

A Case Study on Resource Optimization and Business Continuity in Higher Education Campus Expansion

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Abstract: During the process of expanding the campus, higher education institutions face challenges such as the distribution of resources, financial stability, and continuous operations. This research investigates the business continuity strategies in a university expansion in China through a qualitative case study using semi-structured interviews with university administrators, teachers, and students. The results show that there is still significant room for improvement in financial limitations, administrative efficiencies, and alignment between the planning and the needs of the stakeholders, which affect the use of resources. Furthermore, faculty experience a heavier workload, while the students report the inconsistent availability of academic resources. To enhance continuity, the study recommends the application of digital resource monitoring, participatory governance, diversified funding channels, and workload reallocation for sustainable operation.

Keywords: Business continuity; Higher education expansion; Resource management; Operational efficiency

Online publication: July 16, 2026

1. Introduction

Higher education institutions are important in promoting knowledge production, ability improvement, and innovation. Nevertheless, with the increase of these institutions, they usually encounter problems such as resource allocation, infrastructure improvement, and maintenance. Therefore, an appropriate change should be made, because the expansion projects should not only construct physically but should also offer some managerial strategies to ensure that the new facilities are fully utilized in operation, the financial resources are not wasted, and the academic work proceeds smoothly.

Due to the increase in the number of students and changes in academic requirements, some university expansion projects have been carried out recently. However, the expansion process may encounter difficulties such as unutilized resources, debt, and logistical inefficiencies. This research investigates a case of a higher education institution in China that has undergone a large expansion, changing from an almost unused site

to a complete working campus. The main purpose is to study the resource management methods in higher education that affect the continuity of the business. In this context, business continuity refers to the capability of an institution to continue teaching, research, and administrative work despite operational problems such as construction delays, financial limitations, and improper use of facilities. If proper planning for growth is not considered, it may lead to unutilized facilities, increased operational expenses, and interruptions in the service delivery of academics, thus weakening the university's ability to accomplish its academic objectives.

Using action research to find the difficulties in the expansion of the campus and to discover important methods to enhance the use of resources, increase management efficiency, and guarantee the long-term financial stability of the university operations. This study will be beneficial for the higher education administration, strategic resource arrangement, and institutional resistance by communicating with the participants, examining the institutional procedures, and presenting evidence-based suggestions. The results will offer the university managers and decision-makers practical information on how to handle the campus development and expansion projects.

2. Research and methods

2.1. Literature review

Business continuity was originally regarded in the fields of risk management and corporate disaster recovery ^[1]. However, in recent years, this concept has been more widely used in higher education institutions, where preserving the normal operation under the conditions of expansion, financial limitations, and resource redistribution is an important issue ^[2]. According to a detailed literature survey, a new framework for higher education business continuity has been proposed to go beyond short-term crisis handling and to consider strategic governance, infrastructure improvement, and financial stability ^[3].

During the expansion of universities to cope with the increasing number of students and to vary the academic subjects, they usually face several logistical and managerial difficulties that affect their efficiency ^[4]. The expansion of universities has led some people to point out the disadvantages caused by the unused buildings, the improper use of financial resources, and the interruptions in the construction projects, all of which have a negative influence on the teaching, research, and administrative work in the institutions ^[5]. In order to allow the university to carry on its normal work when there are no more available resources for further development, it is necessary to allocate the resources carefully; the proper management of the buildings developed is essential to obtain the desired results ^[6].

In regard to the campus expansion, it is suggested to develop an unsiloed planning method which includes financial forecasting, infrastructure scalability, and stakeholder participation ^[7]. The successful implementation of the organized resource management schemes can overcome the problems such as high operating costs, inadequate utilization of space, and students' dissatisfaction ^[8]. Furthermore, the research on education resource planning highlights the requirement for higher education institutions to possess management systems able to adjust their processes in order to provide better services, under financial constraints and limited facilities ^[9].

