Functional layout of new mode express service center in college campus

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Abstract. As a gathering place for young people, online shopping is very popular and there is a great demand for express delivery. Campus express has become a problem faced by many university logistics departments. It leads to the contradiction between campus security management and express delivery. Based on the investigation of the basic situation of colleges and universities, the paper positions the express service center of colleges and universities. The function of the new mode express service center for college campus includes the mailing area, the pickup area, the free express delivery package area, the student entrance buffer area and the express delivery area.

1. Introduction
With the development of e-commerce, the campus has become an explosive place for online shopping. The problem of campus express delivery is becoming more and more obvious. In order to solve the "last mile" problem of the campus, it is an inevitable trend to establish a unified campus express service center according to the status quo of campus express delivery agents\cite{1}. Campus express service center can better provide campus express service for college teachers and students and the service can create value at the same time\cite{2}. Taking the campus teachers and students as the service object, the campus express service center integrates multiple express agencies in the campus, makes full use of the express resources in the campus, carries out unified and professional express management, and provides efficient, convenient and intelligent express services for the teachers and students of colleges and universities. Under the background of continuous improvement and development of network technology and e-commerce, college students have become the main force of online shopping. Therefore, the express delivery business generated by online shopping has considerable development space, but the existing express delivery mode of serving the campus has many drawbacks.

2. Positioning of campus express service center
2.1. Establish a new model of campus express service center
According to the distribution of university buildings, dormitory buildings, convenience stores, hospitals and canteens are all built in one area to facilitate students' various needs in daily life. The campus express service center sits in the civil air defense basement near the dormitory building, with the help of geographical advantages\cite{3}. The campus express service center is managed and unified by the relevant departments of the university. Campus express will include yto, sf, jd and other express into the campus express service center. In order to establish a new model of campus express service
The campus express service center will cooperate with the express company. The campus express service center signs a contract with the express company, collects a portion of the service fee and hires professionals as the managers of the center. The logistics department of the university supervises the operation of the campus express service center. The scientific operation of the campus express service center eliminates the occurrence of courier damage and disorder.

2.2. Campus express service center as a practice base
With the rapid development of e-commerce, express delivery has also grown rapidly. In order to meet the needs of the society, many universities offer logistics majors[4]. However, many university logistics practice bases need to continue construction. Students in logistics management and logistics engineering can come to the campus express service center for internships. At the same time, the teacher regularly trains the staff of the campus express service center to enhance the professional skills of the staff. Therefore, the staff can provide high-quality courier services for teachers and students.

3. Analysis of the function of campus express service center
The integration of multiple courier agents also requires the integration of various types of courier packages to facilitate the delivery and retrieval. The parcels of each courier company are integrated in the campus courier service center. The service center assigns appropriate areas for various types of packages. The parcels to be mailed are placed in the mailing area and the parcels received by the teachers and students are placed in the pickup area[5]. The function of the new mode express service center for college campus includes the mailing area, the pickup area, the free express delivery package area, the student entrance buffer area and the express delivery area[6][7]. The layout of each functional area is shown in figure 1.

3.1. Analysis of the student entrance buffer area
This area is located at the forefront of the campus courier service center and can reduce the pressure on a large number of people in the pickup area, the mailing area and the free express delivery package area. The person who subsequently enter the service center can wait in this area when there are a lot of people in the mailing area, in the pickup area and in the free express delivery package area.

3.2. Analysis of the mailing area
Campus express delivery service is available in the area. All types of shipping couriers on campus are gathered in the area. It eliminates the worry of the consumer who chooses which courier agent to send the mail, facilitates the quick delivery of the goods and also eliminates the waste of resources in the state of multiple courier agents. The mailing area includes an information processing area, a counter service area and a courier temporary storage area. The parcel is placed in the courier temporary storage area.
area by the service personnel and waits for the loading and delivery. The effect of the mailing area is shown in figure 2.

![Figure 2: The diagram of effect of mailing area](image)

3.3. Analysis of the free express delivery package area

This area is mainly provided for the delivery of parcels, convenience stores for you, the restaurant food for you.

The free courier picks up the parcel in the pickup area and delivers the parcel to you. If the delivery fails, the free courier puts the parcel back on the parcel shelf. The package waits for the next delivery or the consumer comes over to get the package. The free courier can go to the convenience store or the restaurant to purchase the goods needed for the order and then deliver it to the student. The effect of the free express delivery package area is shown in figure 3.

![Figure 3: The diagram of effect of the free express delivery package area](image)

3.4. Analysis of the pickup area

The pickup area is mainly composed of a shelf area, a pickup entry area, a self-service signing exit area, and a manual signing exit area. The pickup area is adjacent to the express delivery area. The parcels transported to the campus express service center are unpacked and scanned in the express delivery area, and then the staff puts the parcels through the work door into the shelf area. The pickup area and the parcel free express delivery package area are also adjacent. It is more convenient for free
courier to enter the pickup area to find the parcel for the delivery. The drawing of the pickup area is shown in figure 4.

Figure 4  The diagram of effect of pickup area

In the pickup area, there are two ways to take the package: self-service pickup and express delivery. If you are picking up your own package, please enter the pickup area through the entrance and look for the package on the shelf. Then please sign the receipt at the exit of the pickup area to complete the pickup. If you use the staff pickup method, please tell the staff pickup the pickup code. Then the staff find the package on the shelf and hand it to you. When the number of pickups is too large, two methods can also be used to pick up the goods at the same time, in order to shorten the pickup time.

3.5. Analysis of the express delivery area

The express delivery area includes the scattered area, the sending concentrated area, and the office area. In the scattered area, the staff receives the courier entering the campus, and then places the courier according to the number on the shelf of the pickup area[8]. College students will come and take their packages. In the sending concentrated area, the pending parcels in the mailing area are classified, loaded and sent to the destination. The campus express service center staff handles daily affairs in the office area. The details of the express delivery area are shown in Figure 5.

Figure 5  The detail diagram of express delivery area

4. Conclusion

The establishment of the new mode campus express service center is in full compliance with the spirit of entrepreneurial innovation advocated by the State Council. However, its development also has certain limitations. In the service center management system and employee selection and other aspects, it is necessary to continuously explore and improve. Through research, I expect to have a better campus express service.

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