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Innovation of Financial Accounting Talent Cultivation Mode in Colleges and Universities Based on Multi-source Data Mining

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Abstract In this paper, K-Prototype algorithm is used to mine the faculty data of financial accounting majors in colleges and universities to establish a group characterization method. The mining data is used to establish a competency index system for accounting informatization talents, and the weights are determined by the hierarchical analysis method. It improves the training mode of accounting talents and provides the basis for cultivating accounting informatization professionals adapted to the market demand. The results show that the total scores of accounting majors in college Z are above 2000, which is a good score, but there is still room for improvement. Through the application analysis of the competence evaluation index system constructed for the cultivation of accounting informatization talents, the average values of 24 secondary indexes are within the range of 3.7∼4.0. The weight coefficient of computer ability is ranked in the 2nd place with 4.44%, therefore, the training of informatized accounting talents should focus on the cultivation of computer ability of students in colleges and universities. Students' overall satisfaction with the informationized accounting talent cultivation mode is 3.7, which is higher than the theoretical mean value of 3.

Index Terms multi-source data mining, K-Prototype algorithm, informational accounting, hierarchical analysis approach

I. Introduction

The training of accounting talents is an important part of accounting reform and development [1]. In recent years, with the transformation of digital intelligence in accounting, the construction of accounting profession is facing many opportunities and challenges [2], [3], and is in constant change. The transformation and upgrading of employers and the expansion of accounting functions have directly promoted the changes in the demand for accounting talents [4], and colleges and universities are in urgent need of professional education and teaching reform [5]. Oriented by the characteristics of the development of the times and market demand, the current status and predicament of the current industry personnel as a breakthrough [6], [7], based on the characteristics of the traditional college and university accounting personnel training model to conduct a comparative study, targeted to put forward proposals for change and innovation of the personnel training model [8].

At present, most of the college students' innovation and entrepreneurship projects that can be transformed into practical work are many intellectual property rights and patents for science and engineering majors, which leads to a poor understanding of innovation and entrepreneurship education for liberal arts majors [9], [10]. This is mainly reflected in the process of innovation and entrepreneurship education, for innovation and entrepreneurship activities are not well implemented in place or in form [11], [12]; for the construction of the teacher team has not been reformed and improved from the substance, including the selection mechanism of the "dual-teacher" teachers, the mechanism of protection, training mechanisms, etc. [13], [14]. Although some schools have set up innovation and entrepreneurship education base, the school itself also provides a practice platform, but the practice provided or the equipment invested does not well implement the essence of innovation and entrepreneurship, and can not mobilize the students to really invest in innovation and entrepreneurship education new model [15]–[17].

Under the background of collaborative innovation in colleges and universities, the development of accounting talent training mode can, on the one hand, input a steady stream of new accounting talents for the society, and on the other hand, it can also promote the continuous updating of the cause of colleges and universities [18], [19]. Based on this, in the actual process of talent cultivation, the university collaborative through the development, improve the students' accounting professional theory level, establish a dynamic mechanism for evaluation and revision of talent cultivation objectives, optimize the allocation of financial resources in universities, and implement the old to bring the new model, the rational arrangement of the realization of the plan, to improve the ef-

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ficiency of accounting talent cultivation under the background of collaborative innovation in colleges and universities, at the same time, for the sustainable development of society to provide a constant flow of talent base [20], [21].

In this paper, the K-prototype algorithm is used to mine student population features under multi-source data. Hamming distance is used to measure the distance of categorical features and Euclidean distance is used to measure the distance of numerical features. The data is fed into the Kprototype algorithm to discover the optimal number of clusters. Based on this clustering result, the differences in features between groups are identified and significant features affecting student classification are found. Construct an informational accounting talent evaluation model from the mined faculty data. Use quantitative methods to quantitatively evaluate the evaluation indexes at the lowest level. Using the data obtained from the evaluation indexes of the last level, combined with the weight calculation to derive the scores of the indexes at all levels step by step, and then to find the final scores, and to derive the results of the evaluation of accounting talents at all levels by comparing the scores with the grade comparison table. Finally, the experimental results and practical experience are combined to put forward the corresponding innovative decision-making suggestions for the training of informatized accounting talents.