Many action researches conducted in the higher education field have demonstrated that the involvement of stakeholders and iterative problem solving could greatly enhance the efficiency of campus expansion ^[10]. The institutional leaders can cooperate with university administrators, faculty, and students as well as other stakeholders in order to find out the problems and put forward feasible solutions at an early stage, which are consistent with the continuity of business and operational sustainability ^[11].

Based on these results, our research uses an action research approach to show that imminent resource management techniques can support business continuity during the expansion of the campus. The study aims

to make a contribution to the debate on the sustainable development of universities by combining the previous theories about business continuity, higher education administration, and infrastructure planning.

2.2. Research design and methodology

2.2.1. Qualitative case study approach

A qualitative case study was employed to investigate the resource optimization and business continuity during the expansion of a higher education campus in China. This approach is suitable for analyzing complex organizational challenges in their real environment, and enables researchers to gain a thorough knowledge of the participants' views and perceptions from various viewpoints of the stakeholders.

The investigation was centered on a university which was carrying out an expansion project. Information was obtained from the university administrators, teachers and students by means of semi-structured interviews to investigate their views on the distribution of resources, operational difficulties and business continuity. Then the qualitative data were analyzed by using thematic analysis. Furthermore, data triangulation across the three stakeholder groups was used to improve the reliability and validity of our results.

2.2.2. Research participants

This study employs purposive sampling to obtain diverse viewpoints in areas such as resource distribution, infrastructure administration, and operation continuity. A small number of research subjects will be chosen, including University Administrators, namely deans, directors, and financial officers, who act as decision-makers and strategists; Faculty Members who participate in academic operations and infrastructure use; and students who are on the front lines of campus development and resource distribution.

To acquire a comprehensive knowledge of the problems, potential remedies, and the necessity to improve resource allocation and maintain normal business operations, this research takes into consideration various viewpoints of stakeholders.

2.2.3. Data collection methods

To get sufficient data, this study employs a qualitative method of data collection, such as semi-structured interviews (**Appendix**), as the main way to collect information. Interviews will be conducted with the university administrators, teachers, and students to acquire different views about the allocation of resources, operational problems, and the importance of expansion plans. The interviews will last from 10 to 30 minutes and will be recorded with permission to ensure accurate data collection and analysis. Thus, this method, focusing on important points, provides flexibility to investigate other questions raised by the respondents.

2.2.4. Data analysis

Thematic analysis is used to analyze data from the interviews. The process involves three key steps: first, qualitative data transcription and coding for thematic analysis; second, detecting patterns in effective resource allocation through stakeholder comparison; third, combining results from different sources to enhance the validity of research by conducting interviews with students, teachers, and administrators to investigate their perceptions of resource management.

The results will be arranged thematically, concerning the effectiveness of infrastructure, financial planning, maintenance of academic services, and governance problems.

2.2.5. Ethical considerations

This investigation is carried out according to the ethical principles of human subject research. Prior to the collection of data, informed consent is obtained from each participant, so they are aware of the research and their participation. It is ensured that their identities and confidential information will be anonymized when the data is published. Moreover, the participation in the study is voluntary and the participants can quit at any time with no unfavorable results.

3. Findings and analysis

3.1. Resource allocation and utilization

3.1.1. Facility utilization

There is a difference in the perception of the utilization of the new campus facilities. Many facilities such as the library and lecture halls are working at their maximum capacity, as stated by some administrators. However, some laboratories are not fully used due to the unavailability of some equipment, which has not been purchased yet. The limited laboratory resources have influenced the course arrangements and caused difficulties in scheduling, the faculty members mentioned. The students considered the better learning conditions, but thought that the library and other places were not sufficient, which reduced their satisfaction.

Triangulation analysis:

Both administrators and students mentioned the enhancements in the infrastructure, while the faculty members indicated a shortage of resources, showing the differences between institutional planning and actual academic requirements.

Though students pointed out that the study spaces were generally insufficient, the administrators believed that the resources had been utilized to the maximum, showing different opinions on the adequacy of the resources.

