



Development of a Performance Measurement System using the Balance Scorecard Method at Universities

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Abstract

A university is a system consisting of two subsystems, academic and administrative, each subsystem has its own stakeholders. Both subsystems use measurement and control through criteria and indicators that seek to ensure satisfaction of internal and external stakeholders. Performance measurement can include teaching and learning processes, research and service. This paper aims to answer the problem formulation and explain the development of performance measurement systems in various countries using the Balance ScoreCard (BSC). BSC is one of the methods chosen by several countries to assess the performance of their universities, both public and private universities. BSC is considered to provide a better assessment because it includes both financial and non-financial fields. To measure performance with BSC, there are stages that must be well designed, starting from strategic design to the evaluation stage.

Keywords: Performance, Performance Measurement System, Balance ScoreCard, University

Introduction

Performance in universities has become a topic of increasing interest in recent decades measured from different perspectives. Performance measurement can include teaching and learning processes, research and service. A university is a system consisting of two subsystems, academic and administrative, and each subsystem has its own stakeholders. The literature shows that both subsystems express quality independently but in complementary ways because the administrative subsystem serves academics. Generally, administrative processes use the organization's quality assurance programs and tools to increase efficiency and obtain quality certificates. In contrast, the academic sub system applies to academic and institutional accreditation which seeks to assess the quality of education, research, service and

resource management.

Both sub-systems use criteria and indicators to carry out measurements that seek to ensure satisfaction of internal and external stakeholders. Criteria are benchmarks that determine achievements or standards set by governments, accreditation agencies, metrics or rankings, or other stakeholders. (Abubakar et al., 2018) proposed a unique global performance measurement scale for universities establishing a basis for comparison and quality improvement. However, this scale does not take into account the differences in context between developed and developing countries.

Nowadays, it is highly recommended for any organization to measure and assess its performance to align with the overall strategy and mission of the organization, ultimately leading it to achieve the vision and goals proposed and determined by top management (Al Jardali et al., 2020). Performance-based university funding models have been introduced and have seen universities build and implement different strategies to enable them to compete and survive in an increasingly competitive situation (Kapetaniou & Lee, 2017). Universities in different countries cannot measure performance in the same way (Kapetaniou & Lee, 2017). Additionally, each country has its own history and higher education system that can influence the structure of their colleges and universities making it very difficult to rank all universities, especially across national borders, according to a single ranking indicator. (Frenken et al., 2017, Gusnardi et al., 2019)

As is known, the ambition of every organization is to achieve high organizational performance (Guarini et al., 2020, Novitasari et al., 2022). Accountancy management use tool analysis Which called Balanced Scorecards For support process management. Balanced Scorecards No only just tool For measure performance company, but something type change strategic Which comprehensive in all level organization. With measurement performance Which comprehensive, Which No only measure finance but combination measurement finance And non-financial so organizations can operate his business with more efficient.

Effective and efficient performance management can be achieved through formulating the organization's mission, goals and strategies. Goals that have been formulated at all levels of the organization, measured by the Balance Scorecard will determine key performance indicators and take corrective action (Almohtaseb et al., 2019). A positive performance measurement system that enables informed decision making to implement a successful performance management system.

In its development, many universities use the Balanced Scorecard as a system for measuring their performance. This article discusses how the balanced scorecard method is used and developed in various different higher education institutions. This article aims to provide an explanation of the following things:

- 1) Higher Education Performance Measurement System?
- 2) What is meant by Balanced Scorecard (BSC)?
- 3) What criteria are in the Balance Scorecard?
- 4) Steps taken in preparing a Balanced Scorecard?
- 5) Knowing the implementation of using the Balanced Scorecard in various countries.

Based on the problem formulation above, what makes this article different from previous research is that this article will explain the implementation of Scorecard balance in several countries such as Lebanon, Malaysia, Colombia and Jordan as well as Indonesia.

Theoretical Foundations and Literature Review

Grand Theory

According to (Yaakub & Mohamed, 2020) the Resource-based view (RBV) theory, it is used as a reference framework for exploring the breadth of dimensions in measuring higher education. RBV theory states that company resources and capabilities are important for the company because they are the most important or basic of the company's competitiveness and performance. The RBV theory explains how a company can compete with other companies by using their resources according to the company's ability to achieve excellence in competition.

