THE INFLUENCE OF RESOURCEALLOCATION ON EDUCATION MANAGEMENT EFFICIENCY OF HIGHER VOCATIONAL COLLEGES IN CHONGQING SOUTHWESTERN, CHINA

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Abstract

This study aims to analyze the impact of resource allocation on education management efficiency in higher vocational colleges in Southwestern Chongqing, China. A structured questionnaire was distributed to 350 staff members from 44 institutions, focusing on the relationship between three types of resources and educational management efficiency. Data were analyzed using descriptive statistics, t-tests, ANOVA, correlation analysis, and multiple regression analysis. The findings revealed that human and technological resources significantly influence management efficiency, with human resources being the most prominent factor, while funding resources showed relatively weak effects. Grounded in the Resource-Based View (RBV), the study provides both theoretical evidence and practical implications for improving the efficiency of vocational college management.

Keywords: Resource allocation, Education management efficiency, Higher vocational colleges

Introduction

Over the past decade, China's higher vocational education system has undergone rapid development, playing a crucial role in supporting regional economic growth and industrial upgrading. However, as the external environment grows more complex and educational governance becomes more modernized, vocational institutions are encountering practical challenges such as inefficient resource allocation, rigid administrative structures, and imbalanced human capital. While previous studies have examined the link between educational resources and management performance, most have focused on financial inputs or physical infrastructure, lacking comprehensive analysis of internal factors such as human and technological resources. Furthermore, much of the existing literature remains largely qualitative, with limited empirical validation. In the Southwestern region of China, especially in Chongqing, there remains a notable research gap regarding how vocational colleges can improve management efficiency through strategic resource allocation. This study aims to address this gap by adopting the Resource-Based View (RBV) to model and examine the real-world impact of various resource factors on education management efficiency, thereby offering practical insights for policy and institutional improvement.

Research objectives

This study aims to achieve the following objectives:

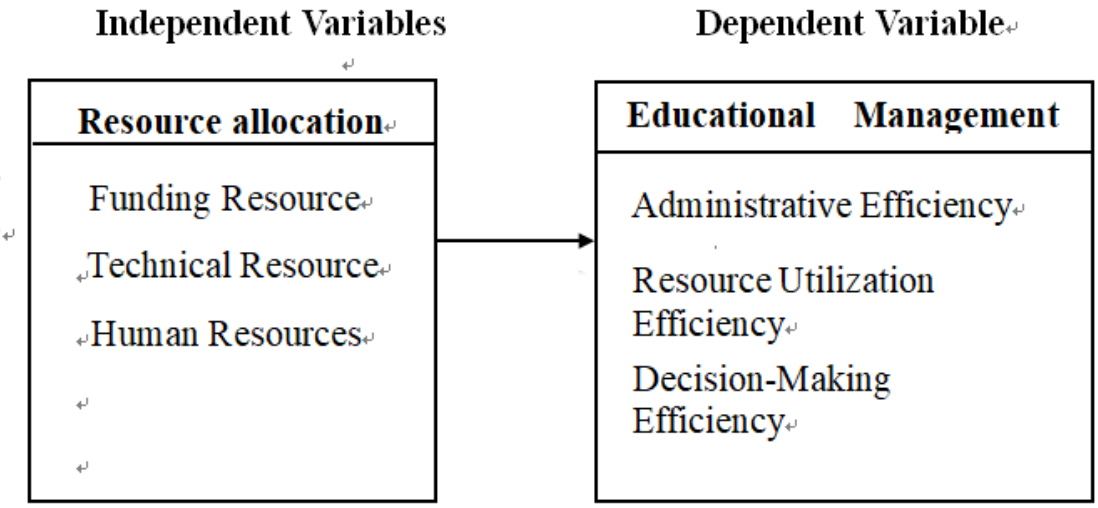
1. To study the current state of resource allocation and educational management efficiency in higher vocational colleges in Chongqing;

2. To study the relationship between resource allocation and educational management efficiency in higher vocational colleges in Chongqing;
3. To study the influence of resource allocation on educational management efficiency in higher vocational colleges in Chongqing.

Conceptual Framework and Hypotheses

Conceptual Framework

Based on the Resource-Based View (RBV), this study develops a conceptual framework to examine the relationship between resource allocation and education management efficiency. Resource allocation is categorized into three dimensions: funding, technological, and human resources. Likewise, education management efficiency is measured across administrative efficiency, resource utilization efficiency, and decision-making efficiency. The framework aims to empirically test whether significant correlations and effects exist between these constructs.



Hypotheses

The research hypotheses are as follows:

H_1: There is a significant correlation between the current status of resource allocation and education management efficiency in higher vocational colleges in Chongqing.

H_2: Each dimension of resource allocation (funding, technology, human resources) is positively correlated with each dimension of education management efficiency (administrative efficiency, resource utilization efficiency, decision-making efficiency).

H_3: Resource allocation has a significant positive impact on education management efficiency.

Literature Review

To investigate the impact of resource allocation on education management efficiency in higher vocational colleges, this study conducts a literature review covering both theoretical foundations and empirical variable definitions.

