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Application of the Balanced Score for Building the Performance Assessment System at Public Universities in Hanoi in the Autonomous Condition

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Abstract

The article applies the Balanced Scorecard (BSC) to build a system of performance indicators at public universities in Hanoi under autonomous conditions. The article uses primary and secondary data collected from 46 public universities in Hanoi. Primary data was collected from interviews and surveys that took place in April 2023. The obtained research results show that: (1) the actual status of the performance evaluation criteria system at public

universities in Hanoi is not really associated with the school's development strategy; (2) the system of performance measurement indicators has not been used as a basis for formulating salary and bonus regulations. Based on the current situation study results, the research team proposes a system of criteria to evaluate the performance of public universities in Hanoi in terms of autonomy.

Keywords: Operational Efficiency, Balanced Scorecard, Public University, Autonomy

1. Introduction

Over the past decade, the issue of autonomy in Vietnamese higher education has seen many positive changes. The Ministry of Education and Training (2011) ^[1], on the basis of analysis and assessment of the development of higher education in advanced countries, has determined that university autonomy is an inevitable trend in higher education development. In Vietnam. Under the autonomy mechanism, public universities must obey the competition laws of the market economy. Therefore, public universities are constantly improving their operational efficiency. To properly evaluate performance, public universities need to have a system of performance indicators, especially in terms of autonomy. Kaplan and Norton's BSC model has been used by many organizations and research institutions to evaluate performance. BSC is built on the organization's strategy, turning the strategy into specific actions to achieve the organization's goals. The BSC model indicator system evaluates financial and non-financial information with 4 aspects: Financial, Customer, Internal process, Training and development. Therefore, this study will systematize the BSC model theory and propose a system of indicators to evaluate the performance of public universities in autonomous conditions in Hanoi.

2. Research Overview and Theoretical Basis of the Criteria System in BSC at Public Universities under Autonomous Conditions

2.1 Study Overview

Karathanos (2005) ^[4] studied the performance evaluation system in educational institutions through empirical research in some universities. The author believes that in recent years, several educational institutions have applied the BSC model and achieved some achievements. Specifically, the BSC model has helped Kuzulu - Natal University to set up an evaluation system for annual reporting, provide information for staff in the assessment, and assist in the inspection process to ensure the quality as stated. The Rossier School of Education in Southern California uses this model to evaluate curriculum and instructional plans. Meanwhile, Rollin College in Florida used the BSC model to implement strategic plans by looking at the school's core values from the perspective of students, staff, and managers.

Weerasooriya (2013) ^[9] studied the applicability of the BSC model in universities in Sri Lanka. The author also proposes the BSC model with four aspects: Customers, Internal Processes, Learning and Development, and Finance. The research results also show that learning and development are given the top priority in these schools, and the financial aspect is ranked last.

Fahmi and Saudan (2015) ^[3] conducted a review and evaluation of the use of BSC in higher education institutions. Research shows that many educational institutions have applied BSC in their organizations in accordance with the organization's

functions, vision, mission, and strategic goals. Research has highlighted the role of the BSC in higher education institutions.

For domestic higher education institutions, authors Phan Thi Hai Ha (2015) ^[6], Tran Minh Tam, and Nghiem Van Loi (2018) propose specific indicators in each aspect of the Balanced Scorecard model. Studies have also shown that there are differences in the criteria system between public universities and non-public universities. However, studies have not mentioned the criteria system when public universities implement the autonomy mechanism.

2.2 Theoretical Basis

Overview of Public Universities in Terms of Autonomy

In Vietnam, a public university is a public non-business unit operating in the fields of training and scientific research. The Law on Higher Education (2018) ^[8] stipulates that "public universities are established and invested by the state, ensure operating conditions, and represent the owner". The establishment and operation of public universities demonstrate the role of the state in higher education. The state, through the activities of public universities, regulates social resources in the most effective way, thereby regulating a reasonable human resource training structure and maintaining and developing education and training.

University autonomy is a concept that arose with the advent of universities. The concept of autonomy can be understood as having the right and being able to control your own affairs. According to the Higher Education Law (2018), public universities have autonomy in the following five areas: (1) Organizational and personnel autonomy, (2) Financial and property autonomy, (3) Autonomy in training, (4) Autonomy in science and technology, (5) International cooperation, quality assurance of higher education. Public universities exercise a higher degree of autonomy in accordance with their capacity, ranking results, and educational accreditation results.

