

# Research on University Logistics Budget Under the Influence of Multi-Factors

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**Abstract:** Budgeting plays an indispensable role in the normal operation of university logistics. It involves catering, accommodation, building renovation, water and electricity maintenance and many other aspects, which provides a solid guarantee for teaching, scientific research and teachers' and students' lives in colleges and universities. However, there are many problems in the traditional university logistics budget preparation method. They are often based on historical data and experience and lack comprehensive consideration of various influencing factors. In practice, the preparation of university logistics budget is influenced by internal factors such as school scale, logistics service items and standards, management system and operation mode, as well as external factors such as market environment and policies and regulations. This paper discusses the influence of these factors on the establishment of logistics budget in colleges and universities, and analyzes the influence on the establishment of budget. In the process of discussion and analysis, according to the budget preparation method and logistics management practice, the objectives and principles of budget preparation are gradually clarified. This study is helpful to improve the accuracy of university logistics budget, optimize the allocation of resources, and then provide scientific basis for university logistics management decision-making, which is of great significance to promoting the modernization process of university logistics management.

**Keywords:** University Logistics; Budget - making; Multiple Factors

## 1. Introduction

College logistics is an important part of the overall operation system of colleges and universities. It is like many gears in precision

instruments. Although seemingly inconspicuous, it quietly promotes the smooth progress of various activities in colleges and universities. From comfortable accommodation environment to nutritious catering service, from the daily maintenance of campus facilities to the cleaning of environmental sanitation, every link of university logistics is closely related to the study and life of teachers and students. However, the formulation of budget has always been a key and challenging link in the logistics management of colleges and universities. The limitations of traditional budget methods in university logistics are gradually exposed. In the past, budgeting mostly relied on past budget data and managers' experience judgment. This method is powerless in the face of today's complex and changeable environment. The continuous expansion of the scale of colleges and universities, the increasing diversification of logistics services, the gradual improvement of service levels, the changes in college students' environment and the adjustment of policies and regulations have all had a profound impact on the preparation of university logistics. However, it is difficult for traditional budgeting methods to comprehensively and accurately consider these multiple factors, which easily leads to the disconnection between budget and actual demand, resulting in budget waste or insufficient budget. On this basis, the purpose of this study is to deeply analyze the influence of multiple factors on university logistics budget making, improve the accuracy of budget making, optimize resource allocation, and provide a strong scientific basis for university logistics management decision-making. Thereby improving the overall level and efficiency of logistics management in colleges and universities.

## 2. Analysis of Multiple Influencing Factors in University Logistics Budget Making

First, the development strategy and planning of colleges and universities have a fundamental

guiding role in the preparation of logistics budget. If a college is in the expansion period, it plans to build a new campus or add a large number of disciplines and majors, which will inevitably lead to an increase in the number of students and faculty. The logistics department needs to consider the budget investment of dormitory construction, canteen expansion and matching campus facilities. For example, the construction of the new campus may require a lot of money for the new logistics infrastructure, such as water and electricity supply system, garbage disposal facilities, etc., which are important parts of the college's strategy that need to be considered in the overall development of logistics budget. At the same time, if the college has special plans to improve the quality of education, such as creating an international educational environment, the logistics department may need to make budget arrangements for the improvement of dormitory facilities for international students and the introduction of international catering services. Secondly, the needs and expectations of teachers and students are the key factors that affect the preparation of logistics budget. With the improvement of living standards, teachers and students have higher and higher requirements for the quality of logistics services. In terms of accommodation, students may expect better living conditions in dormitories, such as private bathrooms and air-conditioning equipment, which requires the logistics department to consider purchasing and installing them.

These equipments are included in the dormitory decoration budget. In catering, teachers and students hope to have more diversified, healthy and safe catering options. The logistics department needs to increase the investment in the procurement budget of food ingredients to ensure the variety of dishes, and may also need to invest in the upgrading of catering facilities, such as building more modern kitchen equipment to meet the production needs of different dishes. In addition, the beautification and maintenance of campus environment is also the focus of teachers and students, which involves budget items such as greening maintenance and campus cleaning equipment renewal, and the price change also directly affects the budget preparation of university logistics. The logistics department involves a large number of materials procurement, such as

food ingredients, office supplies, maintenance materials, etc. Rising prices will lead to an increase in procurement costs. If the budget is not adjusted accordingly, the quality of service will be affected. Taking food ingredients as an example, the prices of grains, vegetables and meat fluctuate frequently. When the price rises sharply, the operating cost of the canteen will increase greatly. If the budget is not increased, the canteen may face the dilemma of reducing the number of dishes or the quality of ingredients. Changes in the price of maintenance materials will also affect the budget for the maintenance of campus facilities. For example, the rising price of building materials will make the cost of building maintenance and road maintenance exceed expectations, so we should fully consider the price factor and reserve a certain amount of flexible space when compiling the budget. The policies and management requirements of colleges and universities also play an important role in the preparation of logistics budget. Colleges and universities may introduce some policies such as energy saving, emission reduction and environmental protection, and the logistics department needs to make budget arrangements according to these policy requirements. For example, in order to achieve the goal of energy conservation and emission reduction, the logistics department may need to invest in energy-saving transformation of hydropower equipment, such as replacing energy-saving lamps and smart hydropower meters, and this part of the budget should be included in the total budget. At the same time, the standardized requirements of logistics management in colleges and universities will also affect budget preparation. For example, if the college requires the logistics department to improve the level of information management, it needs to arrange funds in the budget for purchasing related management software, equipment and personnel training.