II. Quality Evaluation of Information Technology Talents Based on Multi-Source Data Mining

A. Academic affairs multi-source data mining

Mining and clustering analysis are performed on the multi-source data of teaching affairs, and the teaching characteristics are obtained through clustering analysis, so as to establish an efficient talent evaluation index system. The qualitative research for campus data focuses on the meaning understanding, interaction influence, life experience and scene scenario between people and people, and between behaviors and behaviors. Due to the specificity of the campus data mining application scene, the interpretation and application of the data analysis results need to fully consider the students' psychology, growth environment, growth background, educational environment and other factors, so the combing of qualitative research results can better serve the analysis and application of the research results in this paper.

1) Clustering model

Clustering is an unsupervised machine learning method that aggregates individuals with similar behaviors into a group, i.e., clustering is the process of taking a dataset that has no categorical labels and dividing it into a number of clusters. In natural and social sciences, there are a large number of real-world problems that require categorization. However, in fact, there is no precise definition of clustering, and some people even think that clustering is difficult and unnecessary because cluster analysis is based on subjective judgment.

Nevertheless, experts and scholars in the academic community still agree that clustering "similarity within the class and exclusivity between classes" characteristics of the clustering process of the main algorithm is as follows.

Given a sample set of data:

$$C = \{X_1, X_2, \ldots, X_j, \ldots, X_N; \\ X_j = (x_{j1}, x_{j2}, \ldots, x_{jd}) \in R^d\}. \quad (1)$$

Here, X_j denotes a vector, called a sample point or sample. X_{jd} denotes a variable, often referred to as an attribute, feature, variable, or dimension, etc. Delineation clustering divides the dataset into K clusters that need to be satisfied:

$$\begin{cases} C = \{C_1, C_2, \cdots, C_K\}; K \leq N \\ C_i \neq \emptyset; i = 1, 2, \cdots, K \\ \bigcup_{i=1}^{k} C_i = X \\ C_i \bigcap C_j = \emptyset; i, j = 1, 2, \cdots, K, i \neq j \end{cases} \quad (2)$$

Hierarchical clustering, on the other hand, is the construction of a dataset into a kind of tree-like structure, i.e:

$$\begin{cases} H = \{H_1, H_2, \ldots, H_Q\} Q \leq N \\ C_i \in H_m, C_j \in H_l; m > l \\ C_i \subset C_j or C_i \bigcap C_j = \emptyset; m, l = 1, 2, \ldots, Q, i \neq j \end{cases} \quad (3)$$

With the increasing improvement of data mining technology, the scope of application of educational big data is expanding, mainly including the development of e-learning environment, knowledge discovery in educational context, student performance prediction, educational aids and so on. At present, experts and scholars have conducted a lot of research around the application of educational data mining and learning analytics in higher education. For example, grouping similar learning content based on student interaction patterns or grouping similar groups of students is the process of cluster analysis of educational data. The massive demand for data from these studies has largely driven the collection of student and learning process data in Learning Management Systems (LMS) in higher education institutions.

The researchers have studied the educational data sets by performing cluster analysis on the student data sets based on the students' test scores, which in turn allows for further analysis of the characteristics of different groups of students. Using process variables of educational data such as scholarships and honors across semesters, similarities and differences in student academic performance can be significantly observed.

