can effectively attract and retain high-level talents, optimize its talent incentive mechanisms, and establish a competitive compensation system. This will not only enhance the overall quality of its teaching staff but also contribute to the university's long-term development and competitiveness.

The performance management of full-time teachers in Yantai Nanshan University is mainly reflected in the assessment of performance-related pay. As a private institution, Yantai Nanshan University is characterized by distinctive enterprise management. Therefore, in the overall management and assessment process of employees, it is mainly reflected in the salary assessment, while the construction of enterprise culture, spiritual civilization, and personal development is still very weak.

The management of full-time teachers in Yantai Nanshan University is mainly reflected in personal basic ability, workload management, and performance management, which correspondingly correspond to three parts: basic salary, workload salary, and performance salary. The basic salary consists of four parts: academic qualifications, professional titles, teaching experience, and special "teaching master awards and other awards". The workload of teachers mainly includes five parts: classroom teaching workload, teaching routine workload, teaching and research reform workload, teaching training workload, and part-time administrative workload. The performance salary of teachers includes four parts: monthly performance salary, key position allowance, individual reward for teaching and research achievements, and annual performance reward.

(1) Monthly assessment performance salary. The monthly assessment is the responsibility of the college or department where the teacher belongs. After assessment, the performance salary for outstanding performance is 300 yuan/month; the performance salary for good performance is 200 yuan/month; the performance salary for qualified performance is 100 yuan/month; there is no performance salary for unqualified performance (including insufficient teaching workload and teaching accidents). In principle, the ratio of teachers with excellent, good, and qualified assessments is 2:6:2.

(2) Key Position Allowance. Teachers are eligible for a key position allowance, which is divided into six levels, ranging from 500 yuan to 4500 yuan. The position allowance is determined through competition and certification, primarily assessing the teacher's development in teaching, research, and professional growth over the course of a year. After successful competition and certification, the allowance will be reflected monthly in the teacher's salary for the following year. The distribution standard is as

follows: full allowance for 8 teaching months, and half allowance for the 4 months during summer and winter vacations.

(3) Teaching and Research Achievement Awards. To further enhance the vitality and quality of education, the school encourages teachers and students to actively participate in various competitions and scientific research at all levels. At the end of each year, the Academic Affairs Office compiles and publicizes the teaching and research achievements of the teachers, including published papers, books, awards won in various competitions, and successfully applied research projects. Year-end rewards are then issued according to the established standards, and the reward method is reflected in the winter vacation salary.

(4) Annual Performance Awards. Teachers who have won awards in important competitions or made outstanding contributions to the school are eligible for annual performance awards, such as the President's Teaching Award and the Excellent Teacher Award. Specific criteria for these awards are determined separately.

With the continuous development of the times, the original methods of performance evaluation may have become outdated, but only by improving teaching methods can we promote academic excellence. Therefore, we must keep pace with the times to improve teachers' living standards.

First, in the planning performance phase, we should refine the school's strategy and prioritize the needs of faculty and staff, such as opening communication channels and regularly collecting feedback, to achieve a close integration of the two. Second, in the management performance phase, we should build an information-sharing platform, establish a dedicated management team, and promptly disclose information related to performance evaluation, appeal feedback, etc.; improve effective incentive and communication mechanisms, refine the auxiliary system for university performance management, perfect strict reward and punishment mechanisms, and provide opportunities and support for professional development of faculty and staff. Third, in the management performance phase, we should refine the original performance evaluation indicators, distribute the weight of evaluation indicators, weaken subjective evaluation indicators, and add a 360-degree evaluation method to ensure the comprehensiveness and

integration of the evaluation subjects. Fourth, in the feedback performance phase, we should establish effective information feedback and evaluation appeal channels, improve safeguard measures, establish diversified information feedback channels, clarify feedback procedures, and build transparent and efficient evaluation appeal channels.

3.3 Effective financial management strategies to ensure long-term sustainability and growth

Strategic consensus is the degree of understanding, recognition and willingness to execute the enterprise strategy among employees at all levels, and it is an important factor that affects the execution and performance of enterprise strategy. The subject of strategic consensus starts from the top management team of the enterprise, and gradually extends to middle and lower managers, all employees, and even external stakeholders of the enterprise.

