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International Journal of Earthquake Engineering
Anno XLIII - Num. 1 - 2026

Research on the construction of real estate development and financial management personnel training system based on the integration mode of industry and education

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SUMMARY: *Industry-education integration serves as an effective pathway for cultivating technical and skilled talent. This paper explores the organic integration of teaching and learning within industry-education collaboration, aiming to deepen the concept of such integration and optimize the training objectives for real estate development financial management professionals. It seeks to resolve challenges in talent cultivation models by analyzing the workflows of educational institutions and production entities. By decomposing the various stages of real estate development, six primary indicators were selected as the constraint layer: financial strategy capability, external financial resource integration capability, internal resource allocation capability, risk control capability, learning capability in real estate development financial management, and financial data presentation capability. Objective weighting and comprehensive weighting methods were employed to determine the weightings for each indicator in cultivating real estate development financial management talent. Based on the overall ranking of each indicator, key elements were identified. The existing real estate development financial management talent cultivation system was then scored. Based on the scores of tertiary indicators, the university's performance in most indicators was rated as moderate, with audit quality scoring approximately at the moderate level.*

KEYWORDS: *Objective Weighting Method; Comprehensive Weighting Method; Industry-Education Integration; Talent Development; Financial Management*

1 Introduction

As society advances and becomes increasingly urbanized, the real estate development sector is faced with both threats and opportunities. Financial management plays an essential role in the development sector; it determines how organizations will be able to raise enough money to cope with market forces [1, 2]. Excellent financial management personnel can enable real estate developers to control finances, avoid financial risks, and increase organizational profit. The scarcity of financial management specialists in the field of real estate development is another issue. They should not only be experts in financial management but also have adequate knowledge about the real estate development sector [3-6]. This necessitates greater efforts from universities in talent cultivation to meet societal demands.

Universities should develop talents with excellent abilities for financial management in real estate development by formulating a complete talent development plan [7]. Nonetheless, the current higher education system has been focusing too much on theoretical knowledge rather

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https://doi.org/10.65102/is2026371
Published: 30 April, 2026

than practical skill development. Industry-education integration, through cooperation with companies, offers more practical chances for students to build their operational abilities and problem-solving skills [8-10]. Industry-education integration is the concept of profound interaction between the education and industrial sectors towards achieving organic integration in the development of talents, scientific research, and innovation of technologies [11, 12]. Such an approach not only improves the practicality of education but also facilitates innovation and talent development in the industrial sector. Industry-education integration makes up for the deficiencies of conventional education that separates theory from practice [13-16]. In today's context of economic globalization and technological progress, the significance of industry-education integration in talent development becomes increasingly prominent [17, 18].

In this paper, through analyzing the significance of developing talent in financial management for real estate development, the multidimensional development of talent development models in the case of industry-education integration is discussed. From all phases of real estate development, i.e., project initiation and feasibility study, bidding process, implementation of projects, completion and delivery of projects, and selling, evaluation indicators are chosen to create an evaluation system for talent development in financial management for real estate development in industry-education integration. Through using objective and comprehensive weighting method, we do the weight calculation, ranking and test of consistency. Based on talent development indicator ranking and results of questionnaires, the significant elements for the cultivation of talent in real estate development finance are found out.

2 The Starting Point for Cultivating Financial Management Talent in Real Estate Development

2.1 The Vital Significance of Cultivating Professional Talent in the Context of Industry-Education Integration

Industry education integration has its own strengths in utilizing social teaching resources [19, 20]. It is extremely important to consider industry education integration in innovatively nurturing talent in real estate development and finance management.

(1) Meeting National Real Estate Market Development Needs

Under the concept of integration between industry and education, talent training related to real estate development and financial management may take a market-based approach in line with the idea of 'service for the market'.

In the first place, the reform on the curriculum at universities should include the focus on teaching and training practical ability, thinking capability, innovation capability, and cultivating excellent personality and good ethics to meet the market requirements for talent perfectly.

However, in the process of industry revolution, leading companies tend to stress that they need to change the structural pattern to achieve their further development. Therefore, the "small but beautiful" talent strategy should be taken, and specialists must acquire specialized abilities instead of comprehensive abilities like before. Obviously, the scope of talent cultivation models in higher education has been extended greatly.

(2) Effectively advancing teaching reforms in university real estate development and financial management programs

The inclusion of concepts of industry-academia collaboration in university land development and financial management curricula will not only offer new insights for curriculum innovation but also facilitate the achievement of professional education objectives in an effective manner.

For starters, it enables the core objective of nurturing virtue via education. The conventional form of education in these disciplines mainly revolved around knowledge acquisition, where extensive knowledge was prioritized over the development of humanism and morality. Cultivation of professional talents through integration of industry and education can revert back to the basics of education.

Secondly, it encourages scientific research and innovations. In the last ten years, the real estate industry witnessed a period of golden era, marked by rapid growth without much consideration for innovation and development. Certain institutions paid no attention to nurturing students' research and innovative abilities. Through industry-education integration, this issue can be adequately addressed.