2) K-prototype algorithm

Now it's a large number of times, and data processing is difficult not only because of the large number of data, but also the problem of the dimension of the data. The problem in the two-dimensional plane coordinate system is more complicated than the one-dimensional one, and the problem in the three-dimensional space coordinate system is more complex and more abstract, so that a lot of the stereo is difficult to think of in our mind. As a result, the difficulty of each elevated dimension increases greatly. When we're doing data clustering, the elements that are given have n non-identical properties, and if each attribute is seen as a dimension, then the n attribute is the

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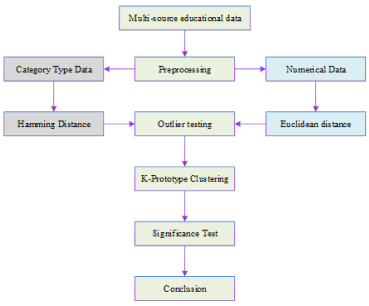

Figure 1: research framework

n dimension problem. If we are going to be very inefficient and inefficient, the results are not necessarily accurate. The method of the k-prototype algorithm can solve the problem of traditional clustering algorithm, so this paper introduces the mining of the k-prototype clustering algorithm.

The framework of the K-prototype algorithm study is shown in Figure 1. In this section, students are grouped using K-prototype's novel unsupervised learning algorithm and identified clusters are quantitatively analyzed to better understand the academic performance of the students. The K-prototype algorithm mines the characteristics of the student population under the multi-source data, and the method can be better applied to hybrid educational data mining.

Let $X = \{X_1, X_2, \ldots, X_n\}$ be an educational dataset, $X_i = (X_{i1}, X_{i2}, \ldots, X_{im})$, $i = 1, \ldots, n$ be a piece of educational data, and m be the dimensions of the data attributes. In this paper two different types of attributes are considered which are numeric attributes and categorical attributes. Numerical attributes include grades, age, etc. while categorical attributes include gender, race, honor, etc. Let u be the number of numerical attributes, then $X_{ij,j} = 1, \ldots, u$ is the data attribute of X_i and X_{ij}, $j = u+1, \ldots, m$ are the categorical attributes of X_i where m is the dimension of the data.

Let dataset X be divided into k clusters after clustering, then $C_i\ (i = 1, \ldots k)$ denotes the set of data objects contained in cluster i. Then the clustering result must satisfy the following constraints:

$$\begin{cases} C_1 \bigcup C_2 \bigcup \cdots \bigcup C_k = X \\ C_i \bigcup C_j \neq \emptyset, i \neq j \end{cases} \tag{4}$$

In the K-Prototype algorithm, the numerical attribute terms of dataset X are first normalized. Then k samples from X are randomly selected as clustering center vectors. The algorithm enters into an iterative clustering process. In each iteration, each cluster set is first initialized to an empty set. Then, the distance d_{ij} between each sample and each cluster center is computed, which reflects the variability between the samples and the centers.

The distance between samples X_i and μ_j can be defined as:

$$d_{ij} = \sum_{j=1}^{n} (X_{ij} - \mu_{ij})^2 + \gamma \sum_{j=u+1}^{m} \delta(X_{ij}, \mu_{ij}), \tag{5}$$

where Euclidean distance is used to measure the distance of numerical attributes and $\delta(X_i, \mu_{ij})$ is the Hamming distance used to measure the categorical data if $X_{ij} = \mu_{ij}$. $\delta(X_{ij}, \mu_{ij}) = 0$. $\delta(X_{ij}, \mu_{ij}) = 1$. The algorithm divides the samples into the closest clusters based on the distance between the samples and the centers. Update μ for the newly generated clustering centers where:

$$\mu_{ik} = \frac{1}{|C_i|} \sum_{x_j \in G_i}^{u} X_{ik}, k = 1, \ldots, u. \tag{6}$$

Assume the jst categorical attribute of the data $v_1, v_2, \ldots, v_q$, $\mu_{ij} = v_r$, $j = u+1, \ldots, m$, where $r = \arg \max_{j=1,\ldots,q} P(v_j)$, $P(v_j)$ represent the probability of taking v_j in cluster C_i. Finally, the algorithm checks if the clustering center has been updated. If there is an update or the number of iterations is less than a threshold, the algorithm continues with the clustering iterations, otherwise the algorithm ends.