As a private university, if the heads of different teaching units have unclear and lack of consensus on the specific meaning of the school's strategy, they will inevitably formulate departmental work plans based on their own understanding. Therefore, we need to strengthen the promotion of strategic concepts, mobilize all teaching and administrative staff to actively participate, enhance campus culture, and achieve strategic consensus. This can be achieved through staff mobilization meetings, explaining strategic goals, carrying out relevant training, linking the school's vision with employee interests, mobilizing everyone's efforts, and enabling all staff to fully devote themselves to the strategic implementation process, providing strong guarantees for the achievement of strategic goals.

In addition, the implementation of the strategy cannot rely solely on top management, and requires cooperation among various departments. First, the management team must have the ability to decompose the strategy and assign it to various colleges, administrative units, and implement a target responsibility system to ensure that the plan is carried out in an orderly manner. Heads of various departments should further assign the targets allocated by their superiors to each teacher and employee. Secondly,

heads of various departments should fully exert their coordination skills, actively follow up during the strategic implementation process, feedback problems in time, and the top leadership should revise the strategy based on feedback from various colleges and departments to ensure that the development plan is completed on schedule.

As a private university, Yantai Nanshan University faces the challenge of different teaching unit leaders having unclear and lacking consensus on the specific meaning of the school's strategy during the implementation process. To overcome this issue, strengthening the promotion and mobilization of strategic concepts is particularly important.

Firstly, Yantai Nanshan University can conduct a faculty mobilization conference to provide a detailed explanation of the school's strategic objectives. Such a conference is not only a platform for communicating information but also an occasion to build consensus and inspire enthusiasm. At the conference, school leaders can delve into the core significance, long-term planning, and expected outcomes of the strategy, allowing all faculty members to have a clear understanding of the school's development direction.

Secondly, conducting relevant training is also an effective way to enhance faculty members' understanding of the strategy. Yantai Nanshan University can organize thematic training sessions, inviting industry experts or experienced administrators within the school to lecture, helping faculty members to deeply understand the connotation and requirements of the strategy. Through training, faculty members can better clarify their roles and responsibilities in the strategy implementation process, thereby better cooperating with the overall development of the school.

In addition, linking the school's vision with employee interests is also an important means to mobilize faculty members' enthusiasm. Yantai Nanshan University can establish a series of incentive mechanisms, such as reward systems and promotion opportunities, to make faculty members feel closely connected to the school's development. In this way, faculty members will be more actively involved in the strategy implementation process and contribute to the school's long-term development.

During the strategy implementation process, the cooperation and division of labor among various departments are also crucial. The management of Yantai Nanshan

University needs to possess the ability to decompose the strategy, dividing the overall strategy into various departments and administrative units, and implementing a target responsibility system to ensure the orderly progress of the plan. Department heads need to further refine tasks assigned by superiors to each individual teacher and employee, ensuring that responsibilities are assigned to individuals and tasks are assigned to positions.

At the same time, department heads also need to fully utilize their coordination abilities, actively following up and providing timely feedback during the strategy implementation process. When encountering problems, they should promptly report to senior leaders and seek solutions to ensure the smooth implementation of the strategy. Senior leaders should also promptly revise the strategy based on feedback from various departments to ensure that the development plan can be completed as scheduled.

In summary, through strengthening the promotion and mobilization of strategic concepts, conducting relevant training, aligning employee interests with the school's vision, and promoting cooperation and coordination among various departments, Yantai Nanshan University can effectively address the issue of unclear and lacking consensus on strategic meanings among different teaching unit leaders. This will facilitate the smooth implementation of the strategy and lay a solid foundation for the school's long-term development.

Yantai Nanshan University currently has 12,160 students enrolled, with an average tuition fee of 30,000 yuan. The school's tuition income is approximately 360 million yuan, and the number of students enrolled has been increasing at an average rate of 8% in the past three years, with tuition income also showing an upward trend each year. In addition, under the existing resources, the school is expanding its adult education business, certification training business, and integrating the leasing of school property resources, etc. The income of Yantai Nanshan University will be even more impressive. With the increase in overall income, the funds used for the strategic development planning and implementation of the school will also increase accordingly.

