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Exploration on the Organic Integration of Asset Management and Budget Management in Colleges and Universities

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Abstract: *Higher education plays an important role in the development of social economy, and the management of state-owned assets in colleges and universities plays an important role in the construction and development of colleges and universities. The changes brought about by this technology also affect people's thinking. The purpose of this paper is that through the application of K-means clustering algorithm, it is of great significance to coordinate financial resources, standardize the allocation of state-owned assets and improve the efficiency of financial fund management. This study takes universities affiliated to Nanjing as the research object. The research finds that, as far as the current status of asset management in universities is concerned, there are still a series of serious problems that need to be solved urgently developing. Therefore, this article will discuss how to effectively integrate the corresponding measures of asset management and budget management in colleges and universities, so as to provide relevant opinions for reference.*

Keywords: *asset management, budget management, K-means clustering algorithm*

1. Introduction

College assets are an important part of state-owned assets, which refer to the sum of economic resources owned, used and managed by colleges and universities, which are owned by the state and can be measured in currency [1]. As far as the asset management work of colleges and universities is concerned, it mainly includes the increase of fixed assets, asset changes, asset disposal, asset inventory, financial management and other aspects. In 2021, the State Council of the People's Republic of China officially promulgated the "Administrative and Institutional State-owned Assets Management Regulations"[2]. The promulgation of this document has important practical significance for the standardized management of state-owned assets in colleges and universities, and the improvement of governance levels and governance capabilities. The document clearly states that entities using state-owned assets should follow the principles of "safety norms, economy and efficiency, openness and transparency, and consistency of powers and responsibilities", so as to achieve the goal of aligning physical management with value management, and combining asset management with budget management and financial management. It can be seen that the development of asset management in colleges and universities often presents the characteristics of complexity and diversification. As far as budget management is concerned, it plays an important controlling role in the raising, use and supervision of funds[3]. Therefore, it is necessary to fully integrate asset management and budget management. This paper mainly studies the deficiencies in the actual asset management process of colleges and universities, and how to effectively deal with the organic integration of asset management and budget management in colleges and universities.

2. Related work

Compared with the Regulations on the Administration of State-owned Assets of Administrative Institutions, there are still many problems in the asset management of colleges and universities, such as inconsistency of accounts, unclear family background, uneven allocation, idle waste, etc., which seriously restrict the role of state-owned assets and affect the sustainable development of colleges and universities. The study found that doing a good job in the medium and long-term planning of assets and strengthening the budget management of assets can effectively improve the efficiency of asset

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allocation, use and utilization. Budget management plays an important control role in fund raising, use, allocation and supervision, and is an important means to achieve optimal allocation of resources. The effective combination of asset management and budget management to improve the level of asset management has become a hot issue for scholars[4]. Gradually realize the combination of asset management and budget management in colleges and universities, and realize the integration of budget and asset management from the aspects of management thinking, budget execution, information control, asset inventory and performance appraisal, and improve the efficiency of asset utilization. The organic integration of college asset management and budget management can optimize the asset allocation of colleges and universities and give full play to the benefits of college assets. The combination of the asset department and the budget department must be a substantive combination, otherwise it will only be a mere formality, resulting in a substantial disconnect. Combined with the actual problems existing in the asset management of colleges and universities in Nanjing, this research proposes a specific path for the organic integration of budget management and asset management.

2.1 Construction of a model for the organic integration of asset management and budget management in colleges and universities

Asset management and budget management in colleges and universities promote and evolve each other. Both need to be harmoniously promoted to achieve sustainable development, as shown in Figure 1.