(3) Enhancing the Comprehensive Competence of Real Estate Development and Financial Management Professionals in Higher Education

On the other hand, it consolidates the theoretical understanding of students. Industry-education integration does not aim at improving the practical abilities of the students only. In fact, it is all about analyzing the theoretical education system and making improvements to suit the trends in industrial and corporate growth. Thus, the theoretical base of the students can be strengthened for their future success.

On the other hand, it enhances students' practical skills. The industry-education integration concept requires universities to deepen collaborative education partnerships with enterprises. Whether through in-class practical activities, off-campus internships, or hands-on training, students can enhance their practical abilities while gaining job-specific experience. The systematization of professional theoretical knowledge and the specialization of practical skills significantly boost university students' competitiveness in the job market.

2.2 Exploring Professional Talent Development Models Under the Concept of Industry-Education Integration

To address the challenge of organically integrating teaching and learning in industry-education integration, it is necessary to establish a shared platform involving all stakeholders. This platform should integrate and showcase the teaching processes of educational entities and the workflows of production entities, thereby facilitating the creation of an integrated system.

(1) Jointly develop talent cultivation programs and establish a “dual-standard” linkage mechanism.

Over the past decade of rapid development in the real estate industry, a gap has emerged between the talent cultivation offered by higher education institutions and the talent demands of enterprises, with a lack of communication between both sides. Higher education institutions must align with industry demands by inviting enterprises to participate in curriculum design, rapidly achieving substantive, deep integration of “industry,” “academia,” “research,” and “application” in vocational education. This ensures seamless alignment between university talent cultivation and corporate needs—a critical issue requiring urgent resolution by both institutions and the industry.

(2) Construct core curriculum and create online resources for teaching. In terms of teaching real estate, the core curriculum designed by the university's real estate teaching faculty consists of four excellent professional courses, such as “Sales Negotiation Techniques” and “Real Estate Planning”. On this basis, they have made great efforts to develop online teaching materials for the four core courses, with 18 micro-lecture courses produced.

(3) Through collaborations with the Real Estate Education Authority, the university offers annual pre-employment vocational training to graduating students, as well as organizing their attendance in the National Elite Training Camp for University Real Estate Students. Through collaborations, an internship program has been successfully implemented between both parties.

The standards used in national competitions are included in the teaching process and ensure an integration of education with competition through practical training. Through this method, there is complete student involvement, leading to teaching excellence through competitions and learning success through competition.

3 Establishing a Full-Cycle Indicator System for Real Estate Development Under the Industry-Education Integration Model

In developing the evaluation system to measure financial management capability in real estate development, it is important to note that the assessment covers the entire life cycle from project proposal, feasibility study stage, bidding stage, execution stage, and delivery, turnover, and sale stage.

3.1 Project Initiation and Feasibility Study Phase

In the process of starting any project, it is essential for the finance department to set certain financial goals and appropriate strategies related to the building project and the existing state of the market. While conducting a feasibility study, it is necessary to perform a comprehensive examination using such methods as macroeconomic analysis, market analysis, and calculation of financing costs.

Financial strategic capability can be evaluated through the following aspects:

First, theoretical knowledge proficiency.

Second, the integration of financial strategy with institutional strategy.

Third, financial forecasting, auditing, and judgment capabilities.

3.2 Bidding and Tendering Phase

The core objective of the bidding phase is to secure funding and land use rights for real estate development projects.

Fundraising during the bidding phase reflects an enterprise's capability to integrate external resources, which directly influences the level of support external stakeholders provide for the project. This capability is primarily evaluated through the following three indicators:

First, strategic financial resource integration capability.

Second, financial institution relationship coordination capability.

Third, stakeholder relationship coordination capability.

3.3 Project Implementation Phase

The project implementation phase is the longest and most critical stage in the entire real estate development cycle. This phase encompasses the most extensive range of business activities and financial management tasks. A brief overview is provided below:

First, capital allocation and operational management.

Second, debt management and cash flow security.

Third, financial team development and talent-driven innovation.

3.4 Completion, Handover, and Sales Phase

Financial performance capability represents the outcomes of financial management within real estate development operations. It is both the result of the combined efforts across the other five

capability dimensions and, conversely, provides the basis for strategic financial decision-making and overall planning adjustments based on its level of achievement.

To evaluate financial data performance capability, relevant indicators can be selected across three levels: profitability, operational capability, and development capability. Each level comprises three tertiary indicators.

The evaluation indicators for financial management capability during the completion, delivery, and sales phase are shown in Table 1. A total of nine tertiary indicators were selected, all of which are positive indicators.