In addition, Yantai Nanshan University needs to gradually improve the financial system of comprehensive budget management. Private colleges and universities have the

characteristics of diverse data types and wide scope of work in their financial activities. Financial budgeting plays a crucial role in the development of colleges and universities. Comprehensive budget management can help private colleges and universities do a good job in the overall planning and planning of school financial management. In the process of carrying out various business and teaching activities, Yantai Nanshan University should focus on the development strategic goals, determine the budget objectives of school financial revenue and expenditure, compile financial budgets, implement and execute budgets, and conduct budget management throughout the process. By doing so, the quality of school financial management can be improved, the economic benefits of the school can be steadily increased, and the sustainable and healthy development of the school can be promoted.

Strengthen dynamic monitoring in the implementation of the strategy:

Firstly, the macro environment is a dynamic change process, and potential opportunities and threats are all related to whether the school can achieve long-term and healthy development. Therefore, in the process of strategic implementation, dynamism should be maintained, timely attention should be paid to changes in the education industry and market environment, and specific adjustments should be made according to the changes. Secondly, emphasis should be placed on coordination. The harmony between resource facilities, cultural atmosphere, and strategies is a key issue that needs to be focused on in the process of strategic implementation. In terms of resource use, it is necessary to be as comprehensive as possible and make the best use of everything. The sense of responsibility, cohesion, and centripetal force of employees are important factors to ensure the smooth implementation of the school's strategic planning and execution, so it is also important to enhance the cultural atmosphere of school cohesion. At the same time, it is necessary to coordinate the work among various departments and faculties of the college, correct errors in time, resolve conflicts, be alert to potential risks, and promote the efficient implementation of strategic plans.

Here are specific examples related to Yantai Nanshan University:

Firstly, the macro environment is a dynamic process of change, with potential opportunities and threats that are closely related to the long-term and healthy development

of the university. Therefore, in the process of strategic implementation, Yantai Nanshan University should maintain dynamism, promptly pay attention to changes in the education industry and market environment, and make specific adjustments based on the content of those changes. For instance, the university could establish a mechanism to regularly monitor industry trends and market fluctuations, and then formulate timely strategies and countermeasures in response to changes.

Secondly, emphasis should be placed on coordination. The harmony between resource facilities, cultural atmosphere, and strategies is a crucial issue that needs to be addressed during the strategic implementation process. In terms of resource utilization, Yantai Nanshan University should strive to be as comprehensive as possible and make the best use of all available resources. The sense of responsibility, cohesion, and centripetal force of employees are essential factors for ensuring the smooth implementation of the university's strategic planning and execution. Therefore, it is also crucial to enhance the cultural atmosphere that fosters school cohesion. For example, the university could organize various team-building activities and cultural events to strengthen the sense of belonging and unity among its staff and students.

Moreover, it is necessary to coordinate the work among various departments and faculties of the university. This includes promptly correcting errors, resolving conflicts, being vigilant against potential risks, and promoting the efficient implementation of strategic plans. To illustrate, Yantai Nanshan University could establish interdepartmental communication mechanisms to facilitate the sharing of information and collaboration, ensuring that strategic goals are achieved in a coordinated and synchronized manner.

By implementing these strategies and examples, Yantai Nanshan University can ensure the effective and efficient implementation of its strategic plans, thus contributing to its long-term and healthy development.