Where resources are defined as something tangible or intangible that is able to help an organization achieve its goals and perform as expected. The implementation of the RBV is significant for several reasons. First, the RBV has been understudied in the context of higher education strategic management. Second, private universities are organizations that rely heavily on their resources, both tangible and intangible, to gain sustainable competitive advantage. Therefore, it is relevant to apply the RBV theory as the underlying theory in this research.

Literature review

Performance Measurement

Performance is the result of work carried out in fulfilling duties and obligations. Basically, the concept of performance can be interpreted in various ways. Some experts see it as a result of getting the job done, while others see it as a necessary behavior to achieve desired results. Performance can also be described as the level of achievement of the company's goals, objectives, mission and vision, as stated in the company's strategic planning formulation. Performance measurement is an integral part of the process of processing input into output or evaluation in designing policies to achieve university goals and objectives.

According to (Almohtaseb et al., 2019), the purpose of a performance measurement system is to help create strategies. There are four key concepts in implementing a performance measurement system:

1. Determine a strategy

In this case, the most important thing is that the goals and objectives of the organization are stated clearly and clearly. Strategies must first be created for the entire organization and then developed for lower functional levels.

2. Determine the measurement strategy

Strategy measurement is needed to articulate the strategy to all members of the organization. Organizations should focus on only a few critical metrics. So that management does not use too many unnecessary performance measures.

3. Integrating measurements into control systems

Measurement must become part of the organization, both formally and informally, as well as part of corporate culture and human resources.

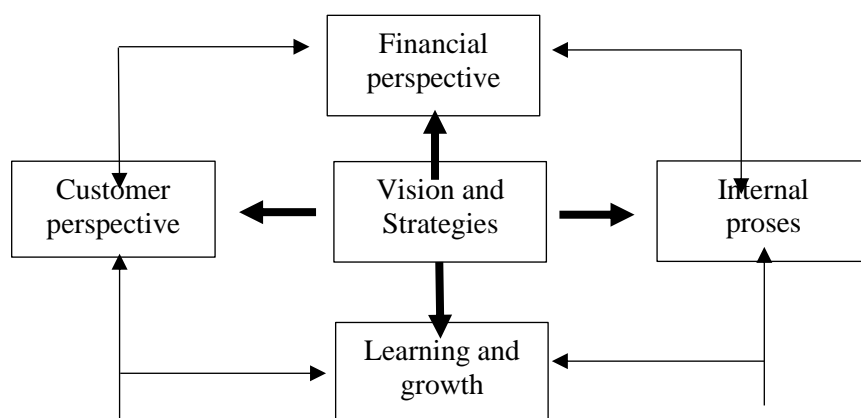
4. Continuously evaluate measurement results

5. Management always evaluates organizational performance measures if they are still valid to determine them from time to time.

Performance measurement helps managers monitor the implementation of business strategies by comparing actual results with strategic goals and objectives. A performance measurement system usually consists of a systematic method for establishing goals and objectives and periodic reporting that identifies the achievement of goals and objectives.

Performance measurement models

Many institutional performance management models have been developed previously. According to (Almohtaseb et al., 2019) the methods that can be used in measuring performance, they are BSC, Performance Prism, The European Foundation for Quality Management Excellence Model (EFQM), and The Malcom Baldrige National Quality Award Model (MBNQA). In this article we will discuss the BSC framework. The BSC Framework is built on the basis of four dimensions which include financial perspective, customer perspective, internal processes and learning and growth. The assumption of the BSC is that organizations' strategies must determine performance measures from all four dimensions. BSC has been applied by various organizations and industries and studied by various researchers. Initially, BSC was designed for use in private institutions to overcome the shortcomings of conventional models for performance management, however BSC has been implemented in public institutions and shown positive results (Kaplan & Norton, 2000). The framework of the BSC is shown in Figure 1



Kaplan and Norton (1996) BSC framework

Measuring Higher Education Performance

Reputation appears to be the first attempt to measure university performance. Ranking universities is one way to assess a university. A university's position can also be seen from the number of campus resources, number of students accepted and research reputation (Lantsova et al., 2024). Performance measurement in higher education includes academic subsystems and administrative. The third function of universities is forming academic, education, research and service subsystems (Asif & Searcy, 2014, Januri et al., 2023). Administrative subsystem, views as management operations, including resource performance and internationalization (El-Hefnawy et al., 2014). Resource performance does not only consist of components financial and human resources (Perspective--Author et al., 2010) but from all supporting services to fulfill mission functions.