Table 1: Evaluation of financial management ability in completion delivery and sales

Primary indicator	Secondary indicator	Tertiary index
Financial data performance	Profitability	Total asset yield
		Gross margin
		Net profit
	Operational capacity	Total asset turnover
		Inventory turnover
		Receivable turnover
	Development ability	Revenue growth
		Net profit growth rate
		Net equity growth rate

3.5 Summary of Financial Management Capability Evaluation Indicators for Real Estate Development

The Higher Education Talent Quality Development Plan synthesizes indicators identified across the four business phases of real estate development to establish an evaluation framework for financial management capabilities in real estate development under industry-education integration. The evaluation framework for financial management capabilities in real estate development is presented in Table 2.

(1) Financial Strategy Capability

Theoretical knowledge encompasses two dimensions: real estate development and financial management.

Integration of financial strategy with institutional strategy: Alignment of real estate development financial management strategy with institutional requirements for cultivating financial management talent.

Financial forecasting, auditing, and judgment capabilities: Financial forecasting, financial auditing, financial risk assessment.

(2) External Financial Resource Integration Capability

Strategic financial resource integration: Theoretical techniques for strategic financial resource integration, number of newly acquired real estate development projects by the enterprise.

Financial relationship coordination capability: Professional knowledge in financial relationship coordination, comprehensive financing costs.

Stakeholder relationship coordination capability: Coordination ability with suppliers, customer satisfaction.

(3) Internal Resource Allocation Capabilities

Investment Management Proficiency: Foundational expertise, practical investment management skills.

Capital Operation Efficiency: Fundamental theories of return on assets and turnover rates,

asset and capital operation methods.

(4) Risk Control Capabilities

Risk Forecasting Ability: Understanding of real estate development sectors, financial management risk control capabilities.

Risk Resolution Measures: Speed of risk identification and mastery, risk mitigation actions.

(5) Learning Capability in Real Estate Development Financial Management

Financial Management Talent Development Requirements: Training duration, number of new training courses.

Knowledge Management and Innovation Capability: Learning investment intensity, innovation capability.

(6) Financial Data Performance Capability

Profitability: Profitability of real estate development projects, professional knowledge scores.

Operational Capability: Financial operational management capability in real estate development, professional skills.

Development Capability: Professional development capability, student individual development direction.

Table 2: Evaluation index of financial management ability of real estate development

Primary indicator	Secondary indicator	Tertiary index	Index type
Financial strategy A	Theoretical knowledge A1	Real estate development A11	Positive indicator
		Financial management A12	
	The integration of financial strategy and school strategy A2	Real estate development financial management strategy A21	Positive indicator
		The school's financial manager develops the quality requirements A22	
	Financial forecasting, audit and judgment A3	Financial forecast A31	Positive indicator
		Financial audit A32	
		Financial risk judgment A33	
Financial external resource integration ability B	Strategic financial integration B1	Strategic financial resource integration theory technique B11	Positive indicator
		The new acquisition of real estate development projects B12	
	Financial relationship coordination B2	Professional knowledge of financial relations coordination B21	Positive indicator
		Aggregate cost of financing B22	Negative indicator
	Coordination of stakeholders B3	Coordination with suppliers B31	Positive indicator
		Customer satisfaction B32	
Internal resource allocation capability C	Investment management level C1	Basic knowledge C11	Positive indicator
		Investment management practice level C12	
	Capital operation efficiency C2	The basic theory of asset returns and turnover rates C21	Positive indicator
		Assets, capital operations C22	Positive indicator
Risk control D	Ability to predict risk D1	Degree of cognition in real estate development D11	Positive indicator
		Financial management risk D12	
	Measures to solve the risk D2	Know the speed of risk D21	Positive indicator
		Measures to solve the risk D22	
Ability to develop financial management in real estate E	The financial manager does not cultivate the requirements E1	Training time E11	Positive indicator
		The number of new training courses E12	
	Knowledge management and innovation ability E2	Learning strength E21	Positive indicator
		Innovative ability E22	
Financial data performance F	Profitability F1	Property development project profitability F11	Positive indicator
		Professional knowledge score F12	
	Operational capacity F2	Ability to develop financial operations in real estate F21	Positive indicator
		Professional skill F22	
	Development ability F3	Professional development ability F31	Positive indicator
		Student personal development direction F32	

4 Weighting Design for the Talent Development Quality Evaluation Indicator System

4.1 Weighting of Evaluation Indicators for Financial Management Capabilities in Real Estate Development

4.1.1 Standardized Methods

Based on conclusions from prior literature, weighted calculations cannot be performed when evaluation indicators use different measurement units. Therefore, this study categorizes the fundamental indicators within the comprehensive development framework of relevant evaluation metrics into two types: specific indicators reflecting positive relationships and specific indicators reflecting negative correlations. Subsequently, throughout the study's methodology, these indicators are normalized using distinct standardized approaches to unify their properties.