1. Autonomy in organization and personnel

Autonomy in organization and personnel includes promulgating and organizing the implementation of internal regulations on organizational structure, labor structure, list, standards and regimes of each job position; recruiting, employing and dismissing lecturers, public employees and other employees, deciding on administrative and managerial personnel in the higher education institution in accordance with the provisions of law.

2. Financial and Property Autonomy

Autonomy in finance and assets includes promulgating and

organizing the implementation of internal regulations on revenue sources, management and use of financial resources and assets; attracting development investment capital; tuition fees, scholarships for students and other policies in accordance with the law.

3. Autonomous Training

Training activities include such contents as enrollment; training industry; training programs and curricula; teaching methods... Admission is an important stage of the training process. The number of enrollments must be based on the learning needs and human resource needs of the society, depending on the capacity of facilities, teachers, finance, and teaching management capacity of each school.

Autonomy in training means that public universities can decide on their own training targets and training programs. Schools develop and implement training programs and report to the Ministry and publicize them on the mass media for society to monitor the quality of training.

4. Autonomy in Science and Technology

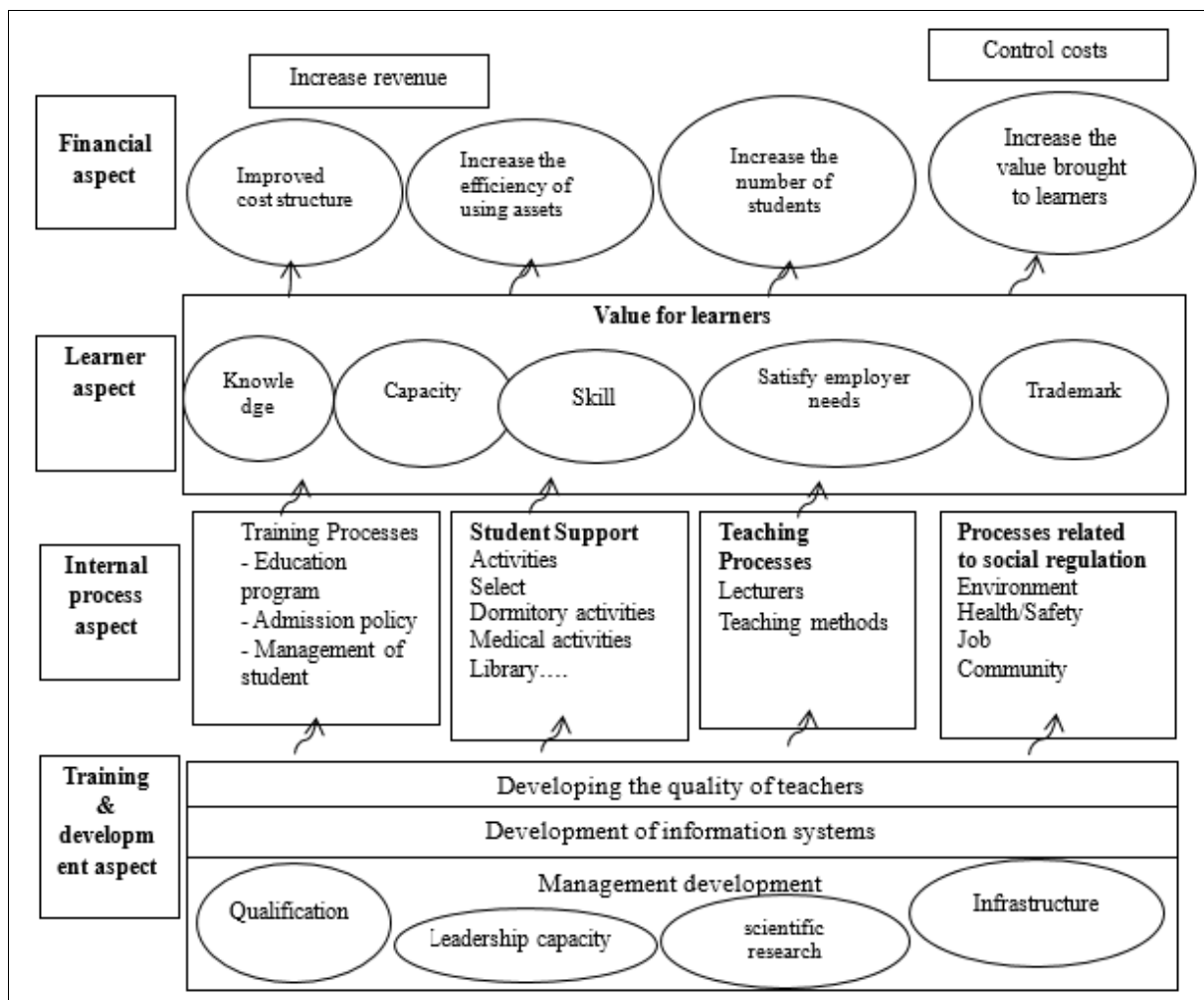
Autonomy and self-responsibility in signing science and technology contracts; carrying out scientific and technological tasks; registering to participate in the selection and implementation of science and technology tasks.