To visualize how dimensions, sub-dimensions and performance indicators are integrated into a university like a system, (Hernandez-Diaz et al., 2020) draw a process flow diagram. Thus, the input, process, output and results models are referred to for the structure of university performance indicators. This model makes it possible to measure the extent to which the objectives of each university function so that the university's goals are achieved. can be seen in the following picture;

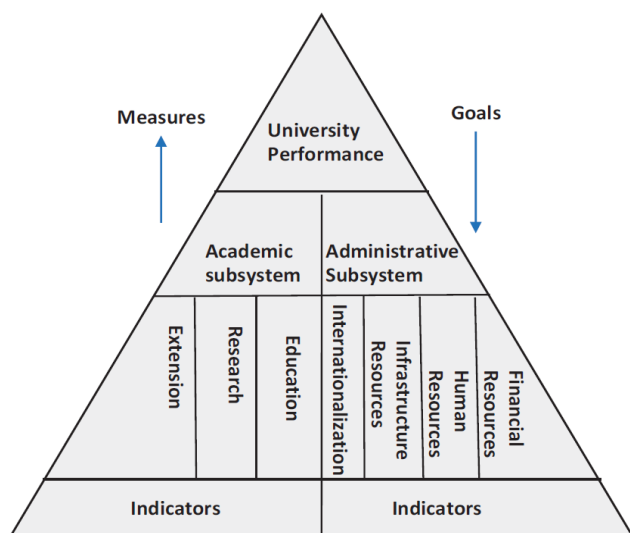


Figure 2. Performance Measurement in Higher Education

Source(s): PM framework completed by authors from Wang (2010), using the literature review and the suggestions of Abubakar *et al.* (2018) for measuring Global Academic performance

Discussion

Understanding Balanced Scorecard

The BSC is defined as a set of measures that provide managers with a quick yet comprehensive view of the business. BSC is revolutionizing the way of rewarding performance in various types of organizations, one of which is at universities. Before the introduction of the BSC, top management relied only on traditional financial measures evaluation process (Kaplan & Norton, 2000). However, BSC is used as an additional measure traditional finance because it adds several perspectives to the financial perspective, for example customer, internal, innovation and learning perspectives.

BSC enables managers to introduce four new processes: translating the vision, communicating and connecting, business planning, and feedback and learning. Thus, universities must work clearly and consciously to make and translate their BSC to fit the competitive world around them. This is a real challenge.

BSC in college

Every organization around the world tends to achieve higher performance to become a leader in the competition. Several studies were conducted to investigate how effective BSC is in organizations where perspectives differ from one organization to another where these perspectives correspond to functions that are in line with its strategic components as well as the vision, mission and strategic themes. Educational institutions are no exception to this. Many universities seek to build management systems in which their performance can be monitored

and which allow them to adapt to the challenges that arise due to the implementation of key changes. Different organizations implement BSC in ways that suit them.

What components are in the Balance Scorecard

According to (Yaakub & Mohamed, 2020) To justify the existing construct, the four components of the BSC are explained further.

1) Business process

This item represents the academic community's perception of their institution's ability to develop new academic programs, attract and retain academic members, maintain good relations between administration and the academic community, gain recognition in the quality management system and legislative bodies. It was concluded that the first factor reflects internal business processes. Organizations must identify the internal processes required to meet customer expectations. In the education industry, it is important to identify internal processes that will significantly impact customer satisfaction. Teaching and learning are core activities in educational institutions, although it has been argued that the role of academics is expanding. PHEIs should consider continuously improving the quality of their academic programs and services to achieve sustainable competitive advantage. The Malaysian government, for example, has established MQA as an institution that monitors the quality and accreditation of academic programs. PHEI is able to offer quality academic programs. Apart from that, the quality of the academic community is also important to deliver the teaching process efficiently. Apart from that, the ability to retain employees is also important in measuring performance. These criteria have been included as constructs in this research.

2) Customer .

Customer satisfaction refers to when the product or service delivered meets or exceeds customer expectations. According to Abrahams (2010), PHEI is facing increasing expectations from customers. A mismatch between customer expectations and perceptions will cause students to leave the university. Therefore, it is very important to measure customer satisfaction in this research as in the BSC model because it complements the measurement of financial performance.