Theoretically, the Resource-Based View (RBV) argues that an organization's internal resources and its capacity to integrate them are key to achieving sustainable performance. This perspective supports the study's investigation of how human, technological, and financial resources affect management efficiency. Organizational Management Theory emphasizes the

importance of internal structures and coordination mechanisms in promoting operational efficiency. Efficiency Theory contributes a clear framework for assessing educational performance through three indicators: administrative efficiency, resource utilization efficiency, and decision-making efficiency. New Public Management (NPM) Theory brings in performance-based thinking, financial transparency, and institutional accountability, which are critical in improving public sector education governance. Educational Governance Theory focuses on how institutional structures and stakeholder interactions influence the distribution and use of resources. Lastly, Human Capital Theory highlights the role of faculty and administrative staff as strategic assets whose investment shapes educational outputs and institutional effectiveness.

Empirically, resource allocation is typically divided into three categories: funding, technological, and human resources. While financial inputs are essential to institutional functioning, their impact depends on allocation mechanisms and oversight. Technological resources, including digital infrastructure and smart campus systems, have become central to improving administrative automation and service delivery. Human resources are widely regarded as the most strategic resource, influencing both efficiency and adaptability. As the dependent variable, education management efficiency is measured through performance in administrative coordination, resource utilization, and evidence-based decision-making.

Although prior research has addressed individual elements of resource allocation or efficiency, few studies offer a comprehensive model, particularly within the context of vocational education in Southwestern China. This study fills that gap by constructing a multidimensional conceptual framework and testing hypotheses based on established theoretical foundations.

Research Methodology

This study employed a quantitative research design using a structured questionnaire to explore the influence of resource allocation on education management efficiency in higher vocational colleges.

Population and Sample Group: The target population consisted of teachers and administrators from 44 higher vocational institutions in Southwestern Chongqing, China, including both urban and county-level colleges. The study focused on staff members actively involved in institutional management.

Sample Size and Sampling Method: A stratified random sampling technique was used, yielding 350 valid responses. The sample included individuals across different job types and years of service, ensuring representativeness.

Variables: The independent variable was resource allocation, measured through three dimensions: funding resources, technological resources, and human resources. The dependent variable was education management efficiency, assessed across administrative efficiency, resource utilization efficiency, and decision-making efficiency. All variables were measured using a 5-point Likert scale.

Research Instrument: A structured questionnaire was designed with three sections: demographic information, perceptions of resource allocation, and evaluation of education management efficiency. The instrument demonstrated high internal reliability, with Cronbach's alpha coefficients above 0.85.

Data Collection and Processing: Data were collected via both paper and online surveys between March and April 2025. All responses were cleaned and coded prior to analysis.

Data Analysis Methods: Statistical analysis was conducted using SPSS, including descriptive statistics, t-tests, ANOVA, Pearson correlation analysis, and multiple regression.

These methods were used to assess the strength and significance of the relationships between variables.

Interpretation of Results: Results were interpreted using p-values, regression coefficients, and R^2 values to determine the relative impact of each resource dimension on education management efficiency.

Research Results and Discussion

Research Objective 1: Current Status

Based on 350 valid responses (see Table 1), participants reported moderately high evaluations of both resource allocation and educational management efficiency in higher vocational colleges in Southwestern Chongqing.

Among resource dimensions:

Funding resources had the highest mean score (X = 3.64, SD = 0.84), indicating sufficient financial support and infrastructure; Human resources scored 3.61 (SD = 0.81), suggesting reasonable personnel structure and collaborative mechanisms; Technological resources scored lowest (X = 3.55, SD = 0.85), reflecting a need for further development in digital platforms and IT infrastructure. Regarding educational management efficiency: Resource utilization efficiency ranked highest (X = 3.63, SD = 0.78); Administrative efficiency followed (X= 3.62, SD = 0.77); Decision-making efficiency scored the lowest (X = 3.57, SD = 0.79), suggesting room for improvement in participatory governance and policy implementation mechanisms.

Table 1 Summary of results of each variable item in the questionnaire (N=350)

Variable	Items	Summary of Item Content	X	SD
Funding Resources	Q4–Q7	Funding adequacy, equipment, infrastructure, budgeting	3.64	0.84
Technological Resources	Q8–Q11	Digital facilities, networks, new tech, resources	3.55	0.85
Human Resources	Q12–Q16	Staffing structure, training, motivation, collaboration	3.61	0.81
Administrative Efficiency	Q17–Q20	Process flow, communication, rule clarity, admin speed	3.62	0.77
Resource Utilization Efficiency	Q21–Q24	Equipment use, budgeting, resource support, HR use	3.63	0.78
Decision-Making Efficiency	Q25–Q28	Research basis, democratic process, execution, results	3.57	0.79

Research Objective 2: Correlation and Hypothesis Testing

As shown in Table 2, Pearson correlation analysis revealed significant positive relationships ($p < 0.01$) between all three resource allocation dimensions and each efficiency measure:

Table 2 Correlation Matrix of Key Dimensions (N = 350)

Educational Efficiency \ Resource Allocation	Funding Resources	Technological Resources	Human Resources
Administrative Efficiency	0.521**	0.473**	0.498**
Resource Utilization Efficiency	0.534**	0.489**	0.512**
Decision-making Efficiency	0.502**	0.468**	0.475**

These findings confirm Hypotheses H1 and H2. They suggest a strong synergy between resources and management effectiveness, in line with Barrett, et al. (2021) and Zhang & Liu (2022), who emphasized the importance of strategic resource allocation in educational performance frameworks.