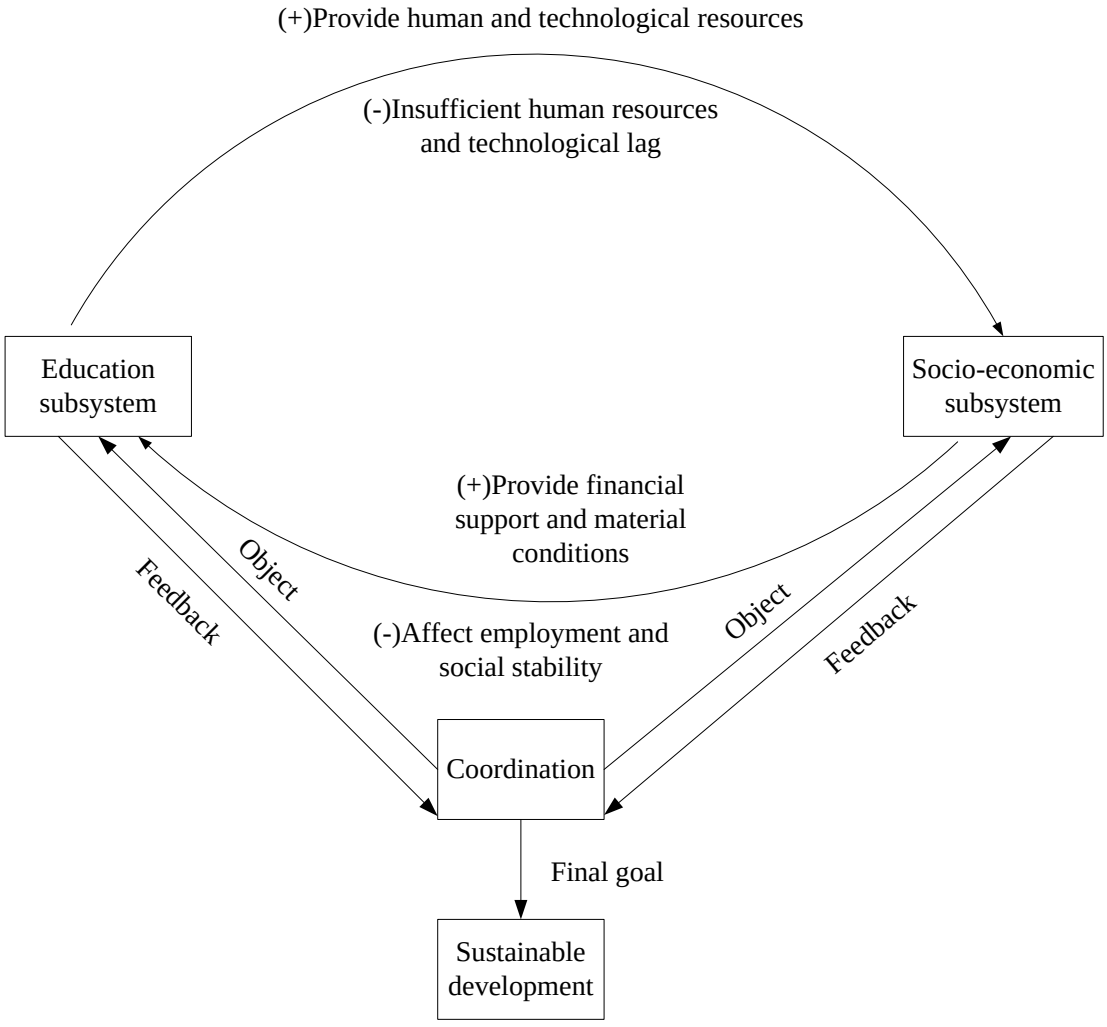

Figure 1. Construction of a model for the organic integration of asset management and budget management in colleges and universities

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2.2 K-means Clustering Algorithm

Cluster analysis is an important method for processing data, and clustering has also been applied in various industries, such as business field, biology, etc. The classical algorithm K-means has always been the focus of the research field and is a clustering method based on data partitioning [5]. Clustering is the separation of a tapestry of data into distinct categories according to certain criteria (such as distance criteria), so that the data in the same category can be better correlated, and the data that are not in one category can be greatly different[6]. Therefore, the introduction of the concept of "distance" can know the correlation between the data, that is, the similarity of the data, and at the same time, it can increase the efficiency of sample classification. Because the essence of cluster analysis is the classification of samples in different dimensions[7]. The three distance functions commonly used in cluster analysis are shown in the formula.

Minkowski distance:

$$D_q(X,Y)=\left\{\sum_I |X_i-Y_i|^q\right\}^{\frac{1}{q}} \quad (1)$$

When q takes 1, 2, ∞, the absolute distance can be obtained.

Mahalanois distance:

$$D(X,Y)=(X-Y)^T\times\sum{}^{-1}(X-Y) \quad (2)$$

$\sum$ is the covariance matrix of the sample matrix A. Mahalanobis distance is an improvement for the shortcoming of Mingshi distance affected by dimension.