However, the customer perspective needs to be clarified first. Previous studies have recognized that students are the main customers for an educational institution. The perspective was expanded by Umashankar and Dutta (2007) when they introduced faculty, staff, alumni, parents, and employers into the customer quadrant of the BSC model. Apart from that, the role of academic advisors is also important. Their role was acknowledged in this study to influence student satisfaction by providing input and expertise in developing or revising academic curricula.

3) Learning and growth

The four items revolve around the PHEI's research capabilities, which represent the learning and growth dimensions in the BSC model. These items measure the academic community's perception of PHEI's ability to complete research on time, meet research objectives, involve academics from other institutions and produce research that has an impact on society. As the higher education industry becomes more competitive, PHEI must be able to continue improving its products and their services.

This component shows PHEI's ability to innovate, improve and learn new things that increase organizational value. Innovation means that a HEI is committed to research and development as a means of introducing scientific advances, new discoveries in terms of products, processes or systems within the HEI, and commercializing new knowledge and technology for economic and social prosperity. However, PHEI's internal capabilities in providing knowledge to academics, such as the availability and accessibility of books and journals, can also help their learning and growth.

4) Financial Factors

These items measure research grants obtained, profits, return on investment and number of sales as perceived by academics. This group is identified as financial factors as in the dimensions of the BSC model.

Financial performance measures indicate the achievement of the final results from implementing a company's strategy, usually in the form of profitability, growth and shareholder value. Previous studies have recognized other financial measures such as ROE and ROI, number of sales or cash flow. Additionally, student enrollment is very important to measure because it indicates a high-quality academic program and will contribute to increased sustainability. This justifies that sales, profits, and ROI are grouped together under this factor. The need to measure PHEI's financial performance cannot be avoided.

To measure each dimension according to (Yaakub & Mohamed, 2020) can be seen in the picture below.

Steps taken in compiling a Balanced Scorecard

Based on research conducted (Almohtaseb et al., 2019) in Jordan, this research designs the steps taken in implementing a performance measurement system with the BSC

Stage one : designing a strategy

Stage one describes the preparations that need to be made before the strategic planning process can begin and the strategic direction determined. These preparations included reviewing the functioning of Jordan's public universities. This will facilitate universities to concentrate on the motives of their founding and ensure they distance themselves from activities that conflict with their mandate. Next, another preparation is to ensure the expectations of key stakeholders. This can be done by identifying the main stakeholders and the expectations of the main stakeholders from higher education. Most of the key stakeholders in a university environment are students, legislators, parents, accrediting bodies, suppliers, alumni, donors, university senate, governing boards, and funding agencies. Apart from that, environmental surveys must also be carried out at the preparation stage before the strategic planning process begins. This is because the implementation of higher education takes place in an open system where environmental forces can exist

Stage two: identification of institutional priority strategies.

The second stage focuses on identifying key institutional strategies by considering constraints/challenges, formulating SMART objectives that are important for implementing a performance management system in a developing country like Jordan due to limited resources, establishing clear roles and responsibilities, ensuring management commitment and support,

ensuring commitment and employee engagement, building a performance-oriented culture, encouraging mutual trust and respect, encouraging transparency, encouraging teamwork, and designing effective and efficient communication systems. Also, training all staff on constructive participation on performance management system concepts is essential to develop a shared understanding.

Stage three : circulation of priority strategies to faculties/departments and definition of their goals

Stage four focuses on circulating priority strategies to all levels of the university. The aim is to enable a shared understanding of the university's vision, their mission, their core values, their strategic direction and priorities among all university staff. This can be done with an effective communication system, either through ICT or manual communication systems. After effective communication of university priorities to all university units, there is a need for each unit to define its objectives to align with the university's strategic direction. This can be done through staff involvement, teamwork, commitment, trust, transparency and mutual respect, while emphasizing the importance of implementing performance management and the university's strategic direction and priorities must be carried out by the leadership of each unit.

Stage four : determining performance indicators

Empirical studies have identified several appropriate performance measures to measure the performance of public universities, and performance indicators to measure each performance can be determined by units. Therefore, measures include budget performance, human resource size, teaching and learning experience, leadership or management practices, physical infrastructure, ICT infrastructure, community services, strategic implementation, partnerships, institutional image/stakeholder feedback, event participation, good governance, acceptable student outcomes, environmental and health accountability.

Stage five : identification, prioritization, allocation and alignment of resources, process activities and departmental/individual goals with strategy.

Identification , prioritization and allocation of resources that will enable the achievement of the set objectives is necessary after the identification of key performance indicators. Additionally, strategies should be linked to resources, processes, activities, and all unit objectives to facilitate an integrated performance management approach.