CONCLUSION

The theoretical application of strategic management has strong implications for the development and construction of private universities. This article conducted a thorough analysis and exploration of Shandong Yantai Nanshan University through the method of enterprise strategic management, and the conclusions are summarized as follows:

Through a deep analysis of the internal environment of Yantai Nanshan University, it was found that the key internal advantages are: geographically advantageous location in the Yantai and beautiful campus environment; popular majors with distinctive engineering specialties; comprehensive management characteristics of the college system; vibrant teaching staff; and complete experimental and internship facilities. The key internal disadvantages of Yantai Nanshan University are: over-centralized management system; high tuition fees leading to a decline in the quality of students; brain drain, lack of doctoral and double-qualified teachers; insufficient teaching space and library resources; limited investment in scientific research, and relatively weak scientific research achievements. Using the Internal Factor Evaluation (IFE) matrix, after conducting a questionnaire survey, the entropy weight method was used for quantitative analysis, resulting in a weighted total score of 2.52 for the internal environment of Yantai Nanshan University. This indicates that Yantai Nanshan University can leverage its internal advantages to offset its disadvantages, but the utilization of internal advantages is not comprehensive enough.

After analyzing the macro environment of Yantai Nanshan University using PEST and the competitive environment using Porter's Five Forces Model, the opportunities it possesses are as follows: support from the national and local governments for private higher education policies; continuous growth of the national economy and increasing per capita income; reform of college entrance examination enrollment batches, expanding the scope of student sources for private universities; growth of undergraduate student sources and society's pursuit of higher education qualifications; the entry of information network technology has broadened the mode of higher education; the rise of new engineering disciplines and the importance attached by the country and society to engineering colleges.

The main threats facing Yantai Nanshan University are: increasingly fierce competition among higher education institutions; deep-rooted traditional prejudices against private institutions in society; competition threats from potential entrants such as vocational colleges upgrading to undergraduate level and Sino-foreign cooperative education; increasingly fierce competition for student sources, with private universities having lower competitiveness in attracting high-quality students; changes in the college entrance examination volunteer filling mode, with candidates and parents paying more attention to the professional strength of schools; and a decline in the fertility rate, which will gradually reduce the number of eligible students for higher education in the future. After identifying the key external environmental factors, the External Factor Evaluation (EFE) matrix was used to conduct a quantitative analysis of the external environment of Yantai Nanshan University through a questionnaire survey. The weighted total score for the external environment of Yantai Nanshan University was 2.38, indicating that the university has not effectively utilized opportunities to counter external threats, has not fully leveraged opportunities, and has not reduced the potential negative impact of external threats.

The choice of development strategy for Yantai Nanshan University. Based on the results of the internal and external environmental analysis of Yantai Nanshan University's development, and using SWOT matrix analysis, the future development goals of Yantai Nanshan University were proposed, and its overall strategic development was determined as a growth strategy under the SO combination and a diversified business strategy under the ST combination, as well as a differentiated competitive strategy for educational and teaching models.

Specific implementation measures and safeguards. Firstly, seizing good opportunities based on its own advantages to implement diversified operations. Secondly, enhancing the characteristics of running a school by deepening the student education and management model with the characteristics of the college, strengthening the cultivation of applied talents, and strengthening the construction of professional cluster characteristics to enhance the overall educational and teaching differences of Yantai Nanshan University. Thirdly, strengthening the characteristic talent training model of "liberal arts education, knowledge education, and ability cultivation" to achieve

differentiated talent training. Finally, strengthening incentive mechanisms to promote the construction of talent teams. In terms of strategic implementation safeguards, it is first necessary to achieve strategic consensus among all faculty and staff, followed by financial support.

There are also comprehensive, financial, and other types of private colleges in China. The research object of this article, Yantai Nanshan University, is a science and engineering institution. Different types of institutions have different situations, so the research has certain limitations. Looking ahead, it is hoped that more scholars will participate in the research on private universities to promote the sustainable, healthy, and better development of private universities in China.

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APPENDIXES

Appendix A

Evaluation on the internal influencing factors of Yantai Nanshan University

Respected leaders and teachers,

Hello! I am conducting a research on the internal environmental factors that influence the development strategy of Yantai Nanshan University. In order to make the evaluation more objective and accurate, I am writing to consult with you about the influence level of each factor. This questionnaire is anonymous and I promise that the results will only be used for this academic research. Scoring instructions: The internal key factors' advantages and disadvantages will be measured by 1-4 points, among which, 1 represents the main disadvantage, 2 represents the secondary disadvantage, 3 represents the secondary advantage, and 4 represents the main advantage. Questions 1-5 are about the advantageous factors, and questions 6-10 are about the disadvantageous factors.