The time complexity of the algorithm to compute the distance between two attribute values is $O\left(m^2 n + m^2 S^3\right)$, where n is the sample size of all the data, m is the total number of data attributes, and S is the average of the different categorized values, for each iteration, the computational cost of the algorithm is linearly related to the number of data objects. The algorithm improves the dissimilarity calculation and cluster center update without adding new computations.

When applying the K-prototype algorithm, it is necessary to pre-specify the number of clusters, whose value is related to the final clustering performance and the portrait situation. The contour coefficient is an effective method to evaluate the clustering performance by combining cohesion and separation. For data point i, its contour $s(i)$ is calculated as follows:

$$s(i) = \frac{b(i) - a(i)}{\max\{a(i), b(i)\}}, \tag{7}$$

where $a(i)$ is the distance between sample i and the other samples in the cluster and $b(i)$ is the average distance between sample i and the samples in the nearest cluster. By averaging the profiles of all the samples in the dataset, the profile coefficients of the dataset can be obtained as follows:

$$s = \frac{\sum_{i=1}^{N} s(i)}{N}, \tag{8}$$

where N is the total number of sampling points in the dataset. N The closer the contour coefficient is to 1, the better the clustering is and vice versa.

B. Accounting Talent Training and Evaluation Combined with Academic Affairs Data

1) Information-based accounting personnel training model

In the era of informationization, accountants will face new challenges and opportunities, and accounting informationization talents are also born, and it is necessary to re-construct the evaluation system of professional competence of accounting informationization talents to train the mode of transformation in the direction of the development of "informationized

finance" that reflects the change of the connotation of the accounting profession. The new direction means that the professional construction is shifting to strengthen the training of complex digital talents in management accounting, which should be integrated into the application of informatization and digital technology in the professional curriculum, and follow the practical development of enterprises closely to obtain the continuous optimization of teaching content based on the integration of industry and education to promote the realization of the professional high-quality development.

In the informationization environment, the accounting personnel put forward higher requirements, specifically in:

(1) knowledge structure, in the informationization environment, the environment is in the process of constant dynamic change, therefore, accounting personnel need to master the enterprise industry-related knowledge, economic and financial knowledge and related legal policies in order to be able to combine with the enterprise's own situation to flexibly respond to the external environment. As an accounting professional, not only should be able to solid grasp of the financial knowledge of the primary and secondary accountants, but also need to master the financial strategy, audit and internal control, mergers and acquisitions and reorganization and other financial knowledge to make the enterprise in its environment to obtain better development. At the same time, they should also master the knowledge related to enterprise management. In the accounting informationization environment, accounting talent and intermediate accounting talent, not only to master the business-related information technology knowledge and common computer software tools operating knowledge, but also need to master the knowledge of enterprise management software.

(2) Business ability, in the informationization environment, accounting talent and other accounting talent is different from the accounting talent needs to have a strong business ability, able to skillfully deal with a variety of economic operations. Under the informationization environment, the economic situation is complex and volatile, as accounting personnel, should have the ability to make professional judgment of accounting policy, so that the financial information is more real and reliable, useful for decision-making. Accounting personnel should also be able to organize and implement internal control within the enterprise, the comprehensive use of financial information and combined with information on changes in the external environment for analysis and decision-making, in order to provide recommendations for management decision-making. Accounting talent with the information technology environment, and external exchanges more closely, therefore, accounting talent also need to have good communication and coordination skills and organizational leadership skills.

(3) Business quality, information technology environment, accounting talent should have vision quality, including industry vision, risk vision and policy vision, the industry should have a forward-looking understanding of the changes in the national economic policy at any time. Accounting talents, like other accounting talents, should also strictly abide by accounting ethics in the process of engaging in accounting work.

2) Accounting talent evaluation methods

By calculating the weights of each indicator to simplify the solution of complex target problems. Its outstanding advantage is the clever use of qualitative and quantitative analysis, the subjective analysis of our judgment of the problem in a quantitative form of intuitive representation and data processing. The basic steps are as follows:

(1) Establish a hierarchical model on the basis of the specific analysis of the problem, the factors related to the final goal will be decomposed into various levels, the factors at each level are interconnected, and there is only one factor at the top level of the whole system, that is, the final goal of the problem, so that the hierarchical model formed is the decomposition of the total goal.