Lance distance:

$$D(X,Y)=\sum_i\frac{|X_i-Y_i|}{|X_i+Y_i|} \quad (3)$$

The calculation formula of the similarity coefficient function of cluster analysis is shown in the formula. The similarity coefficient function can represent the similarity measure between feature variables.

Similarity coefficient:

$$C(X,Y)\le 1 \quad (4)$$

$$C(X,Y)=1 \quad (5)$$

$$C(X,Y)=C(Y,X) \quad (6)$$

C means function $C:V\times V\to[-1,1]$. The closer $C(X,Y)$ is to 1, the closer the relationship between the two feature variables.

There are two types of similarity coefficients:

(1) Cosine of the included angle:

$$C(X,Y)=\frac{\sum_i X_i\times Y_i}{\sqrt{\left(\sum_i X_i^2\right)\times\left(\sum_i Y_i^2\right)}} \quad (7)$$

Angle cosine considers the relationship between the various vectors in terms of shape. When the directions of the two vectors are similar, the cosine of the included angle is larger, and vice versa.

(2) Relevant factors

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$$C(X,Y)=\frac{\sum_i (X_i-\bar{X})\times(Y_i-\bar{Y})}{\sqrt{\left(\left(\sum_i X_i-\bar{X}\right)^2\times\left(\sum_i Y_i-\bar{Y}\right)^2\right)}} \quad (8)$$

Correlation Coefficient It represents the degree of linear correlation between two vectors.

The measure between classes generally uses the distance as the measure function. The shortest distance method is a commonly used one, and its calculation formula is shown in the formula.

$$D(G_1,G_2)=\min\left\{D(X,Y)\middle| X\in G_1, Y\in G_2\right\} \quad (9)$$

Hierarchical clustering, also known as systematic clustering, is the most widely used class of algorithms [8]. Hierarchical clustering is a method of dividing classes from more to less. Commonly used hierarchical clustering methods include the median distance method, the centroid method, the class average method and the deviation sum of squares method.

Intermediate distance method:

$$D_{kr}=\left(\frac{1}{2}D_{kp}^2+\frac{1}{2}D_{kq}^2-\frac{1}{4}D_{pq}^2\right)^{\frac{1}{2}} \quad (10)$$

Where:

G_k : indicates a certain category;

G_r : indicates a certain type, which is a combination of G_p and G_q.

$$D_{kr}=\left(\frac{1}{2}D_{kp}^2+\frac{1}{2}D_{kq}^2+\beta D_{pq}^2\right)^{\frac{1}{2}},-\frac{1}{4}\le\beta\le 0 \quad (11)$$

When $\beta=-\frac{1}{4}$, it is the middle distance method.

Center of gravity method: the distance between classes can be represented by the distance between the centers of gravity.

$$D_{pq}=d_{\bar{X}_p,\bar{X}_q} \quad (12)$$

$$\bar{X}_r=\frac{1}{n_r}\left(n_p\bar{X}_p+n_q\bar{X}_q\right) \quad (13)$$

$$D_{kr}=\left(\frac{n_p}{n_r}D_{kp}^2+\frac{n_q}{n_r}D_{kq}^2-\frac{n_pn_q}{n_r^2}D_{pq}^2\right)^{\frac{1}{2}} \quad (14)$$

Among them, the centers of gravity of G_p and G_q are $\bar{X}_p$ and $\bar{X}_q$, respectively. G_p and G_q are combined into G_r, and the number of samples of each type is n_p, n_q and $n_r=n_p+n_q$ respectively, and the corresponding centers of gravity are $\bar{X}_p$, $\bar{X}_q$ and $\bar{X}_r$.

Class average method: it is defined that the square of the distance between two classes G_p and G_q is equal to the average squared distance between the elements in the two classes, and its calculation formula is shown in the formula.

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$$D_{pq} = \frac{1}{n_p n_q} \sum_{X_i \in G_p, X_j \in G_q} d_{ij}^2 \quad (15)$$

$$D_{kr} = \left(\frac{n_p}{n_r} D_{kp}^2 + \frac{n_p}{n_r} D_{kq}^2 \right)^{\frac{1}{2}} \quad (16)$$

Among them, n_p, n_q are the volume of the models of G_p and G_q.