The standardization method for positively correlated indicators is shown in Formula (1):

$$y_{ij} = \frac{x_{ij} - \min x_j}{\max x_f - \min x_f} \times 100 \quad i \in (1, m),\ j \in (1, n) \tag{1}$$

The standardization method for negative correlation indicators is shown in Formula (2):

$$y_{ij} = \frac{\max x_j - x_{ij}}{\max x_j - \min x_j} \times 100 \quad i \in (1, m),\ j \in (1, n) \tag{2}$$

4.1.2 Empowerment Methods

(1) Objective Weighting Method

Given the versatility and universality of the mean square deviation method, this paper employs it as the objective weighting for evaluation indicators. The specific weighting steps are as follows:

Step 1: First, calculate the mean value result $\bar{y}_j$ for each specific survey sample:

$$\bar{y}_j = \frac{1}{m} \sum_{i=1}^{m} y_{ij} \quad (j = 1, 2, \cdots, n) \tag{3}$$

In this formula, y_{ij} represents the standardized correlation result of the jth specific basic indicator within the ith specific sample.

Step 2: Calculate the specific standard deviation of the correlated samples, S_j:

$$S_j = \sqrt{\frac{1}{m} \sum_{i-1}^{m} (y_{ij} - \bar{y}_j)^2} \quad (j = 1, 2, \cdots, n) \tag{4}$$

Formula (4) represents the development level of each specific basic discrete component within the jth specific relevant indicator after standardization. The greater the difference in the specific outcomes of this indicator, the greater the specific discrete development level of this indicator.

Step 3: Then, define the objective basic weight W_{oj} for the comprehensive variance of the mean of the ith specific relevant indicator. That is:

$$W_{oj} = \frac{s_j}{\sum_{j-1}^{n} s_j} \quad (j = 1, 2, \cdots, n) \tag{5}$$

Then, this paper employs SPSS 20.0 software and specific Excel techniques to scientifically assign weights to each evaluation indicator of real estate development financial management capability based on the aforementioned calculation formula. It standardizes the basic data of various types and processes the differing results associated with each category. The final combined relative standard deviation method for each category is derived from the objective weight calculations within the specific indicator systems of different evaluations.

The objective weights for specific evaluation indicators of real estate development financial management capability are shown in Figure 1. The three-dimensional diagram displays the scalar values for each secondary indicator. For instance, the weight values for Theoretical Knowledge Ability (A1), Integration of Financial Strategy with Corporate Strategy (A2), and Financial Forecasting, Review, and Judgment Ability (A3) are 0.3564, 0.2846, and 0.3590, respectively.

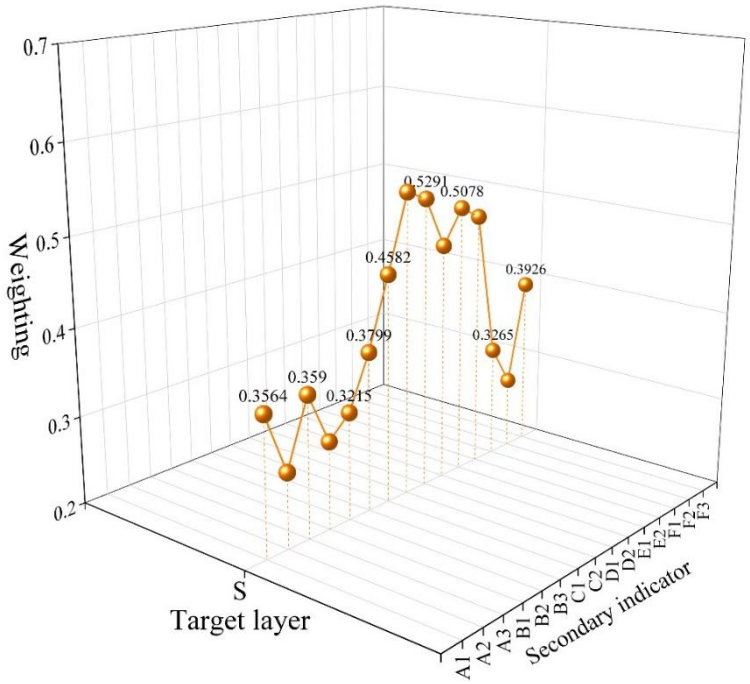

Figure 1: Objective weight of the secondary index

(2) Comprehensive Weighting Method

In order to ensure the validity of the weights obtained, this study applies an overall weighting method that combines the merits of the two types of weights mentioned above, taking into account their shortcomings, based on previous scholarly works. Furthermore, a certain multiplicative weight aggregation scheme is utilized, which is formulated as:

$$W_j = \alpha W_{sj} + (1-\sigma) W_{oj} \quad (j = 1, 2, \cdots, n) \tag{6}$$

In this formula, W_j represents the final weighting result. W_{sj} represents the subjective weighting result. W_{oj} denotes the objective weighting outcome, primarily reflecting the relative objectivity of various weights across different relevant combinations. The fundamental level of comprehensive subjective weight development exhibits a predominantly positive correlation with the specific weight values associated with it.

In its formula (6), the comprehensive basic weighting method must also enable relatively accurate weight assignment statistics. However, since the comprehensive weighting approach remains insufficiently systematized, this paper assigns a weight of 0.5 to each specific subjective and objective weighting result. This ensures a relatively comprehensive maintenance of specific equilibrium while integrating these weights. Furthermore, by combining the relevant multiplicative synthesis method, the basic numerical values for the comprehensive weights of each specific evaluation indicator are calculated.