Stage six : measuring institutional performance

At this stage, the university's performance is measured to find out whether it is running according to stakeholder expectations. Based on the proposed and identified performance measures, the university goals that have been achieved or not achieved will be determined.

Seventh stage : evaluation, reward/recognition and performance improvement.

After measuring institutional performance, it is necessary to differentiate the level of performance. Where there is excellent performance, the reasons for the excellent performance must be identified, and where poor performance occurs, the reasonable cause must be determined. In addition, performance results must be communicated to respective stakeholders. Moreover, outstanding performance needs to be recognized and rewarded, whereas poor performers need to be motivated and encouraged to improve their performance because the aim of the reward system is to help poor performers to improve their performance. Also, corrective actions should be taken through plans to review activities and methodologies for improvement

purposes. Deficiencies leading to the achievement of the set goals must be identified and the best means for continuous improvement must be designed.

Implementation of a performance measurement system with BSC in several countries.

A. Jordan

Since the institutional performance management guidelines were implemented, it has become a management system performance is very important, especially for realizing organizational goals (De Waal, 2003). According to De Waal (2004), effective and efficient performance management can be achieved through formulating the mission, goals and strategies of the organization, disseminating the formulated goals to all levels of the organization, building a Balanced Scorecard (BSC) with determining factors success (CSF), set key performance indicators (KPI) and take steps repair. Based on previous research according to (Almohtaseb et al., 2019) An effective and efficient performance management model for Jordanian public universities can be achieved through formulating organizational missions, strategies and goals, goals flowing to all levels of the organization, creating a BSC with CSF, formulating KPIs, and taking corrective action. Based on all the evidence and attributes from existing studies, proposing a performance management model for public universities in Jordan is carried out in several stages including:

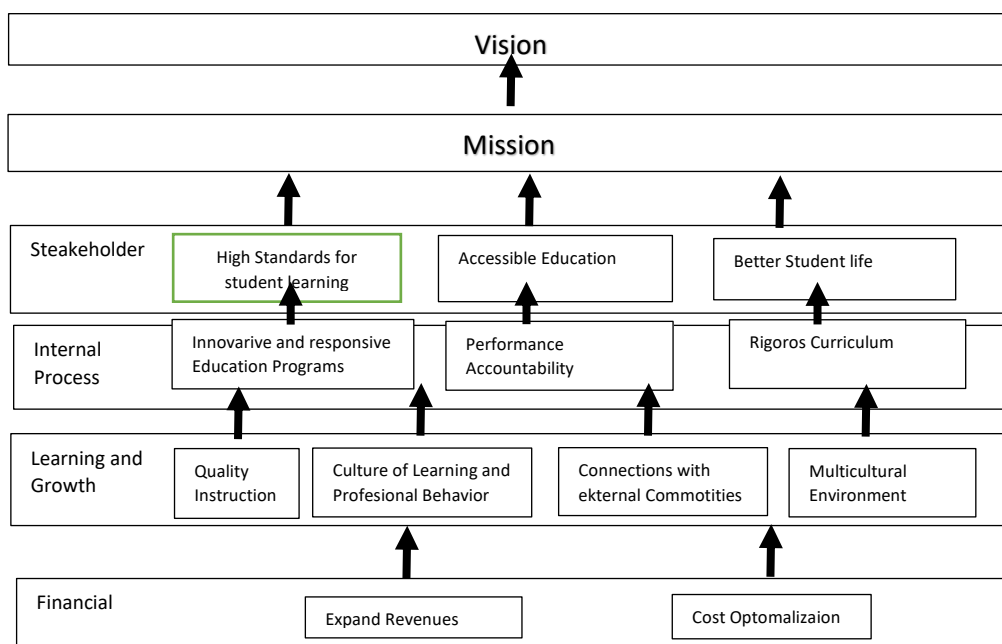
1. Designing University Strategy
2. Identify institutional priority strategies
3. Circulate priority strategies to faculties/departments and set goals for each department/faculty
4. Determination of performance indicators
5. Identify allocation and alignment of resources, process activities and departmental/individual goals and align with strategy
6. Measuring institutional performance
7. Evaluation, giving awards/recognition for improved performance

B. Latin American countries such as Colombia

In fact, the quality process in Latin American universities began in the 1990s. There, in each country, one or more institutions related to the government set their specific models and standards. Based on research conducted by (Hernandez-Diaz et al., 2020) 15 indicators used in performance measurement that can be applied at universities in Colombia. These results are a starting point regarding the integration of performance indicators and accreditation systems in Latin American universities. Consequently, this measurement scale can help further research to increase understanding of performance management in higher education, especially in Colombia.