Dispersion sum of squares method: this method comes from difference analysis. If the classes are correctly classified, the total value of similar specimens' squared discrepancies shall be smaller, while the value of the sum of squared discrepancies among categories shall be larger. The calculation formula of this method is shown in the formula.

$$S_t = \sum_{i=1}^{n_t} \left(X_{it} - \overline{X}_t \right)^T \left(X_{it} - \overline{X}_t \right) \quad (17)$$

Total within-class variance sum of squares:

$$S = \sum_{t=1}^{k} \sum_{i=1}^{n_t} \left(X_{it} - \overline{X}_t \right)^T \left(X_{it} - \overline{X}_t \right) \quad (18)$$

The distance between classes is defined as:

$$D_{pq}^2 = \frac{n_p n_q}{n_r} \left(\overline{X}_p - \overline{X}_q \right)^T \left(\overline{X}_p - \overline{X}_q \right) \quad (19)$$

The recursive formula for distance:

$$D_{kr}^2 = \frac{n_p + n_k}{n_r + n_k} D_{kp}^2 + \frac{n_q + n_k}{n_r + n_k} D_{kq}^2 - \frac{n_k}{n_r + n_k} D_{pq}^2 \quad (20)$$

Among them, n_p, n_q, n_r, n_k are size of the specimens of G_p, G_q, G_r, G_k, separately. X_{it} represents the i-th sample in G_t, n_t stands for the size of G_t samples, and $\overline{X}_t$ is the center of gravity of G_t.

The above four hierarchical clustering methods are unified, namely:

$$D_{kr}^2 = \alpha_p D_{kr}^2 + \alpha_q D_{kp}^2 + \beta D_{pq}^2 + \gamma \left| D_{kp}^2 - D_{kq}^2 \right| \quad (21)$$

Table 1 Hierarchical clustering method specification table

Method	α_p	α_q	β	γ
Middle distance method	$\frac{1}{2}$	$\frac{1}{2}$	$-\frac{1}{4} \le \beta \le 0$	0
Center of gravity	$\frac{n_p}{n_r}$	$\frac{n_q}{n_r}$	$\frac{-(n_p n_q)}{n_r^2}$	0
Class average	$\frac{n_p}{n_r}$	$\frac{n_q}{n_r}$	0	0
Sum of squared deviations	$\frac{(n_k + n_p)}{(n_k + n_r)}$	$\frac{(n_k + n_p)}{(n_k + n_r)}$	$\frac{-n_k}{(n_k + n_r)}$	0

Where $G_r = G_p \cup G_q$, the same parameters are substituted to obtain different hierarchical

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clustering methods. These parties are listed in Table 1.

Algorithm $k-means$ is an evaluation method that uses distance as the data correlation. The diagram of algorithm $k-means$ is shown in Figure 5. The algorithm usually uses the standard method of zero sum of squares as the aggregation standard function, and the norm value of the squared sum-of-errors curve is defined as indicated in the formula.

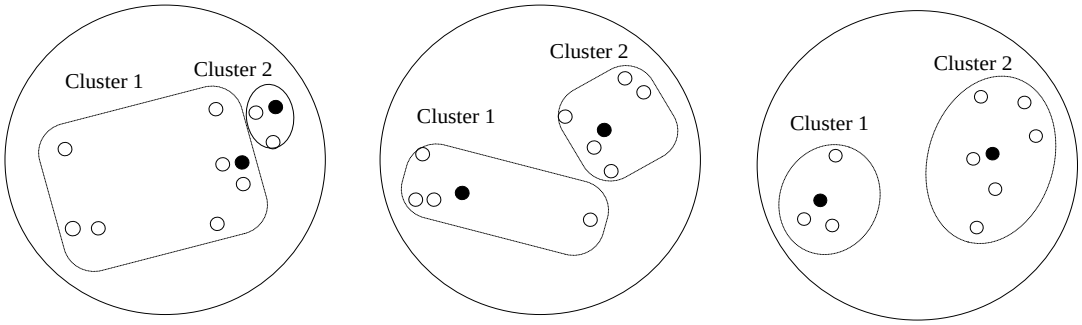

Figure 2. $k-means$ *Algorithm diagram*

$$J_c = \sum_{i=1}^{k} \sum_{p \in C_i} \left\| p - M_i \right\|^2 \quad (22)$$

Where:

M_i : represents the average value of fish items in class C_i ;

P : represents a space spots in class C_i .

The $k-means$ method is a hill climbing programm. When the algorithm terminates, it often finds a local minimum, as shown in Figure 6.