3.1.2. Resource shortages

Moreover, the space has contributed to the enlargement, but the difficulty of obtaining resources remains serious. The teachers emphasized that the lack of enough experimental instruments has reduced the quality of practical classes and delayed the progress of our work. The students stated that the inadequate information technology devices and shortage of appropriate digital materials, including a bad network and limited access to academic libraries, had influenced their ability to finish the tasks. The management recognized the limited financial means that were spent on purchasing equipment, and they would rearrange the funds to spend more money.

Triangulation analysis:

Administrators recognized the financial constraints; the staff and students directly experienced the consequences of the limited resources, thus confirming the significance of the issue. Administrators did not mainly discuss the problems of IT infrastructure; on the contrary, the students mentioned them, indicating that the allocation of electronic resources requires more attention from the institution.

3.2. Business continuity challenges: Financial constraints and operational challenges

Budget restrictions in building infrastructure and the delay in obtaining equipment have resulted in an adjustment of the budgets being used mainly for maintaining the normal operation, stated the administrators. The faculty also mentioned that some teachers had to give classes at two different campuses, thus increasing their workload and making them spend more on commuting due to the late subsidies. The students expressed

that insufficient funds prevented them from having access to the academic resources such as the library database and online course materials, which affected their academic results.

Triangulation analysis:

From the confirmation of their impact, every respondent pointed out the financial difficulties as the main hindrance affecting various aspects such as facilities, subsidies, and digital resources. Though both administrators and teachers mainly considered the maintenance of operations, the teachers emphasized the problem of heavy workload, whereas the administrators regarded the budgetary problems as the most serious obstacle. This shows different opinions about the significant difficulties.

3.3. Strategies for optimization and improvement: Facility and resource optimization

Administrators proposed establishing a real-time monitoring system to monitor the utilization of facilities and allocate resources efficiently. The faculty members suggested that the faculty should play a more active part in deciding the distribution of resources, so that the administrative planning is consistent with the academic requirements. It may be mentioned that the students have knowledge about obtaining more electronic books and academic databases, etc., in order to compensate for the shortage of physical resources.

Triangulation analysis:

All the respondents emphasized the significance of resource distribution, with their emphasis differing: administration–monitoring systems; faculty–participation in decision-making; students–digital resources.

Faculty agree with this method, pointing out that digital resources are essential for teaching and learning and ought to be given greater emphasis.

3.4. Summary of findings

Resource management: Although the enlarged campus has enhanced the facilities, the academic activities have been affected because of the delay in the equipment acquisition and the insufficient IT resources.

Bottlenecks in business continuity: Financial limitations have been the main obstacle, resulting in delays of resource supply and affecting the subsidy for faculty commutes.

Suggestions for enhancement: All the respondents suggested enhancing resource monitoring, increasing faculty participation in decisions, and broadening the availability of digital learning.

4. Conclusion and recommendations

4.1. Conclusion

This study examined the difficulties and solutions in business continuity planning during the expansion of a large higher education campus. Action research was applied to identify the major issues regarding resource allocation, financial constraints, and operational continuity. One of the main conclusions is that the physical expansion alone cannot guarantee effective operation, since financial and administrative obstacles frequently interfere with the smooth merging of the campus. Sum and Saad emphasized the importance of risk management and coordination of resources for promoting the long-term development of the institution ^[12].

In addition, the study showed a difference between the distribution of administrative resources and the faculty/students' experience. As stated by Nwachukwu and Ohalet, trustworthy industries should involve stakeholders such as faculty and students in order to make efficient use of resources through proper institutional management ^[13].

The financial problem of the university still exists; the restricted funding affects the faculty work, the facility improvement, and the student services. Kamkankaew suggested that universities should seek new sources of funding, for example, joint ventures with the private sector, to ensure their stability in the future ^[14].

An investment in integrated strategic planning, stakeholder cooperation, and alternative funding methods for maintaining long-term operations is essential for effective business continuity planning in higher education.