1. School Location and campus environment (The school is located in the beautiful coastal city of Yantai, as a special economic zone the momentum of economic development is sufficient, the city is mature, the climate and environment are livable, and the campus environment is beautiful).

☐3 ☐4

2. Popular major setting, and the school has obvious characteristics of engineering major [single choice] *

☐3 ☐4

3. Characteristics of comprehensive management of college students [Single choice] *

☐3 ☐4

4. The teaching staff is dynamic and meets the requirements of the national title structure [single choice] *

☐3 ☐4

5. Complete experimental and internship places [single choice] *

☐3 ☐4

6. Overly centralized management system [single choice] *

☐1 ☐2

7. Higher tuition will reduce the quality of students [single choice] *

☐1 ☐2

8. Brain drain, lack of doctors and double-qualified teachers [single choice] *

☐1 ☐2

9. Lack of teaching room and book resources [single choice] *

☐1 ☐2

10. Low investment in scientific research and weak scientific research results
[single choice] *

☐1 ☐2

Annex B

Investigation of internal environmental influencing factors of Yantai Nanshan University

Dear leaders and teachers,

Hello! I am currently conducting a research on the "Evaluation of Internal Environmental Influencing Factors" related to the development strategy of Yantai Nanshan University. To ensure the objectivity and accuracy of my evaluation, I am seeking your advice on scoring the importance of various influencing factors.

This questionnaire is anonymous and solely used for academic research. Your personal information will be kept strictly confidential. Thank you for your support of my research work!

The questionnaire content is divided into two categories: advantages and disadvantages. The first category, questions 3 to 7, investigates the significance of the key advantages of Yantai Nanshan University to the university's development. The second category, questions 8 to 12, explores the importance of the key disadvantages of Yantai Nanshan University to the university's development.

1. What is your position type in the university? [Single choice question] *

- ☐ School Management ☐ Teacher
- ☐ Teaching and Educational Support Staff
- ☐ Staff of Administrative Functional Departments

2. How many years have you worked in this university? [Single choice question]

*

- ☐ Less than 3 years ☐ 3-5 years
- ☐ 5-10 years ☐ More than 10 years

3. The geographical location and campus environment of the university (The university is located in the beautiful coastal city of Xiamen, an economic special zone with strong economic development momentum, mature urban construction, pleasant

climate and environment, and beautiful campus scenery).

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

4. The university has popular majors and its engineering majors are relatively distinctive. [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

5. The comprehensive management characteristics of the college system for students [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

6. Reasonable structure of teacher titles [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

7. Complete experimental and internship facilities [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

8. Incomplete teaching infrastructure facilities and insufficient classrooms [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

9. High tuition fees and declining quality of students [Single choice question]

*

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

10. Brain drain and lack of dual-qualified teachers [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

11. Insufficient construction and book resources in the library [Single choice question]

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

12. Limited investment in scientific research and relatively weak research achievements [Single choice question] *

☐ Not important ☐ Very important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Appendix C

Rating of external factors influencing the development of Yantai Nanshan University

Dear leaders and teachers,

Hello! I am currently conducting a research on the evaluation of the level of external environmental influencing factors on the development strategy of Yantai Nanshan University. To ensure the objectivity and accuracy of my evaluation, I am seeking your advice on the impact levels of various factors. Please note that this questionnaire is anonymous, and I promise that the results will only be used for this academic research.

Scoring instructions: Please use a scale of 1-4 to measure the response degree of the current strategy to changes in various factors under the influence of established factors. A score of 4 represents a very good response, 3 represents a relatively good response, 2 represents an average response, and 1 represents a poor response.