The comprehensive weighting results for the first-level indicators of real estate development financial management capability evaluation are shown in Figure 2. The weights for the six first-level indicators in cultivating real estate development financial management capability are: A=0.0825, B=0.1246, C=0.1407, D=0.1756, E=0.2531, F=0.2235. Financial management learning ability, financial data performance capability, and risk control capability are the primary factors influencing the cultivation of real estate development financial management talent under the industry-education integration model.

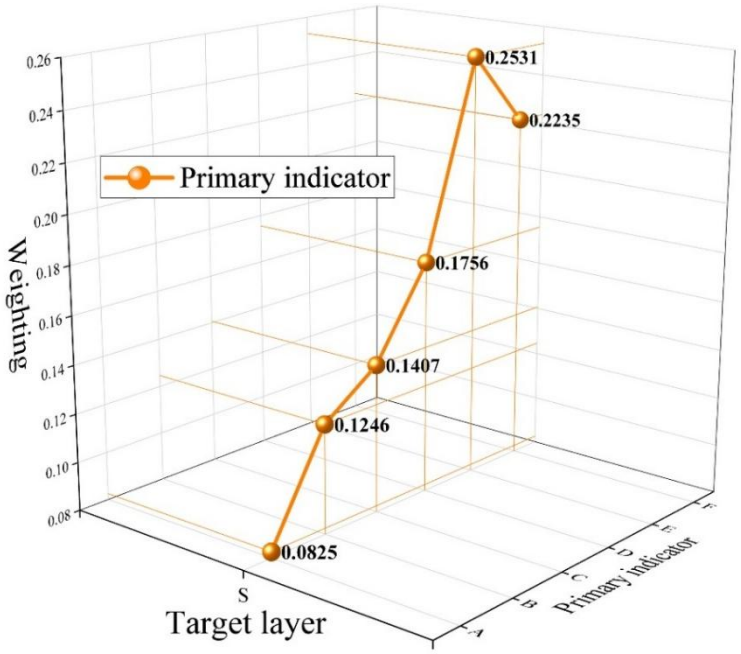

Figure 2: The results of the comprehensive empowerment of the first level index

The comprehensive indicator weighting results for evaluating financial management capabilities in real estate development are shown in Figure 3. Calculated using the above formula, the comprehensive indicator weighting result for theoretical knowledge capability A1 is 0.2891.

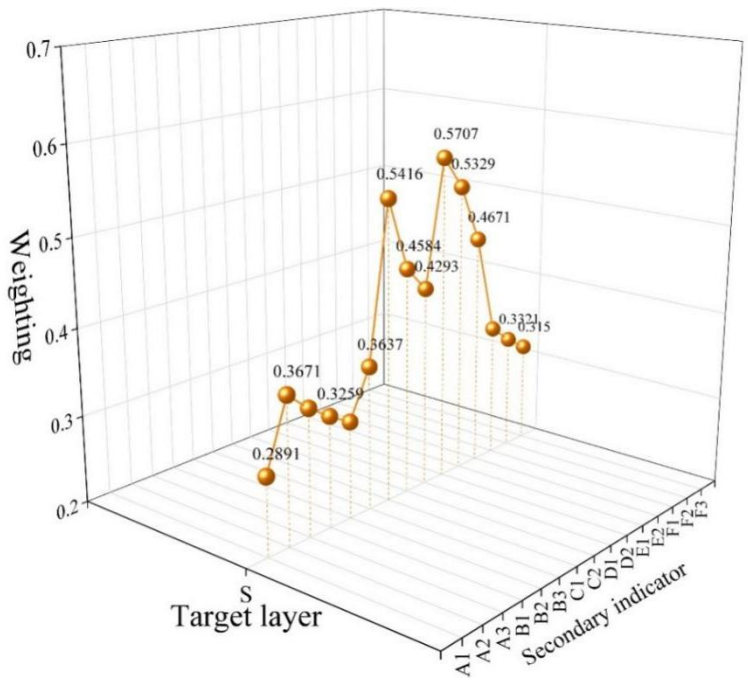

Figure 3: The results of the comprehensive index of ability evaluation

4.2 Hierarchical Single Sorting and Its Consistency Test

Hierarchical single sort is a process in which the eigenvectors are obtained by solving the eigenroots of the judgment matrix, and after normalization processing, they become the ranking weights of the relative importance of the relevant factors at the same level to a certain factor at the previous level. Still taking the general principle layer of "real estate development financial management capability" as an example, Calculate the weights of the six indicators it governs, namely "financial strategic capability", "financial external resource integration Capability", "internal resource allocation capability", "risk control capability", "real estate development financial management learning capability" and "financial data presentation capability", over "real estate development financial management capability". The specific calculation steps are:

Calculate the product M_i of each row of elements in the judgment matrix:

$$M_i = \prod_{i=1}^{n} A(ij), i = 1, 2, 3, \ldots n \tag{7}$$

(2) Compute the nth root of Mi for Wi.