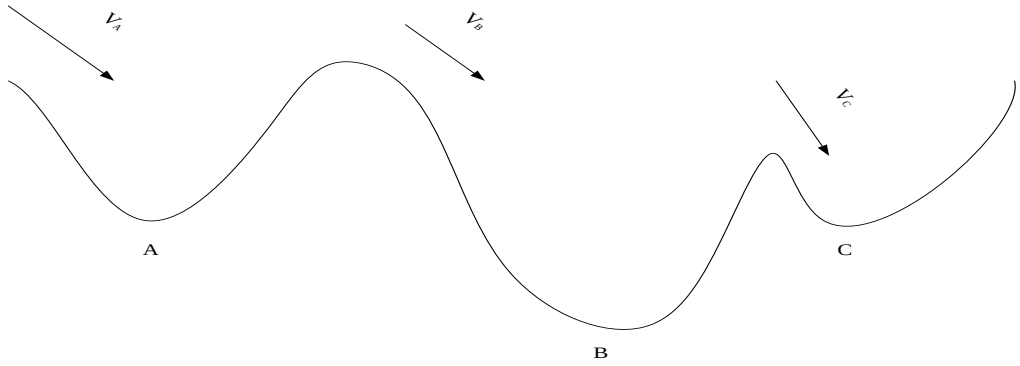

Figure 3. Local minima and global optimum

To further validate the $k-means$ method, the $SPSS$ software was used to cluster the data set, and the obtained outcomes were contrasted with the clustering findings of the algorithm.

First, enter 15 data objects, as listed in Table 2.

Then, the data objects are randomly selected as the initial cluster centers. The analysis was performed with $k-means$ on the $SPSS$ software, and the values received are presented in Table 3 and Table 4.

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Table 2 Data Objects

Data object	Variable 1	Variable 2
x_1	5	7
x_2	5	8
x_3	8	7
x_4	5	5
x_5	5	9
x_6	5.5	4
x_7	8	9
x_8	11	5
x_9	10	6
x_{10}	11	7
x_{11}	10	5
x_{12}	8.5	8
x_{13}	8	5
x_{14}	4.5	4
x_{15}	5.5	5

Table 3 Cluster centers obtained by $k-means$ *programm*

	Cluster			
	1	2	3	4
VAR00001	3.66	7.01	9.30	4.00
VAR00002	9.64	9.00	7.64	6.30
VAR00003	4.10	8.23	9.60	4.30

Table 4 $k-means$ *Clustering results*

Case Number	Cluster	Distance
1	1	0.870
2	2	0.390
3	3	1.009
4	3	0.609
5	2	1.267
6	2	0.655
7	4	1.009
8	1	0.802
9	3	0.668
10	2	1.357
11	1	0.801
12	3	0.386
13	4	0.136
14	2	0.620
15	3	0.422

Finally, through the analysis of the results, it is concluded that the clustering results obtained by algorithms $k-means$ and $SPSS$ are the same, which verifies that the algorithm has obvious clustering effect and superior performance.

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3. The main problems existing in the combination of asset management and budget management in colleges and universities

3.1 The objective of asset management is not clear

The goal of college asset management is to optimize the composition of college assets, improve the efficiency of asset and resource allocation, ensure the safety and integrity of asset resources, ensure the preservation and appreciation of college assets, and maximize asset benefits. Since the ownership of assets in colleges and universities is owned by the state, the construction and purchase funds of assets are mostly formed by financial funds. In the past, asset allocation mainly considered social benefits, and asset possession, use, and management basically did not consider cost factors, resulting in weak asset management goals and backward concepts[9]. This research has consulted similar sister institutions, and most of them only formulate medium and long-term career development plans, and generally do not formulate medium and long-term asset planning plans. Although the school's asset allocation is based on the requirements of "Three Important and One Big", decisions are made through collective discussions at the principal's office meeting and the party committee, but in many cases, the subjective judgment of the main leaders dominates, lacking professional arguments, and the asset allocation is not forward-looking. It will leave hidden dangers for the long-term use of future assets. In many cases, the allocation of assets is based on the amount of financial appropriation, just below the soup, especially the additional budget in the middle of the year, there is no medium and long-term asset allocation plan. The separation of ownership and use rights of assets in colleges and universities has objectively caused leaders at all levels to pay more attention to the increase of asset stock in asset management, and not pay enough attention to the use efficiency of assets, the economic and social benefits of the transformation of scientific and technological achievements. The asset information of colleges and universities is not yet fully open and transparent[10]. Due to information asymmetry, all departments put forward asset purchase plans based on the needs of their respective departments when preparing their budgets. This restricts their ability to control asset purchases, which results in disorderly and chaotic asset allocation. On the one hand, the school is in serious shortage of funds for running schools, and on the other hand, there is a huge waste of asset allocation, which has an impact on the sustainable development of the school.