4.2. Recommendations

According to the research findings, the following recommendations are proposed to improve the business continuity and resource management in higher education institutions undergoing expansion.

One crucial method is to introduce a Real-Time Resource Monitoring System, which can monitor the usage of classrooms, laboratories, and libraries in real time, thus enabling the university to improve the efficiency of utilizing its facilities.

In addition, a complementary step is to engage more stakeholders in the decision-making process by setting up an official advisory committee including academic staff, students, and administrators, in order to achieve a participatory approach in the distribution of resources.

Furthermore, to support long-term financial viability, the university should create substitute funding plans. The institution needs to seek other funding sources, such as public-private partnerships and research grants, etc., in addition to the present financial resources, in order to fulfill the budget restrictions. Applying phased budgeting models can also provide more flexible and gradual financial commitments, thus ensuring that the expenditures coincide with the institutional priorities and income flows.

To further enhance operational resilience, the university should also strengthen the digital learning facilities. By increasing the online learning resources and information technology facilities, the physical resource limitations can be alleviated, and the hybrid learning models can be supported. Along with this, improving the faculty workload and commuting assistance are equally important. The university should evaluate the distribution of workloads to ensure a more balanced and efficient teaching schedule in order to fully utilize the faculty's effort and minimize the heavy teaching burdens caused by traveling between multiple campuses. This is significant to give priority to the timely subsidies for the faculty's transportation costs in order to improve their well-being and reduce their financial burden.

Taken together, these measures will assist the institutions in maintaining continuous business operations, making optimal use of the resources, and establishing an adaptable operating structure for the expanded campuses.

Disclosure statement

The author declares no conflict of interest.

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Appendix

Semi-Structured Interview Questions

Title: Investigating Resource Optimization and Business Continuity in a Higher Education Campus Expansion

This interview, which is in a semi-structured format, is intended to obtain detailed information from university administrators, teachers, and students about their viewpoints on resource allocation, business continuity, and the difficulties encountered during campus enlargement.

Interview Instructions:

Duration: 15–30 minutes

Type: Semi-structured

Participants: University administrators, faculty members, students

Participants will be informed about the objectives of the research, the confidentiality measures, and their permission to leave the study at any time.

Section 1: Background and Institutional Role

- 1.1. Can you tell me about your position at the university and your participation in the campus expansion project? (For administrators & faculty)
- 1.2. How has the campus enlargement influenced your daily study/administrative work? (For teachers and students)
- 1.3. What were your expectations regarding the expanded campus, and have they been met so far?

Section 2: Resource Availability and Utilization

- 2.1. From your perspective, how effectively are the newly expanded facilities being utilized? (Are there underutilized or overcrowded spaces?)
- 2.2. Have you faced any shortage of resources (such as classrooms, laboratories, library areas, dormitories, IT facilities)? If so, please explain how these shortages affect you.
- 2.3. In your view, which main factors affect the efficiency of resource distribution in the new campus? (Such as financial restrictions, planning ineffectiveness, policy restrictions, etc.)

Section 3: Business Continuity Challenges

- 3.1. Were there any operational disruptions during or after the expansion process? If yes, what were the causes?
- 3.2. How has the expansion impacted teaching, research, or student services? (For faculty & students)
- 3.3. Has there been any financial restriction impacting the continuous expansion of the campus? If yes, what measures have been taken to deal with it? (For administrators)
- 3.4. What are the most significant business continuity risks associated with this expansion? (For administrators)

Section 4: Strategies for Resource Optimization & Improvement

- 4.1. In your opinion, what strategies should be implemented to optimize resource allocation and management at the expanded campus?
- 4.2. How can teachers, students, and administrators become more actively involved in the resource management procedure?
- 4.3. What measures should be taken to enhance business continuity and long-term operational efficiency?

Section 5: Final Thoughts

- 5.1. If you could change one aspect of the campus expansion project, what would it be and why?
- 5.2. Is there any other information you want to include concerning resource management, business continuity, or the overall campus operations?

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