

Implementation of The Balanced Scorecard Method in Determining Performance Measures in Higher Education Institutions (Case Study: ITB Swadharma)

R. Supyan Sauri, Usanto S*, Nur Sucahyo, & Adi Sopian

Education Science, Islamic University of Nusantara, Soekarno Hatta Number 530 Road, Bandung City 40286, Indonesia

Abstract

To compete in higher education, ITB Swadharma needs to enhance its competence by designing and implementing effective strategies in managing higher education that align with its vision and mission. The success of management strategy can be achieved through a comprehensive evaluation of ITB Swadharma's management effectiveness. The Balanced Scorecard method and the interaction between ITB Swadharma's management and the PMB entity's management can be used to create a Balanced Scorecard strategy map. This map involves three strategic objectives from the perspective of development and advancement of learning, three strategic objectives from the perspective of internal business process efficiency, four strategic objectives from a customer satisfaction perspective, and two strategic objectives from the perspective of financial stability. To achieve these two strategic objectives in terms of financial aspects, a lagging indicator is required. Each strategic objective from the customer perspective requires actions. Strategic Objective 1 from the internal business process perspective requires 5 measurements, Strategic Objective 2 requires 3 measurements, and Strategic Objective 3 requires 3 measurements. Meanwhile, from the perspective of learning and growth, Strategic Objective 1 requires 1 measurement, Strategic Objective 2 requires 3 measurements, and Strategic Objective 3 requires 1 lagging indicator measurement and 1 leading indicator measurement.

Keywords: ITB Swadharma; Lagging; Strategic; Indicator; Balance Scorecard

1. Introduction

ITB Swadharma is a newly established higher education institution in 2020 through the merger of two existing colleges since 1992 and 1993 in Jakarta. As one of the institutions in the region, ITB Swadharma faces intense competition, and to achieve excellence, improving the quality of education is inevitable. ITB Swadharma acknowledges that in order to succeed in the competitive field of higher education, planning and implementing effective education management strategies aligned with the vision and mission are necessary. To achieve the right management strategies, ITB Swadharma needs to conduct comprehensive performance measurements, not only in financial aspects but also in non-financial aspects.

Performance measurement is the process of evaluating and measuring the results and achievements of an entity or organization in order to reach the established goals and objectives. Performance measurement is closely related to productivity. High productivity can be achieved through good performance. However, high productivity based on low performance can occur due to chance factors, which do not guarantee organizational sustainability and consistency. Although financial aspects dominate performance measurement according to (Kaplan & Norton, 2004; Lueg, 2015), it is not sufficient because it only relies on past data and is difficult to predict for the future, thus being suitable for decision-making in a limited timeframe.

In many organizations (in this case, universities), the difficulty of measuring performance and the ambiguity of the performance measures used result in friction, where employees believe they have done their tasks well, but the overall performance of the organization is perceived to be poor (Arifudin et al., 2021; Zahara Tussoleha Rony, 2017). Inadequate performance metrics also result in ambiguous relationships between performance and compensation. As a

* Corresponding author.

E-mail address: usanto1006@gmail.com

result, employees are less motivated to work harder, the organization's overall performance declines, and it loses ground to other universities in the competitive landscape.

With performance measures tailored to the selected strategy and designed in the form of a Balanced Scorecard, it is anticipated that all sections of the organization will be able to collaborate more efficiently. With improved cooperation, it is anticipated that the overall performance of the organization, in this instance the university, will improve and it will be able to compete with other institutions.

The basic concept and strategic planning of the Balanced Scorecard (BSC) provide a framework for measuring and controlling company performance holistically. Balanced Scorecard is a strategic system that enables organizations to clarify their vision and strategy and then translate them into tangible actions. The structure of the Balanced Scorecard consists of four components: Financial, Customer, Internal Business Processes, and Learning and Growth. Therefore, the determination of performance indicators should be based on the four perspectives of the Balanced Scorecard strategic plan (BSC).