(2) Constructing a judgment matrix A unique feature of the hierarchical analysis method is the use of the ratio of the importance of two different programs when comparing the degree of importance of the two expressed in the form of the ratio of the degree of importance of the two. Using this method the weights of each indicator in the hierarchical model are calculated by constructing a matrix.

(3) Calculate the weight vector and do the consistency test For each pairwise comparison matrix, we need to determine whether its eigenvector is the weight vector through the consistency test before calculating the final result, the specific test method is: firstly, calculate the largest eigenvalue of the matrix and its corresponding special eigenvector, and then compare it with the consistency test index. If the test is passed, the eigenvectors are weight vectors: if not, the matrix is reconstructed.

Weight calculation method through the hierarchical analysis method will be at all levels of accounting talent evaluation indicators for decomposition, then determine the weight of the indicators at all levels, first by the last level of the score and its corresponding weight multiplied by the score of the indicators of the next to the end of the level, and then use the same method to find out the score of the corresponding evaluation indicators of the previous level, and ultimately to find out the final score. Let the indicator value be expressed by Y, the weight be expressed by A, i denotes the level, k denotes the number of indicators of the corresponding level, then the formula for the indicator value is:

$$Y_{i-1} = \sum_{k=1}^{n} A_{ik} Y_{ik}. \tag{9}$$

III. Empirical Research on the Training of Accounting Personnel

A. Mining Analysis of Accounting Students' Achievement

In this paper, the academic affairs big data of accounting majors in Z universities are selected as the research object, and the multi-source data mining technology is used to process and analyze the students' pass rate of physical assessment, employment rate, pass rate of professional skills certificate, performance table, and with each subject score, so as to develop a scientific, reasonable and practical value of the information-based accounting professional talent cultivation quality evaluation system.

Six students were randomly selected from each of the school's accounting classes of 2022 and 2023 for a total of 12 students. Letters C, D, E, F, G, H, I, J, K, L, M, N were used to represent the 12 students, and the breakdown of the scores is shown in Table 1.The total scores of the 12 students are 2773, 2776, 2471, 2437, 2233, 2219, 2781, 2742, 2453, 2418, 2275, 2265.Overall, the accounting major score aspect is relatively good, but there is still a lot of room for improvement in the quality of talent training for accounting majors in this school, which means that the comprehensive quality of students needs to be improved.

B. Descriptive statistical analysis of evaluation indicators

Combined with the background of the current information age, a competence evaluation index system for the training of accounting informatization talents has been established. The questionnaire is mainly used in the online platform recycling questionnaire, and the analysis of the analysis of the data is analyzed. The student edition survey was recycled 210 copies. Of the questionnaires, 136 were from boys, with 64.76%in total, and women provided 74 effective questionnaires, accounting for 35.24 percent. There is no limit to the student majors involved in the survey, which are focused on the age of 18 to 22. For the teacher group, 87 effective questionnaires were received. These feedback covers the level of professional titles, from the high level (15) and the sidelin senior (28) to the intermediate (44). Teachers are focused on between 3 and 20 years, and the course is limited. On the basis of the established vocational competence index system, it is argued whether the index system is effective. The data from the questionnaire survey are analyzed by descriptive statistics using SPSS software, and the specific results are shown in Table 2. Weights are assigned to each indicator, and the respondents are asked to score between 1 and 5. Where "1" represents very unimportant, "2" represents unimportant, "3" represents average, "4" represents important, "5" represents very important, and the higher the score, the more important the indicator is. The average scores of the 24 indicators in the questionnaire survey are all concentrated in 3.7∼4.0, and the average scores of all indicators are relatively balanced. Moreover, the standard deviation and median of the 24 indicators are also centrally distributed, which means that the fluctuation of the scores of each indicator in the questionnaire is relatively small, the distribution is relatively balanced, and there are no abnormal values in the data.