Research Objective 3: Regression and Impact Comparison

Table 3 presents the multiple regression results, indicating that all three resource dimensions significantly predict management efficiency ($R^2 = 0.895$, $p < 0.001$):

Table 3 Results of Linear Regression Analysis (n = 350)

Predictor	B	Beta	p-value
Funding Resources	0.543	0.197	0.047**
Technological Resources	1.359	0.506	0.001**
Huan Resources	0.559	0.246	0.020*

These findings validate Hypothesis H_3 and highlight technological resources as the strongest predictor. This is consistent with current global perspectives that emphasize the transformative role of digital tools in educational governance.

Discussion with Reference to Previous Studies

The findings of this study are consistent with and supported by multiple prior studies and theoretical frameworks, further validating the systemic impact of resource allocation on management efficiency.

The strong correlations and regression outcomes across all resource dimensions echo the conclusions of Barrett, et al. (2021), who emphasized that effective resource management is a key determinant of performance in educational institutions, especially in developing contexts.

Regarding funding resources, although its beta coefficient was relatively low ($\beta = 0.197$), its high correlation with resource utilization efficiency ($r = 0.534$**) suggests its foundational role in institutional functioning. Li & Wang (2021) argued that funding alone cannot guarantee efficiency unless accompanied by effective usage mechanisms and accountability frameworks—consistent with this study's results.

For human resources, the significant correlations with resource utilization and

administrative efficiency (r = 0.512**, 0.498**; β = 0.246) support Hanushek & Woessmann's (2021) findings that the quality of teachers and management personnel directly influences institutional outcomes. Becker's (1964) Human Capital Theory also underlines that investing in personnel development enhances long-term organizational efficiency.

Technological resources emerged as the strongest predictor (β = 0.506), underscoring their growing importance in educational administration. According to OECD (2022), digital platforms and smart systems are central to improving responsiveness and decision-making accuracy in educational systems. Similarly, Chen & Wang (2023) found that institutions with higher digital maturity perform better in administrative efficiency and strategic governance.

Overall, the results confirm the applicability of the Resource-Based View (RBV) in vocational education management and enrich the theoretical understanding of how financial, human, and technological resources synergize to shape governance outcomes.

Research Suggestions

This study investigated the impact of resource allocation on educational management efficiency in 44 higher vocational colleges in Southwestern Chongqing, based on 350 valid questionnaire responses. The main conclusions and recommendations are summarized as follows:

Research Conclusions

Objective 1: To examine the current status of resource allocation and efficiency

The findings showed that all three resource dimensions—funding, technology, and human—were rated above average. Funding scored the highest (X= 3.64), while technology scored the lowest (X= 3.55). In terms of efficiency, resource utilization was rated highest (X= 3.63), and decision-making was lowest (X= 3.57), indicating room for improvement in digital support and participatory governance.

Objective 2: To analyze the relationship between resource allocation and efficiency

Pearson correlation analysis showed significant positive correlations between all resource and efficiency dimensions ($p < 0.01$), especially between funding and resource utilization (r = 0.534**) and human resources and administrative efficiency (r = 0.498**). These findings confirm H1 and H2 and suggest synergistic interactions among the resources.

Objective 3: To assess the influence of resource allocation on efficiency

Regression analysis revealed that all three resource types significantly predicted management efficiency ($R^2 = 0.895$). Technological resources had the strongest impact (β = 0.506), followed by human (β = 0.246) and funding (β = 0.197), confirming H3. This highlights the need for a balanced and integrated resource strategy.

Research Suggestions and Future Directions

To enhance future research, the following directions are proposed:

1. Expand research scope: Future studies may involve other regions or countries to examine how institutional environments shape the resource-efficiency relationship.

2. Incorporate mediating/moderating variables: Variables such as digital literacy, organizational culture, and policy support should be considered to improve model depth and explanation.

3. Refine measurement dimensions: Especially for technological resources, future research should measure sub-dimensions like system quality, access frequency, and platform usage effectiveness.

4. Apply mixed-method approaches: Combining quantitative and qualitative methods,

such as longitudinal data and case studies, can uncover causal mechanisms over time.

5. Focus on low-performing areas: As decision-making efficiency scored lowest, further studies should explore participatory decision-making, transparency, and feedback loops.

Propose future research questions:

1.What is the optimal mix of resource allocation to maximize governance performance?

2. How does collaboration between teachers and administrators affect resource utilization?

3. How do digital governance tools perform across different institutional types?

These extensions will help scholars better understand the dynamic mechanism from resource inputs to efficiency outcomes in vocational education governance.

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