5. International Cooperation

Public universities are autonomous in scientific research cooperation and technology transfer activities, organize international scientific conferences and seminars, foster and exchange lecturers, researchers, managers, and learners, and joint training with foreign countries. Higher education institutions must publicly announce relevant information about training joint programs with foreign countries on the university's website and mass media.

The System of Performance Evaluation Criteria According to the BSC Model at Public Universities in an Autonomous Condition

BSC has four aspects: finance, customers, internal processes, and training and development. The construction of a system of indicators to measure operational efficiency must ensure the achievement of the organization's goals and strategies. For public universities operating not for profit, financial goals are not the primary goals of the schools. In order to have a basis for building a balanced scorecard, public universities develop a strategy map that represents the university's vision and strategic goals for development. In the study of Phan Thi Hai Ha (2015) ^[6], a strategy map for public universities was presented.



Source: Phan Thi Hai Ha (2015) [6]

Fig 1: Strategy Map in Public Universities

From the theoretical model of Kaplan (1996) [5], many researchers such as Phan Thi Hai Ha (2015) [6], Tran Minh Tam and Nghiem Van Loi (2013) [7] have proposed the BSC model for public universities in Vietnam with 4 aspects.

1. Financial Aspect

Indicators in the financial aspect are intended to evaluate the financial performance of public universities. For a public university operating not for profit but fulfilling the role of providing a high-quality workforce for society. Therefore, the goal of public universities with a financial aspect is to increase revenue sources while controlling costs well. The system of performance evaluation criteria according to this goal is the total revenue from activities, the difference between revenue and expenditure, and total expenditure on activities.

2. Learner aspect

The goal of public universities is to train and provide human resources for society. The training quality of public universities is reflected in the outputs of learners, through the percentage of learners who graduate on time, the percentage of learners who have jobs right after graduation, and the degree of learners' satisfaction with the training program as well as the level of learners' satisfaction with the teaching staff.

3. Internal Process Aspect

The indicators in the Internal Process aspect show the ability to manage training activities, the ability to manage lecturers and staff; manage activities to support learners, and ensure environmental and social factors.

To be able to carry out training tasks with good quality and high efficiency, it is necessary to create a favorable working environment for the healthy development of each individual. The working environment here is not only good conditions in terms of facilities and equipment for teaching but also includes the organization and direction of activities in the school, which is the relationship between students and teachers from units and individuals in the school, is the attachment of all staff in the school.

Public universities evaluate their performance in this aspect through indicators such as The number of learners reflecting poorly on service quality, hygiene, and environmental conditions, library activities that meet the needs of the public, and support activities to meet the needs of learners.

4. Training and Development Aspect

The goal of a public university is to provide high-quality human resources for society. Therefore, public universities constantly improve training quality and invest in facilities. The measures for training and development aspects are divided into 3 groups: (1) indicators of human resource

training, (2) indicators of information systems, (3) Indicators of facilities.

3. Research Methods

Data collection methods:

- Secondary data: Document published on the mission and strategy of public universities in Hanoi and how to evaluate the current performance of the universities.
- Primary data: Data collected from surveys of school leaders, lecturers, and staff at public universities in Hanoi.

The research team sent the survey by email, Google form, and phone. Currently, there are 46 public universities in Hanoi, including 8 public universities under Hanoi National University and 38 public universities under State management agencies. From the research overview, the authors build a research model with 25 observed variables. According to Hair *et al.* (2006), the minimum sample size is 5 times the number of observed variables, so the research team distributed 150 questionnaires, and the results obtained 130 votes from 30 public universities in Hanoi.