3.2 Lack of a sound asset management system

Administrative institutions have a state-owned asset management model that "emphasizes increments, ignoring stocks, emphasizing funds, ignoring physical objects, and emphasizing purchases and ignoring management." The boundaries of ownership, management rights, and use rights of colleges and universities are still unclear, and the concept of asset management is relatively backward, and it basically remains in a state of focusing on investment and ignoring management. There is a lack of planning and forward-looking in asset purchase, and the utilization rate of existing equipment has not been fully demonstrated. Even the demonstration is conducted by the user department itself, and there is a lack of third-party scientific evaluation, which leads to the phenomenon that each department puts its own interests first. Every year, various departments compete for resources at the beginning of the year, and they manage their own affairs. However, the utilization rate of many equipments that they compete for is not high, and repeated purchases occur frequently, which does not provide assistance for the development of colleges and universities. Some departments lack forward-looking requirements for asset declaration, lack of preliminary demonstration, blind procurement, and even the phenomenon that the purchased equipment and software have been eliminated before they are put into use. According to the survey, the secondary college of Nanjing University of Finance and Economics purchased the professional simulation software requirement task book. After the purchased professional software arrived, it never accepted it, insisting that the software was out of date and could not be used. However, the software has been purchased in accordance with the prescribed procedures, and who should bear the responsibility, the waste of financial funds, and who should bear the responsibility, has not been effectively resolved. Some equipment is found to be lacking in relevant supporting facilities after purchase, and can't be used at all. After acceptance, it is stacked in the laboratory or warehouse, causing a huge waste of funds. At the same time, there are also many problems in the daily management of university assets, such as low management efficiency, lack of effective supervision in the use process, failure to implement responsibilities, and lack of performance appraisal and supervision in the procedures for facility and equipment procurement, accounting, repair, disposal, and scrapping, and asset management the mechanism is not perfect.

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3.3 Asset management creates information blockage

The asset management work of colleges and universities itself is highly policy-oriented and has high requirements. It involves various departments and colleges of the school, has a wide range of points, and is difficult to manage. Although colleges and universities have basically realized asset informatization management, the degree of informatization is far from enough. Since asset information cannot be shared in real time, computer operations are used instead of traditional manual records. Although the function of compiling some statistical reports required by the asset management department has been realized, which saves a certain amount of manpower and material resources, it has not played the due role of information management, far from exerting the function of big data intelligent financial system[11]. Judging from the current situation of asset management in colleges and universities, the asset management system, financial system, and budget system are in a state of incompatibility, and resources can't be interconnected, and information can't be connected in a timely manner. Budget is the "starting point" of all our economic activities. If the asset management system cannot be shared with budget management, it will inevitably result in a vacuum in the control of asset procurement. In practice, for each procurement task, such as the budget at the beginning of the year, actual implementation, quota control, etc., we must rely on manual statistics, which can neither guarantee the accuracy of the data nor provide comprehensive information such as procurement implementation in real time. The backwardness and inefficiency of statistical methods result in low timeliness and effectiveness of data utilization, and have little value for college management decision-making. In addition, in addition to budget control, the unit's monthly reconciliation of asset accounts and financial accounts, and the provision of depreciation of fixed assets also rely on manual statistics to complete. This is very far from the development of the current information age. In the financial work, the workload of checking accounts, checking accounts, and checking accounts is very large, and the speed of information communication is slow, resulting in low management efficiency and unable to meet the needs of college work in time, which affects the optimal allocation of resources.