C. Calculation of weights

Through the above analysis, it can be found that there are still some differences among the indicators in the constructed professional competence index system of accounting informatization talents. Weights are assigned to each index in the index system to quantitatively reflect the importance of each index. Therefore, the weights of 24 indicators can be calculated by hierarchical analysis as shown in Table 3. Among them, the top 7 indicators are management decision-making ability, computer ability, law-abiding, objectivity and fairness, information system mastery and application ability, data analysis, processing and application ability, cross-border integration ability, accounting computerization ability, dedication and modern technology application ability. These indicators reflect, to some extent, the requirements and expectations of undergraduate accounting majors for the occupational ability of accounting informatization talents.

In the context of informationization, the use of big data, intelligence, mobile Internet, cloud computing and other technologies can not be separated from the use of computers, so in the ranking of the vocational ability index system, computer skills ranked second only to the management decision-making ability in the second place, the weight coefficient of 4.44%, becoming an indispensable basic skills of accounting informationization personnel. With the arrival of the era of informationization and intelligence, the application of computerized accounting has freed accountants from heavy accounting work and enabled them to use information data to make management decisions. Through the weighting of the index system, it can be found that the information system mastery and application ability, data analysis, processing and application ability, cross-border integration ability, and modern science and technology application ability among the information technology analytical ability are ranked relatively high, reflecting that the accounting personnel not only need to be the data mover, but also need to analyze, deal with, and process the data with the ever-changing modern science and technology, and to become a cross-border integration type of talents.

D. Satisfaction with the training model

1) General characteristics

In this study, the information technology accounting professional talent training mode satisfaction is divided into four dimensions, which are training objectives, curriculum, teaching methods, training system and overall satisfaction, and the five-level rating method of professional talent training mode satisfaction scale is adopted, and the higher the mean value, the higher the teacher's satisfaction in the dimension is represented. On the contrary, the lower the satisfaction is.

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Subject	2022						2023					
Chinese	C	D	E	F	G	H	I	J	K	L	M	N
Mathematics	86	73	79	79	66	62	98	86	63	61	64	65
English	74	81	82	61	68	64	86	61	67	76	65	63
Computer	86	76	77	85	73	71	91	87	97	71	79	73
Career planning	88	84	87	73	69	76	86	88	77	82	66	64
Occupational ethics	89	81	92	78	66	64	90	81	72	73	69	82
Economy	91	82	65	64	74	65	69	84	73	77	63	83
Politics	85	78	73	83	66	63	93	86	67	100	67	62
Philosophy	88	81	72	82	66	74	92	89	90	78	80	68
Sports	84	81	81	64	62	64	65	88	97	90	64	67
Art	81	83	82	77	75	76	91	82	65	98	73	65
History	88	93	80	75	73	63	93	96	67	72	71	76
Mind	82	68	77	79	62	67	90	88	69	81	78	70
Basic accounting	85	81	65	61	68	62	87	87	62	61	67	67
computerization	92	92	72	80	63	65	91	82	67	82	74	66
finance	88	82	87	81	62	74	67	83	79	87	65	64
Economic law	92	91	69	79	74	62	87	86	97	73	64	69
Tax	87	72	72	65	63	69	84	89	65	78	62	63
Manual accounting	65	97	71	77	78	66	81	63	67	63	77	76
Cost accounting	82	67	62	78	74	75	85	83	67	73	63	70
Excel	79	86	75	69	65	73	90	82	81	68	81	65
Financial management	88	96	72	81	72	65	92	87	69	63	64	67
Basic skill	90	94	87	77	62	68	83	86	87	76	62	69
Cashier	86	97	72	65	66	77	81	87	87	77	70	62
Simulation practice	84	89	67	74	69	63	66	88	92	63	62	64
Book writing	76	66	70	75	71	64	94	85	63	62	73	76
Tax practice	88	73	77	77	68	63	90	87	70	83	69	62
Admission education	87	78	80	70	69	68	77	81	73	63	64	68
Graduation practice	89	93	72	76	63	74	68	66	63	62	76	67
Graduation education	80	88	67	75	64	65	69	82	63	61	72	69
Employment guidance	85	85	82	73	67	62	93	83	87	80	62	79
Calligraphy	79	91	68	75	65	62	78	81	63	61	62	68
Office software	81	100	72	73	68	66	86	76	72	62	76	66
Mandarin Chinese	68	97	65	56	62	67	88	82	75	61	71	70
Total	2773	2776	2471	2437	2233	2219	2781	2742	2453	2418	2275	2265