1. Support from the national and local governments for private higher education policies [Single Choice] *

☐1 ☐2 ☐3 ☐4

2. Continuous growth of the national economy and increasing per capita income of residents [Single Choice] *

☐1 ☐2 ☐3 ☐4

3.Reform of college entrance examination admission batches, expanding the scope of student sources for private colleges and universities [Single Choice] *

☐1 ☐2 ☐3 ☐4

4. Growth of undergraduate student sources and society's pursuit of higher education qualifications [Single Choice] *

☐1 ☐2 ☐3 ☐4

5. The entry of information network technology has broadened the mode of higher

education. [Single Choice] *

☐1 ☐2 ☐3 ☐4

6. The rise of new engineering disciplines and the importance of national and social attention to engineering colleges [Single Choice] *

☐1 ☐2 ☐3 ☐4

7. Increasingly fierce competition among higher education institutions [Single Choice] *

☐1 ☐2 ☐3 ☐4

8. Deep-rooted traditional prejudice against private colleges and universities in society [Single Choice] *

☐1 ☐2 ☐3 ☐4

9. Competition threats from potential entrants in the industry, such as upgrading of vocational colleges to undergraduate level and Sino-foreign cooperative education [Single Choice] *

☐1 ☐2 ☐3 ☐4

10. Increasingly fierce competition for student sources, especially for high-quality student sources, and lower competitiveness of private colleges and universities [Single Choice] *

☐1 ☐2 ☐3 ☐4

11. Changes in the mode of filling college entrance examination volunteer forms, with candidates and parents paying more attention to the professional strength of the school [Single Choice] *

☐1 ☐2 ☐3 ☐4

12. The decline in the fertility rate, indicating that the population of eligible students for higher education will gradually decrease in the future [Single Choice] *

☐1 ☐2 ☐3 ☐4

Appendix D

Investigation of external environment influencing factors of Yantai Nanshan University

Dear leaders and teachers,

Hello! I am currently conducting a research on the evaluation of "external environmental influencing factors" related to the development strategy of Yantai Nanshan University. To ensure the objectivity and accuracy of my evaluation, I am seeking your advice on scoring the importance of various influencing factors.

This questionnaire is anonymous and does not involve work secrets or personal privacy issues. The collected data will not be made public and will only be used for academic research. I will also fully protect your personal information. Thank you for your support of my research work!

The questionnaire content is divided into two aspects: the importance survey of opportunities and threats for the development of Yantai Nanshan University. Questions 3-8 evaluate the importance of six opportunities for the development of Yantai Nanshan University. Questions 9-14 evaluate the importance of six threats to the development of Yantai Nanshan University.

1. What is your position type in the school? [Single Choice] *

- ☐ School Management ☐ Teacher
- ☐ Teaching and Educational Support Staff
- ☐ Staff of Administrative Departments

2. How many years have you worked in this school? [Single Choice] *

- ☐ Less than 3 years ☐ 3-5 years
- ☐ 5-10 years ☐ More than 10 years

3. Support from the national and local governments for private higher education policies [Single Choice] *

(Please use a scale of 1-9 to indicate the importance, where 1 represents "not important" and 9 represents "very important".)

☐ 1 Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

4. Continuous growth of the national economy and increasing per capita income of residents [Single Choice] *

(Please use a scale of 1-9 to indicate the importance, where 1 represents "not important" and 9 represents "very important".)

☐ 1 Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

5. Reform of college entrance examination admission batches, expanding the scope of student sources for private colleges and universities [Single Choice] *

(Please use a scale of 1-9 to indicate the importance, where 1 represents "not important" and 9 represents "very important".)

☐ 1 Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

6. The growth of undergraduate enrollment and society's pursuit of higher education qualifications [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

7. The introduction of information network technology has broadened the models of higher education. [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

8. The rise of new engineering disciplines and the national and societal emphasis on engineering colleges [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

9. Increasingly fierce competition among higher education institutions [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

10. Deep-rooted traditional prejudices in society against private colleges and universities [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

11. Competition threats from potential entrants such as the upgrading of vocational colleges to universities and Sino-foreign cooperative education projects [Single Choice]

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

12. Increasingly fierce competition for student sources, especially for high-quality students, with private colleges and universities having lower competitiveness [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

13. Changes in the mode of filling college entrance examination volunteer forms, with candidates and parents paying more attention to the professional strength of the school [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important

14. The decline in the fertility rate, indicating that the population of eligible students for higher education will gradually decrease in the future [Single Choice] *

☐ Not important

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Very important