3.4 There are many blind spots in intangible asset management

Intangible assets are assets owned by colleges and universities, which have no physical form and can bring economic benefits to colleges and universities. Intangible assets occupy a large proportion in the assets of colleges and universities, and are the embodiment of the soft power and core competitiveness of a college. At present, the recognition, measurement and accounting of intangible assets, the relevant regulations are still unclear, and there are still many blind spots. This is the case in many colleges and universities surveyed. All kinds of publicity works, audio and video materials shot by the school, and digital resources such as online course videos shot by professional course teachers are all directly expensed and not included in intangible asset management. The digital resources purchased by the library conform to the definition of assets in terms of unit value and use time. Because of the remote controlled access mode, the school only has the right to access and browse, but has no ownership. Schools cannot grasp the quality of such digital resources, and cannot accrue depreciation and asset impairment losses according to their usage. As intangible assets, they only account for their purchase costs. At present, there is no clear system regulation to monitor the operation, maintenance and use of digital assets. In addition, the recognition, measurement and accounting of human resources intangible assets in colleges and universities are still blind areas. For example, all kinds of experts, scholars and outstanding alumni owned by colleges and universities have a high reputation and social influence in the society, which will bring various benefits to the school resources and interests. There are also school regulations, school motto, school song, campus culture and various management systems, good study style, school spirit, cultural atmosphere, and school reputation established by outstanding graduates trained over the years. These intangible assets have no system regulations, and such intangible assets should quantification is incorporated into budget management for accounting. In addition, the intangible assets formed by the use of school scientific research funds and conditions lack institutional management. Individuals sell them directly or in disguise to enterprises, and convert the proceeds to personal ownership, resulting in the loss of state-owned assets. Due to the lack of relevant systems, there is no way to pursue recovery and accountability. In addition to economic losses, it may also cause reputational damage to the school and affect the school's image.

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3.5 Lack of an effective asset evaluation system

In actual financial work, performance evaluation is basically a mere formality in addition to assessing the implementation of the budget. When doing performance evaluation of financial projects, many departments have absolutely no understanding of performance evaluation indicators, do not know how to fill in the report, not to mention the understanding, mastery and specific application of evaluation indicators. The asset evaluation system of colleges and universities is a complex systematic project. If there is no evaluation mechanism, the phenomenon of asset replacement and waste in colleges and universities will inevitably exist. To be held accountable in accordance with the law and conduct performance appraisals, can we avoid the chaos of competing for resources and assets, only asking about input but not output. At this stage, the main reason for the lack of implementation of asset evaluation is that the evaluation index setting is unscientific, which is out of touch with practice to a certain extent, and the evaluation results are not used in practice, resulting in a certain degree of falsehood in the current evaluation system.

4. The scheme of organic integration of asset management and budget management in colleges and universities

4.1 Scientifically formulate medium and long-term asset planning

At this stage, the medium and long-term asset planning goals of many colleges and universities are not very clear, which leads to unreasonable resource allocation and lack of predictability in asset allocation. In order to better adapt to the new economic situation and meet the objective needs of financial macro-control, governments and units at all levels can adopt the method of balancing the budget across the year, which can effectively solve the problem of asset budget allocation, improve the efficiency of the use of financial funds, and is conducive to the development of colleges and universities continuous development. The construction and management of college assets often spans multiple fiscal years[12]. The newly revised "Budget Law" provides a legal basis for the full life cycle management of asset management. Colleges and universities can also fully consider the special needs of asset construction in budgetary arrangements for asset budget management plans are implemented. At the same time, make full use of the asset management platform to create an asset management and control model that covers the whole process of "planning", "budget", "input", "process" and "output". In the future development plan, scientifically establish asset performance evaluation indicators, reasonably allocate, supervise and evaluate assets, and truly realize that college assets serve the high-quality development of education.

4.2 Raise awareness of asset budget management

Due to the absence of asset owners in colleges and universities, there are problems such as weak sense of ownership in asset management, lack of sense of responsibility, and each department acting independently, resulting in low asset management efficiency. Various departments will compete for resources and policies, but the specific awareness of asset management is very weak. To improve the awareness of asset budget management, we must first start from the leadership of the unit. Only when leaders pay attention, take command personally, top-down, consolidate responsibilities, and implement them to households, can problems be solved. A special asset management committee can be established to formulate rules and regulations and specific measures for various asset management, and truly achieve "rules to follow and evidence to follow", in order to effectively enhance the awareness of asset management. At the same time, it is necessary to increase publicity efforts, follow the procedures according to regulations, establish the concept and awareness of "money goes with everything, no budget is not implemented", and strengthen the process of budget implementation. Improve the awareness of each department's active participation in budget management, everyone is responsible, avoid doing things independently, communicate more with schools and other departments, prepare the budget scientifically and reasonably, and avoid various problems in the later budget implementation. Finally, clarify the rights and responsibilities of asset management, standardize the process, achieve hierarchical management, assign responsibilities to people, implement incentive mechanisms, and comprehensively improve the quality of asset budget management.