Table 1: Student achievement list

Name	Minimum value	Maximum value	Mean value	Standard deviation	Median
Organizational communication	1	5	3.79	1.136	4
Team ability	1	5	3.817	1.15	4
Foreign language ability	1	5	3.676	1.148	4
Computer capability	1	5	3.812	1.203	4
Innovative ability	1	5	3.777	1.16	4
Management decision-making ability	1	5	3.833	1.319	4
Financial management	1	5	3.83	1.176	4
Financial analysis ability	1	5	3.861	1.163	4
Accounting computerization	1	5	3.811	1.188	4
Financial planning capability	1	5	3.836	1.145	4
Accounting capacity	1	5	3.862	1.136	4
Risk management and	1	5	3.855	1.137	4
Love is dedicated	1	5	3.874	1.205	4
Honest faith	1	5	3.924	1.185	4
Objective justice	1	5	3.916	1.226	4
law-abiding	1	5	3.921	1.235	4
Resistance setback	1	5	3.887	1.164	4
Information system mastery	1	5	3.835	1.199	4
Data analysis and application ability	1	5	3.862	1.203	4
Information gathering, processing and insight	1	5	3.901	1.176	4
Modern technology and technology	1	5	3.874	1.199	4
Ability to use smart accounts	1	5	3.885	1.193	4
Application of accounting software	1	5	3.846	1.183	4
Crossover ability	1	5	3.809	1.193	4

Table 2: Descriptive statistical analysis of evaluation indicators

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	Name	Entropy of information	Weight factor(%)	Sort
Basic skill	Organizational communication	0.9923	3.9	17
	Team ability	0.9922	3.99	16
	Foreign language ability	0.9917	4.23	8
	Computer capability	0.9913	4.44	2
	Innovative ability	0.992	4.09	12
	Management decision-making ability	0.9893	5.45	1
Professional skill	Financial management	0.9918	4.18	11
	Financial analysis ability	0.9922	4	15
	Accounting computerization	0.9916	4.29	6
	Financial planning capability	0.9923	3.93	17
	Accounting capacity	0.9926	3.8	19
	Risk management and	0.9925	3.82	18
Professionalism	Love is dedicated	0.9916	4.28	7
	Honest faith	0.9921	4.02	14
	Objective justice	0.9914	4.4	3
	law-abiding	0.9913	4.44	2
	Resistance setback	0.9923	3.93	17
Information technology analysis ability	Information system mastery	0.9914	4.37	4
	Data analysis and application ability	0.9915	4.34	5
	Information gathering, processing and insight	0.9921	4.03	13
	Modern technology and technology	0.9916	4.28	7
	Ability to use smart accounts	0.9918	4.19	10
	Application of accounting software	0.9918	4.21	9
	Crossover ability	0.9915	4.34	5

Table 3: Weights of 24 indicators

The results of the overall analysis of students' satisfaction with the cultivation mode are shown in Table 4. Taking the theoretical mean value of 3 as the reference value, the overall satisfaction of the surveyed students of the University of Z is 3.7, which is higher than the theoretical mean value of 3. It can be seen that the overall status of students' satisfaction at the University of Z is at a relatively satisfactory level. Among the four dimensions of the sub-assessment, the scores of the dimensions of curriculum, teaching method and cultivation system are at a high level, with the mean values of 3.77, 3.92 and 3.58, respectively, among which the dimension of teaching method has the highest score, with the mean value of 3.87, which indicates that the students of the University of Z are more satisfied with the teaching method, curriculum, and cultivation system of the training mode of informatized accounting talents. However, the cultivation objective, 3.451, ranked last, indicating that the students of University Z were at an average level of satisfaction with the cultivation objective. In order to further prove whether there are differences in the satisfaction of the training mode among students of different genders, grades and GPAs, some tests and analyses were also done in this study.