(3) Normalize the transpose of vector Wi:

$$Wi = Wi / \sum_{i=1}^{n} wi \quad w_i = \left[w_1, w_2, w_3, \ldots, w_n \right] \tag{8}$$

Wi is the requested eigenvector, which is the vector of the indicator at the criterion level.

It is necessary to be logical in constructing the judgment matrix, if indicator A is more important than indicator B, indicator B is more important than indicator C, but indicator C is more important than indicator A. Then the designed judgment matrix violates the consistency criterion and this design has a logical error. Therefore, all judgment matrices must be tested for consistency, the specific steps are:

(1) Calculate the value of judgment matrix consistency index CI

$$CI = \frac{\lambda \max - n}{n-1} \tag{9}$$

Among them:

$$\lambda \max = \sum_{i=1}^{n} \frac{(AW)i}{nWi} \tag{10}$$

(2) Find the value of the average random consistency indicator RI of the judgment matrix.
(3) Calculate the value of the stochastic consistency ratio CR

$$CR = CI / RI \tag{11}$$

When CR<0.1, it is determined that the judgment matrix of the design has passed the consistency test, that is, the components in this eigenvector can be used as the weights of the index.

Also take the judgment matrix of each index of real estate development financial management personnel training as an example, the CI value, RI value and CR value can be calculated according to the above formula. Through the calculation, it can be seen that CR<0.1, it can be obtained that the judgment proof meets the consistency test, and the weights obtained are correct.

4.3 Hierarchical General Ordering

Hierarchical total ordering is the calculation of the ordering weights of all elements of the same hierarchy with respect to the target hierarchy. Its calculation formula is:

$$W(q) = w(G) * w(B(C)) * w(A(C)) \tag{12}$$

where $W(C_j)$ is the weight of C_j relative to its corresponding B factor. $w(B(C_j))$ is the weight of the B factor to which it belongs relative to its corresponding A factor. $w(A(C_j))$ is the weight of the A factor further up the hierarchy to which C_j belongs relative to the overall.

4.4 Analysis of case evaluations

On the basis of the designed talent training quality evaluation system, a university as an example to carry out a case study, combined with an example analysis to confirm the scientificity of the constructed university-enterprise cooperation in real estate development financial management talent training quality evaluation index system.

4.4.1 Single-level ranking of computational indicators

This paper categorizes the talent cultivation system for real estate development financial management under industry-education integration into a four-tier structure. The top layer represents the overarching objective of the indicator system—namely, the evaluation framework for cultivating financial management talent in real estate development under industry-education integration. Level-1 indicators form the constraint layer, comprising “financial strategic capability,” “external financial resource integration capability,” “internal

resource allocation capability," "risk control capability," "real estate development financial management learning capability," and "financial data presentation capability." Level-2 indicators constitute the element layer, while Level-3 indicators form the indicator layer.

(1) Weight and Consistency Test for Primary Indicators

The average importance assignment values of the six first-level indicators, namely "A Financial Strategic Capability", "B Financial External Resource Integration Capability", "C Internal Resource Allocation Capability", "D Risk Control Capability", "E Real Estate Development Financial Management Learning Capability", and "F Financial Data Performance Capability", are 4.2, 4.35, 4.5, 4.65, 4.8, and 4.7 respectively. Establish a judgment matrix based on the Satty scale determination method, calculate the weights and simultaneously verify the CR value. The weights and consistency test results of the first-level indicators are shown in Figure 4.

The weights of the six primary indicators are as follows: A=0.0825, B=0.1246, C=0.1407, D=0.1756, E=0.2531, F=0.2235.

Consistency test: λmax = 3.589, CI = 0.0314, RI = 0.61, CR = 0.83 < 0.1. The consistency test is passed.