### **3. The Theoretical Basis of University Logistics Budgeting Under the Influence of Multiple Factors**

The establishment of university logistics budget is influenced by many factors, and its theoretical basis includes several aspects. First of all, the development strategy and planning of the college is the fundamental orientation. It defines the long-term development goal and

direction of the college, and the formulation of logistics budget must be adapted to it to ensure the resource supply and service support in the overall development of the college. Secondly, the needs and expectations of teachers and students are the key factors. As the main service object of university logistics, the characteristics of its demand and expectation level, such as accommodation, catering and campus facilities, directly determine the proportion of resources allocated to each service item in the logistics budget. It is necessary to fully consider the uncertainty of price factors when compiling the budget and establish corresponding coping mechanisms. The policy and management requirements of the college are also of great significance. For example, the financial system, logistics management norms and other policy requirements stipulate the framework and principles of budget preparation, ensuring the compliance and rationality of budget preparation. In addition, market competition and outsourcing services can not be ignored. Market competition affects the quality and cost standard of logistics services, and factors such as the scope, quality and price of outsourced services also need to be comprehensively considered when budgeting. By combining these factors, we can construct a scientific and reasonable logistics budget preparation method that meets the actual needs of the school.

#### **4. The College's Development Strategy and Planning is the Core Orientation of College Logistics Budget Preparation**

Colleges and universities have different strategic goals at different stages of development. For example, in the stage of scale expansion, we may pay more attention to the logistics support related to infrastructure construction, while in the stage of connotation development, we will focus on improving service quality. The formulation of logistics budget must closely focus on these strategic objectives and rationally allocate resources. For example, if a college plans to build a new campus, the logistics budget should consider the investment in catering facilities and dormitory facilities in the new campus; If you are committed to improving the level of scientific research, you may need to increase the budget share of laboratory logistics support. The needs and expectations of teachers and

students play a vital role in the model construction. Teachers and students are the direct recipients of logistics services, and their needs are diverse and dynamic. From the basic needs of life, in terms of accommodation, students hope that the dormitory environment is safe and comfortable, which may involve budget items such as dormitory maintenance and equipment renewal; In catering, teachers and students hope to have healthy and diverse dietary choices, which requires the logistics department to make adequate budget arrangements for food ingredient procurement and catering facilities upgrade. At the same time, with the development of the times, teachers and students have higher and higher requirements for the aesthetic feeling of campus environment and intelligent facilities. For example, the budget of campus greening maintenance and the installation of intelligent access control system also need to be considered. Price changes have a significant impact on the formulation of the budget. Logistics service involves a lot of material procurement. For example, the price of food ingredients fluctuates greatly in different seasons and market environments. If this factor is not taken into account when preparing the budget, the quality of catering service may be unstable. The purchase price of equipment also changes due to the relationship between market supply and demand and technological update, and the labor cost also changes with the change of regional economic development level and the relationship between supply and demand in the labor market. Therefore, when budgeting, it is necessary to make a reasonable estimate of price changes and establish a fault-tolerant mechanism to deal with uncertainty. The policy requirements and management requirements of colleges and universities provide a framework and standard for the preparation of logistics budget in colleges and universities. In order to ensure that the use of funds is legal and compliant, the procedures and system requirements for budgeting and using norms have been formulated. The management specification defines the standards and objectives of various services. For example, the per capita accommodation area standard and facilities standard stipulated in the dormitory management regulations directly affect the allocation of funds for dormitory construction and maintenance in the budget. Market

competition and outsourcing services are also important factors that need to be considered when constructing logistics budgeting model. Market competition promotes the continuous improvement of logistics service quality and efficiency. When making a budget, we need to consider how to invest money to enhance our competitiveness. For example, in order to attract more students to choose on-campus catering services, funds can be arranged in the budget to improve the catering environment and food innovation. Outsourcing service is becoming more and more common in university logistics. When preparing the budget, we should comprehensively consider the scope, quality requirements and price level of outsourced services. If the campus cleaning service is outsourced, it is necessary to make clear the outsourcing cost in the budget and supervise the service quality of the outsourcer. Considering the above factors comprehensively, the logistics budget of colleges and universities needs to make a comprehensive and systematic analysis of the relationship between the factors. By establishing a scientific and reasonable model, the accuracy and effectiveness of logistics budget can be improved, thus providing solid logistics support for the stable development of colleges and universities.

### 5.Outlook for the Future

Looking forward to the future, there is still a lot of work to be further improved. In budgeting,

more complicated nonlinear factors can be considered and more advanced algorithms, such as neural network algorithm, can be adopted to improve the fitting ability of the model to complex reality. At the same time, we can further expand the research scope, conduct in-depth comprehensive research on university logistics, university strategic planning, social and economic environment, etc., provide more comprehensive and accurate guidance for university logistics budget preparation, and promote the development of university logistics management in a more scientific and efficient direction.

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