2) Analysis of GPA differences in satisfaction with the mode of training

In order to find out whether there is a significant difference in the satisfaction of University of Z students with different GPAs on the training model of the undergraduate education program, an ANOVA was conducted on the training model for students with different GPAs, and the results are shown in Figure 2. GPAs A-E are: below 2.0, 2.5-3.0, 3.0-3.5, 3.5-4.0, and above 3.5. The samples with different GPAs did not differ in the overall mode of training (P=0.867>0.05), and none of the

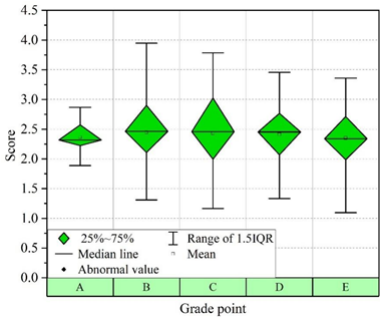

Figure 2: The difference in the performance of the culture pattern satisfaction

samples with different GPAs differed significantly (P-value greater than 0.05) with respect to any of the four dimensions, namely, training objectives, curricula, teaching methods, and training system. This suggests that the satisfaction with the talent training model of the undergraduate education program at the University of Z is not affected by the students' grade point.

E. Application effect

First, the "Internet" provides new support for the development of accounting technology. With the rapid development of emerging technologies such as cloud computing, large Numbers and mobile Internet, accounting information is more rational real-time, dynamic and centralized, accounting accounting is more standardized, efficient, convenient, and the development of information technology provides a strong support for the evolution of accounting technology.

Second, the "Internet" has brought new machines to accountants. With the assistance of Internet technology and

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Dimension	Sample size	Mean value	Median theory	Ranking
Teaching mode	320	3.92	3	1
Course setting	320	3.77	3	2
Culture system	320	3.58	3	3
Culture target	320	3.51	3	4
Total	320	3.7	3	–

Table 4: Overall analysis of mode satisfaction

large Numbers, the unit construction covers financial analysis and pre-side, financial a more complete modern management system, such as business planning, capital market operation, comprehensive budget management, risk control and performance management, will be possible to help the accounting price the transformation of value management and the unique role of management accounting are further reflected.

Third, the "Internet" has created a new environment for the transformation of accounting functions. With the rapid development of network technology, the accounting function has been controlled by the traditional "information and the analysis and assistance of the information and the analysis and assistance of the information," to "the post-actual calculation" to "the prior advance and the incident control." Accelerating the "Internet" is conducive to better use of accounting presides, planning, decision-making, control, analysis, supervision and other functions, and promote the upgrading of accounting work.

IV. Conclusion

Based on multi-source data mining, this paper combines the data characteristics of academic affairs big data, and establishes the quality evaluation system of informatized accounting talent cultivation through hierarchical analysis, so as to put forward effective countermeasure suggestions for the management precision and decision-making science of colleges and universities. The results show that:

1) Using data mining to analyze that University Z is currently better in terms of the performance of accounting majors, but still has a lot of room for improvement.
2) The average scores of 24 secondary indicators are concentrated in 3.7∼4.0, with more balanced scores and even distribution, and the top 2 indicators are management decision-making ability and computer ability, with weights of 5.45% and 4.44% respectively. Therefore, more emphasis should be placed on these two aspects in the training of informationized accounting professionals.
3) Students of University Z are more satisfied with the teaching methods, curriculum, and training system of informatization talent cultivation, and the satisfaction is not affected by students' GPA.

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