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4.3 Realize the technical integration of asset management and budget management

With the help of the development of new technology, vigorously strengthen the construction of asset management informatization, open up the OA office system of the asset department, the financial department and the school, continue to improve the informatization and intelligent construction, let technology empower finance, and carry out "AI + finance" The practical exploration to realize the true "smart campus". At present, asset management software is still in a state of separation from financial management and budget management software. It is necessary to break barriers in terms of technology and subjective awareness, realize the information interconnection of asset management and control platforms, increase intelligent construction, and make full use of Dazhiyi cloud technology. Eliminate information barriers and increase the financial scenarios of Internet technology. At the same time, actively embrace new technologies, actively promote financial transformation, sort out financial business processes, strengthen internal control, enhance communication between budget departments, asset departments and various functional departments, establish a guarantee mechanism to achieve full coverage management of unit assets, and achieve technical integration development. Smart finance can also make colleges and universities attach importance to the value of data assets, better meet the needs of financial compliance review, increase business integration and improve management efficiency.

4.4 Strengthen the management of intangible assets

Understanding the concept of intangible assets and grasping the confirmation conditions are the key factors to strengthen the management of intangible assets. There are still many problems in the management of intangible assets in colleges and universities, such as difficulties in measurement and information distortion, and insufficient evaluation of intangible assets. For example, identifiable intangible assets, management systems for intangible assets such as patent rights, copyrights, and publishing rights, as well as unidentifiable intangible assets such as university reputation, campus culture, human resources, etc. similar to goodwill, how to confirm, measure, account, etc. Relevant regulations are required. It is difficult to define the intangible assets of colleges and universities in the process of use, and it is difficult to determine the benefit of use, and there is great uncertainty. Only when the scope of recognition, quantification methods, and accounting basis for intangible assets are clearly specified in the system, and the system construction is accelerated, the asset management department and each user department can "have laws and regulations to follow." In the management of financial assets in colleges and universities, the supervision of reasonable acquisition, use and disposal of intangible assets should be strengthened, and the budget of intangible assets should be incorporated into the overall budget management of the school, so as to highlight its value realization process and make it play a better role in promoting the development of colleges and universities to big effect.

4.5 Combining asset management and budget performance evaluation

In the asset management of colleges and universities, a large number of performance evaluation methods should be used to realize the combination of asset management and budget management. The performance evaluation of assets should be closely linked with the performance evaluation of the budget, the medium and long-term business planning of the unit and the medium and long-term asset planning, and should not be disconnected from each other. It should set up practical asset management goals, set up scientific and reasonable performance evaluation index system and model, and use appropriate statistical analysis methods to conduct multi-dimensional comprehensive evaluation to obtain objective results. The evaluation results should be effectively used in performance evaluation, directly linked with the asset budget indicators of the asset use department in the following year, establish a linkage mechanism, and strengthen follow-up tracking management. If the performance evaluation results are not good, in addition to deducting the asset budget indicators, it is necessary to report criticism and deduct the adjustment allowance of its department. In addition, it is necessary to link with the salary performance of managers and responsible persons, formulate corresponding reward and punishment measures, and directly connect with economic interests, establish an economic responsibility system for colleges and universities, and promote the healthy development of the organization, so as to realize medium and long-term asset management planning, budget investment, and budget execution, performance evaluation to the application of results, forming a complete closed loop of asset management.

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5. Conclusion

The development of asset management in colleges and universities has the most direct and close relationship with the expansion of the scale of colleges and universities, the improvement of infrastructure construction, and the construction of disciplines, and its importance cannot be ignored. Therefore, asset management personnel in colleges and universities should, on the basis of fully and reasonably analyzing the deficiencies in asset management in colleges and universities, associate asset management work with budget management. It should be integrated to effectively avoid the repeated occurrence of problems such as idle assets, unreasonable asset allocation, and asset loss, and then provide corresponding assistance for the further improvement and development of the operation and management of colleges and universities.

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