Table 1: Number of observed variables in the research model

Aspect	Number of observed variables	Author
Finance	4	Weerasooriya (2013) ^[9] , Tran Minh Tam and Nghiem Van Loi (2018), Phan Thi Hai Ha (2015) ^[6]
Learner	6	Tran Minh Tam and Nghiem Van Loi (2018), Phan Thi Hai Ha (2015) ^[6]
Internal Process	7	Fahmi and Saudan (2015) ^[3] , Tran Minh Tam and Nghiem Van Loi (2018), Phan Thi Hai Ha (2015) ^[6]
Training and developing	8	Tran Minh Tam and Nghiem Van Loi (2018), Phan Thi Hai Ha (2015) ^[6]

Source: Research team

Methods of data processing: The authors used the method of reliability analysis (Reliability Analysis) through Cronbach's Alpha coefficient, and exploratory factor analysis (EFA). To process the data obtained from the survey, the authors used the software SPSS 20.

4. Results

The Current Status of the System of Performance Evaluation Indicators at Public Universities in Hanoi

Every year, public universities in Hanoi prepare their implementation reports and make them public at the Conference of Officials. The report presents the results of the school's activities in the past school year. The report also shows that public universities have a system of performance evaluation criteria. However, the major indicator system still represents the strategic goals of public universities in terms of autonomy. According to the survey results, public universities in Hanoi have initially applied BSC to evaluate operational efficiency, but the level of application is not high and has not really satisfied the requirements of the university's leadership. Managers as well as lecturers and experts at public universities in Hanoi are not satisfied with the current evaluation criteria system.

Table 2: Table describing the variables measuring the level of BSC application in evaluating the performance of public universities in Hanoi Descriptive Statistics

	N	Mean	Std. Deviation
MD.VD. Level of BSC application at the unit	130	3.7478	.63855
MD.HL. Level of satisfaction with the system of performance evaluation criteria at the unit	130	2.4813	.51728
MD.CB. Urgency in renewing the system of performance evaluation criteria at the unit	130	3.9159	.67921
Valid N (listwise)	130		

On the other hand, the results of performance evaluation have not really been used as a basis for public universities to pay salaries and bonuses. This has not encouraged employees to constantly improve their qualifications and professional quality.

Stemming from the status quo of the performance evaluation criteria system at public universities, stemming from the need for a new system of measurement indicators in line with the university's strategic goals, the research team proposes a system of indicators in the Balanced Scorecard model.

Proposing a System of Performance Evaluation Criteria According to the BSC Model for Public Universities under Autonomous Conditions in Hanoi

When public universities exercise autonomy, they will have opportunities but also face many challenges when universities have to be autonomous and responsible for their own sources of revenue and expenditure, training activities, and cooperation international as well as human resource organization. On the other hand, public universities with the main objective of training and providing society with high-quality human resources. Therefore, indicators under the Financial aspect are not the primary goals of public universities.

In order to build a system of performance evaluation criteria according to the BSC model at public universities under autonomous conditions in Hanoi, the research team, after conducting an overview and qualitative research, developed a research hypothesis with 25 scales based on research by Weerasooriya (2013)^[9], Fahmi and Saudan (2015)^[3], Phan Thi Hai Ha (2015)^[6], Tran Minh Tam and Nghiem Van Loi (2018).

First, the research team tested the reliability of the scales through Cronbach's Alpha coefficient and the total variable correlation coefficient. The results obtained are as follows:

Financial aspect

With the results of testing the reliability of the scale, it was found that the 4 indicators proposed by the research team did not have any coefficients of total correlation coefficient < 0.3, with Cronbach's Alpha coefficient = 0.812 having met the requirements has real meaning. In which the indicator: MD.TC1. The percentage of total revenue / total cost of the school is assessed as the most important level.

Learner Aspect

With the first test results, all observed variables with a total

correlation coefficient < 0.3 were removed. That's the MD.NH6 variable. Number of students receiving national and international awards. The authors continued to perform the second test, the results showed that all observations were satisfactory with the total variable correlation coefficient > 0.3 and Cronbach's Alpha = 0.832. Thus, after removing 1 variable that does not guarantee the reliability condition, the remaining 5 criteria will be added to the learner aspect to evaluate the degree of convergence through the EFA test.