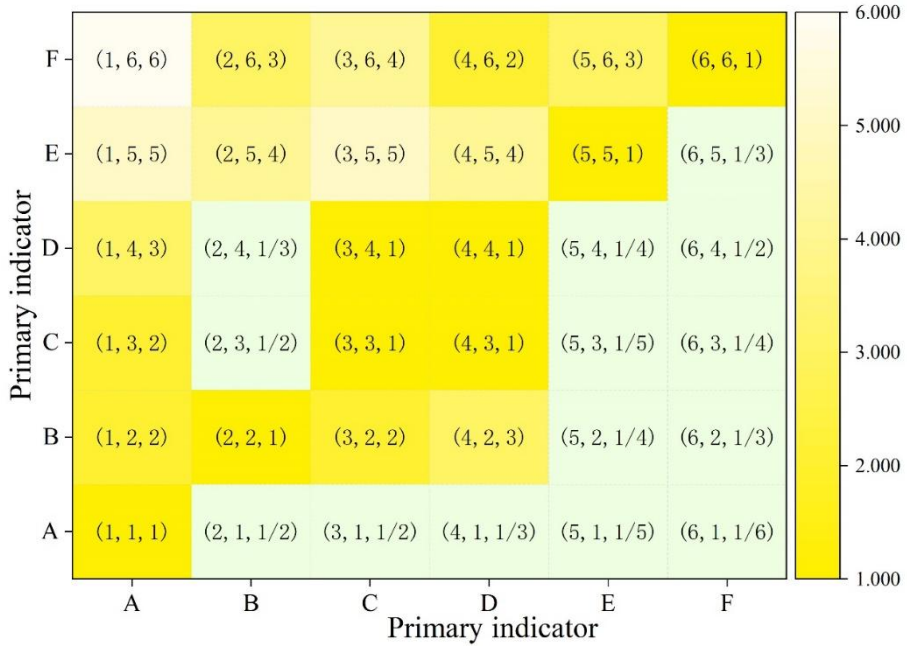

Figure 4: The weight and consistency test results of the first level index

(2) Simultaneously, consistency tests were conducted for the weights of secondary indicators under each of the following categories: "A Financial Strategy Capability," "B Financial External Resource Integration Capability," "C Internal Resource Allocation Capability," "D Risk Control Capability," "E Real Estate Development Financial Management Learning Capability," and "F Financial Data Performance Capability." The CR values for all secondary indicators were less than 0.1, meeting the consistency test criteria.

(3) Weight and Consistency Tests for Tertiary Indicators

The process to determine the weights of tertiary indicators was done in the same way that the primary and secondary indicators were determined. Because there were numerous tertiary indicators, the judgment matrix used for each indicator is not discussed; only the results from their computations will be shown. The CR ratios of all the tertiary indicators were below 0.1 and thus passed the test. The results of their weights and consistency tests are indicated in Figure 5.

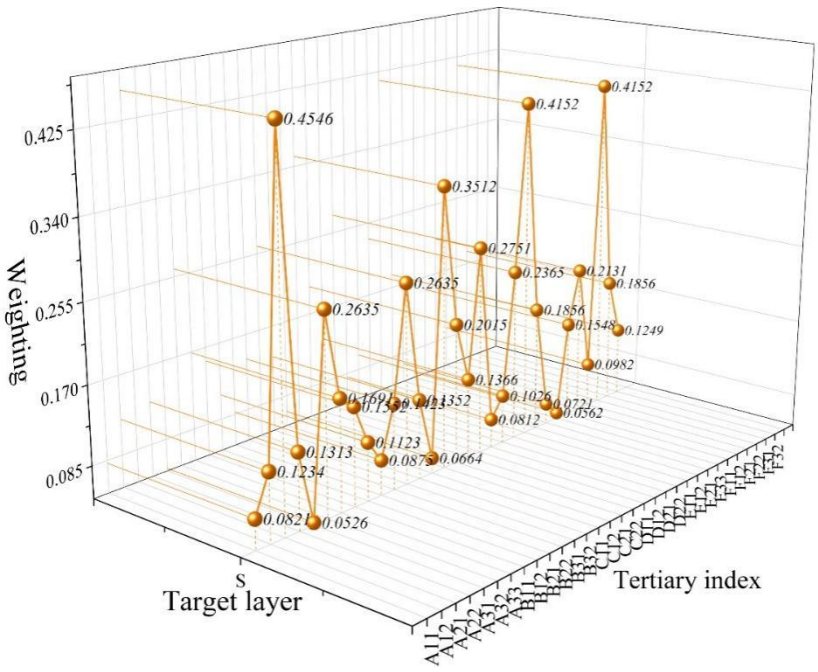

Figure 5: The weight and consistency test results of each three levels

4.4.2 Hierarchical Total Sorting

Hierarchical total ranking implies the computation of the weights of all the factors through the use of the weights generated by the single ranking of all the factors, where the factors of the former hierarchy serve as the base for comparison. The hierarchical total ranking of this study is presented in Figure 6. The combined weights of all the factors depicted in the figure imply the hierarchical total ranking of this study. From Figure 6, it can be seen that the highest weight coefficient among the six major factors is “Real Estate Development Financial Management Learning Ability.”