C. Lebanon

According to the Ministry of Education and Higher Education, Lebanon has 41 private universities and institutes while having only one public university, the Lebanese University. Lebanon's private higher education institutions (HEIs) need clear planning and evaluation criteria to improve their performance. The framework for implementing a performance management system in Lebanon can be seen in the picture below.



According to (Al Jardali et al., 2020) it is important to update existing strategies in Lebanese private universities because university administrations can use the above framework to improve performance management culture. The human resources department should play a major role in facilitating this step by developing the necessary training plans. One important implication of this study lies in its flexibility in terms of indicator selection and the number of indicators to be used. Similar studies have not demonstrated the scorecard model in detail. The user-friendly BSC model makes it easier for academics in addition to business faculty members to truly adopt and even adapt the model to their own needs and performance measures.

D. Malaysia

Among the various components in the service sector, Private Higher Education (PHEI) is a significant contributor to the country's GDP. PHEI in Malaysia has played an important role in providing access to higher education as well as to help achieve the desired “high-income knowledge-based economy” (Abdullah, 2012). PHEI's role at that time was to “supplement and complement” state universities and this effort proved successful when the number of PHEIs increased to 521 institutions in 2007. Therefore, the Ministry of Education and Culture must measure PHEI performance using a comprehensive set of indicators that must include tangible resources and intangibles (i.e. financial and non-financial performance) such as research and teaching activities.

Measuring PHEI performance involves two critical issues. First, there must be a clear objective whether to measure PHEI financially or non-financially. Second, the dimensions of each measure must be determined because they vary depending on the purpose of establishing each PHEI. In the Malaysian higher education context, MyQuest is an example of an instrument used by MOHE to rank PHEIs according to six levels, from 1 star (poor quality) to 6 stars (excellent quality). However, it is evident that the purpose of the MyQuest rating system is not to measure performance, but to assess the current level of quality of PHEI.

The application of the BSC approach is considered a strategic management system that will assist PHEI in the process of converting intangible assets into “customer and financial

results". With BSC it is likely to overcome the problem of measuring intangible assets, such as skills, information systems and culture in PHEI and thus make it difficult for competitors to imitate. This will be a source of competitive advantage for PHEI. Furthermore, the intangible nature of organizational knowledge justifies the BSC as an appropriate method for measuring PHEI performance. The intangible nature of organizational knowledge justifies BSC as an appropriate method for measuring PHEI performance (Yaakub & Mohamed, 2020). There are 4 perspectives that are measured in performance assessment, including business processes, customers, learning and development and financial perspectives.

Of the four countries above, Indonesia will be able to implement a performance measurement system using the balanced scorecard method, especially for private universities. This performance measurement system will be useful for improving the quality and performance of universities in Indonesia

Conclusions and Suggestions for Future Research

To face increasingly competitive competition among universities, choosing the right performance measurement system could be the solution. Performance will be achieved if a university/college has strategic steps in implementing its performance measurement process. One performance measurement system that can be used to assess performance completely from various dimensions is the balanced scorecard method. BSC is defined as a set of measures that provide managers with a quick yet comprehensive view of the business. It revolutionized the way performance is rewarded in various types of organizations. Before the introduction of the BSC, top management relied only on traditional financial measures evaluation process. In addition, several studies state that rankings and accreditation do not reflect the overall performance of a university and heterogeneity among universities will mean that these rankings cannot compare performance between universities.

BSC is used as an additional measure traditional finance because it adds three additional perspectives to a financial perspective, for example customer, internal, innovation and learning perspectives. So in the BSC there are 4 perspectives that can be assessed and the resources at each university can be seen. Several countries such as Lebanon, Cambodia, Malaysia, Jordan have designed strategies, measurement indicators and prepared steps for implementing this BSC. In Indonesia, based on the literature, many have designed performance measurement systems, either using the BSC method or other methods.

However, for further research, especially in Indonesia, research will be carried out in collaboration with the Ministry of Research, Technology and Higher Education regarding the equation of assessment indicators with the BSC method. This will be very helpful to measure the performance of a university with the same indicators even though there is heterogeneity in each university.

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