Internal Process Aspect

The result of the 1st Cronbach's Alpha test has 1 unsatisfactory criterion due to the Cronbach's Alpha coefficient < 0.5 which is the indicator MD.QTNB2. Percentage of subjects that learners rated "satisfied" after finishing the subject. The research team continued to perform the second test with the results of the remaining 5 indicators having a total variable correlation coefficient > 0.3 and Cronbach's Alpha coefficient > 0.5.

Training and Development Aspect

As a result of testing the reliability of the scale, there is one unsatisfactory scale due to the correlation coefficient of the total variable < 0.3 which is MD.DTPT6. Number of lecturers and staff trained abroad. The research team continued to perform the second test after removing this variable. The results of the second test show that the remaining 7 variables meet the requirements with the correlation coefficient of all variables > 0.5 with Cronbach's Alpha = 0.794.

After testing the reliability of the scale, 21 observed variables met the requirements. The research team continues to analyze the EFA factor to consider the degree of convergence of the variables. The results show that 21 observed variables converge into 4 groups with a satisfactory KMO = 0.785.

Table 3: Result of factor analysis EFA Pattern Matrix^a

	Factor			
	1	2	3	4
MD.TC1.The proportion of total revenue/total expenses of the school	.714			
MD.TC2.Teaching cost/ 1 student	.695			
MD.TC3.Percentage of salary expenses, income / Total operating expenses	.673			
MD.TC4.Percentage of R&D expenses/Total operating expenses	.639			
MD.NH1.Percentage of university graduates employed in the first year after graduation	.756			
MD.NH2.Percentage of university graduates who have jobs in the right fields of training	.782			
MD.NH3.Percentage of students graduating on time	.791			
MD.NH4.Percentage of learners satisfied with the school's training program	.725			
MD.NH5. Percentage of employers satisfied with the quality of training	.712			
MD.NB1.Percentage of classrooms equipped with teaching aids			.672	
MD.NB3.Percentage of lecturers rated "satisfied" by learners after finishing the course			.773	
MD.NB4.Support activities to meet learners' needs			.750	
MD.NB5.Students/faculty ratio			.657	
MD.NB6.Percentage of lecturers rated "satisfied" by learners after finishing the course			.785	

MD.DTPT1.Percentage of lecturers with a doctorate degree or higher			.797
MD.DTPT2.Percentage of employees with a master's degree or higher			.706
MD.DTPT3.Number of grassroots research topics/year			.655
MD.DTPT4.Number of newspapers, magazines, scientific seminars/1 lecturer/year			.571
MD.DTPT5.Number of short-term training programs/year			.642
MD.DTPT7.Number of training programs reviewed periodically			.720
MD.DTPT8.Percentage of investment costs for classroom equipment/Total operating costs			.680

Source: Research team

Thus, on the basis of studying the strategic development goals of public universities in Hanoi in terms of autonomy, the research team proposes 25 performance evaluation criteria in the BSC model. Using SPSS 20 software to evaluate the reliability of the scale and analyze EFA factors, the research team obtained results with 21 indicators belonging to 04 aspects of the BSC model.

5. Conclusion

In terms of autonomy, public universities in Hanoi face increasingly fierce competition in terms of training quality and scale. In order to continuously improve the position and prestige of the university, public universities in Hanoi need to evaluate its performance in an accurate and timely manner. In order for the performance evaluation to be effective, managers need to choose for their school an appropriate evaluation criteria system. In this article, the author proposes a BSC model with 21 indicators in four aspects: finance, learners, internal processes, training, and development.

In order to effectively deploy and apply these indicators in performance evaluation, public universities need to implement solutions:

1. Public universities in Hanoi need to develop a development strategy in stages and at the same time widely disseminate the development strategy of the university to each employee. Schools need to have propaganda so that administrators, lecturers and staff are aware of the mission and strategy of the University.
2. Public universities in Hanoi are constantly improving their organizational structure. The school should have an assignment of responsibilities and obligations for each indicator in each aspect of the BSC under the management responsibility of which department.
3. In order to encourage lecturers, experts and employees at public universities to constantly promote their abilities as well as constantly improve their professional qualifications, approach the trend of the times, the school develops a clear and detailed reward policy according to each performance evaluation criterion. The policy on remuneration and reward must be developed in accordance with the managers assigned to each indicator, creating motivation to promote the implementation of those targets.

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