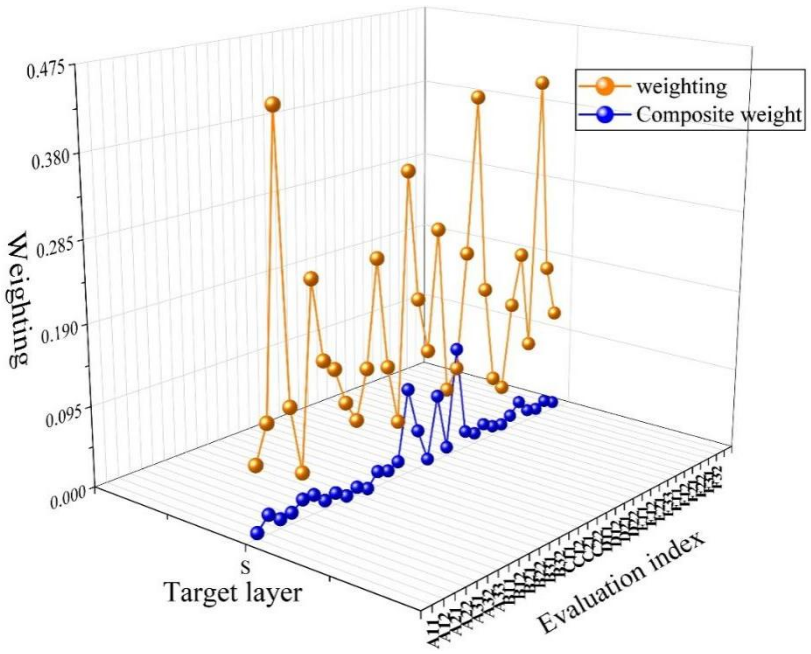

Figure 6: The results of the hierarchy of this article

In the course of evaluation, the questionnaire survey technique was used where the "Quality Evaluation System of Talents Cultivation of Real Estate Development Financial Management" questionnaire was distributed in the amount of 462 pieces. In total, 458 questionnaires were filled out with the rate of returning equal to 99.13%. Among them, 430 questionnaires were valid, which constitutes the validity rate of 93.89%. Taking into account the large amount of data and its high validity rate, mathematical statistics proved the authenticity and reliability of the results received.

Analysis of questionnaire data provided information about the state of talents cultivation in the framework of the university's Real Estate Development Financial Management program. Indicators were scored according to questionnaire data and data received as a result of the field study, resulting in the overall score showing the general assessment of the university's talent cultivation system for this program.

Tertiary indicators of the university's real estate development financial management talent cultivation are presented in Figure 7. As seen from the figure, no indicator received less than the passing grade. Five indicators had their scores above 85 points while three – more than 90 points. According to tertiary indicator scores, the majority of indicators in the university were evaluated in medium terms; moreover, audit quality indicator also received the medium score.

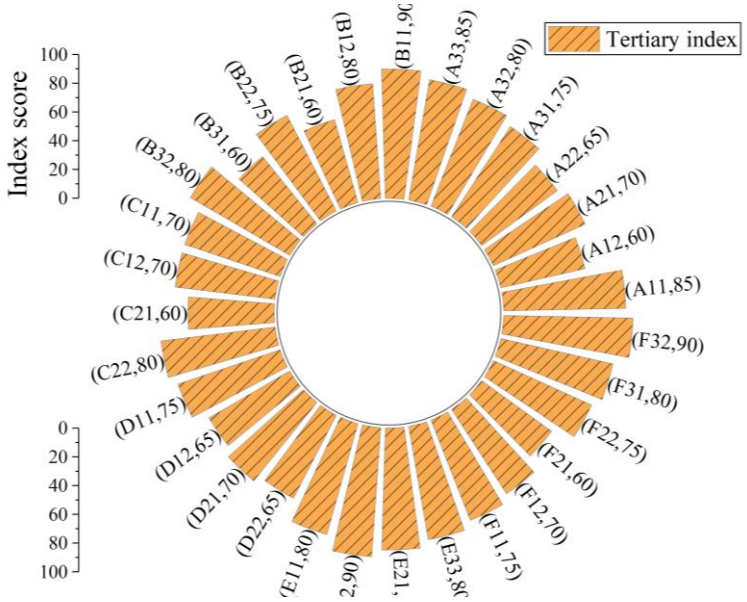

Figure 7: The financial manager will be able to train the results of the third level index

5 Conclusion

This paper establishes an evaluation system for cultivating financial management talent across the entire real estate development lifecycle, guided by the principles of industry-education integration. Using a comprehensive weighting method, indicators for developing financial management capabilities in real estate development are assigned weights. Combined with the results of the indicator hierarchy analysis, key elements for cultivating financial management talent in real estate development are identified and assigned actual scores.

Through the comprehensive weighting approach, specific weights for the quality evaluation indicators of financial management talent cultivation in real estate development under industry-education integration were determined. The weights for the six primary indicators are as follows: Internal Resource Allocation Capability C = 0.1407, Risk Control Capability D = 0.1756, Real

Estate Development Financial Management Learning Capability E = 0.2531, and Financial Data Presentation Capability F = 0.2235. Based on actual survey data, it was found that Real Estate Development Financial Management Learning Capability is the key factor in cultivating such talent, and the university's talent cultivation system for this field is at an intermediate level.

Funding

1 Project Title:This work was supported by the Zhejiang Provincial Department of Education's Industry-University Collaborative Education Project: Subject Source: Based on the "four-chain synergy", the construction and practice of the professional and creative integration and collaborative education model of higher vocational colleges (428).

2 Project Title: Research and Practice on the Dual-loop Model of "Reverse Design-Dynamic Optimization" for AI-driven OBE Modular Courses in Higher Vocational Colleges Subject Source: 2026 Annual Higher Education Research Project of Zhejiang Higher Education Association

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