Research by Kaplan and Norton in Fauzi & Nugroho A. (2020) (Muliadi et al., 2018; Sinaga & Sinuraya, 2019) stated that the financial challenges faced by most companies include revenue growth, minimizing expenses or costs, productivity growth, facility utilization improvement, and risk reduction. This helps establish an important relationship between the four perspectives of the Balanced Scorecard. In addition to ensuring customer satisfaction, business unit leaders are also required to translate the company's mission and strategies into specific goals that are appropriate for specific markets and customers.

Another research by (Alimudin, 2017; Istiarsono, 2022; Rony, 2020) define performance measurement as "the aspects of work and outcomes to be achieved by an individual, in the form of goods, products, or services, used as a basis for evaluating an employee or work organization, and reflecting knowledge of employee reflection." According to (ISMAL, 2020; Maarif & Kartika, 2021), performance measurement is "a process used by an organization to evaluate the performance of each individual employee to assess the success of various human resource policies". This research aims to provide a proposed performance measure for assessing the implementation of strategies for universities that are the object of research by referring to the Balanced Scorecard model.

2. Literature Review

2.1. Measurement of Balanced Scorecard in Strategic Management

Balanced Scorecard (BSC) is a management technique used to measure and manage organizational performance by taking into account a number of crucial factors. In evaluating organizational performance, BSC emphasizes on four key perspectives (Hery, 2017).



Figure 1. BSC as Strategic Management

Balanced Scorecard can be associated with strategic management through three main principles, namely:

- a) Cause-and-effect relationship: This principle refers to the clear linkage between various objectives and measures in the Balanced Scorecard. The measurement system should be able to depict explicit relationships through if-then hypotheses. This allows for appropriate management and validation.

- b) Factors influencing performance: This principle emphasizes the importance of identifying the factors that determine organizational performance. Improving performance in business units cannot be achieved if goals such as quality, customer satisfaction, innovation, and human resource development are not considered top priorities. The Balanced Scorecard should continue to focus on tangible outcomes, particularly related to financial aspects such as return on capital employed (ROCE) or economic value. Each Balanced Scorecard metric should have a rationale and impact on the company's financial goals.
- c) Connection with financial issues: This principle highlights that the Balanced Scorecard should have a close connection with the company's financial issues. This involves emphasizing goals related to financial outcomes, such as ROCE or economic value added.

Table 1. General steps for the 4 perspectives of the Balanced Scorecard (BSC)(ISMAIL, 2020)

Perspective	Generic Measures
Financial	Focuses on ROI and economic value
Customer	Emphasizes customer satisfaction, retention, and generated market share
Internal	Involves aspects such as quality, responsiveness, cost control, and product innovation
Learning and Growth	Describes the importance of employee satisfaction and the availability of information systems that support organizational growth

Cause-and-effect relationships can be expressed through a series of if-then statements. The measurement system should depict the relationships between assumed objectives from different perspectives, which need to be managed and validated. When business units have comprehensive goals such as quality, customer satisfaction, innovation, and employee empowerment, it becomes more challenging to achieve business improvement goals. The Balanced Scorecard should maintain a focus on outcomes, especially financial outcomes such as return on capital employed (ROCE) and economic value. The cause-and-effect relationships of all scorecard measures should be linked to the company's financial goals (Roza et al., 2022; Sumardi & Efendi, 2021). The structure and design of the Balanced Scorecard should be balanced. To design a Balanced Scorecard, five elements are needed: action ideas, strategic relationship model (strategy map), description of strategic objectives, metrics, and performance targets. According to (Kefe, 2019; Roza & Supriyati, 2022), the Balanced Scorecard is an example of a four-dimensional performance indicator for organizations, which can identify short-term and long-term goals, desired outcomes, performance-influencing factors, and performance targets, as well as effective solutions.

2.2. Strategic Mapping

In the Balanced Scorecard, there are four perspectives, namely the financial perspective. When measuring company performance, the three industry development phases classified by (Kaplan & Norton, 2004) are considered: Growth, Sustainability, and Profitability. Each phase has different goals and focuses for each measurement. Unlike (Cohen et al., 2018), the Balanced Scorecard measures financial performance using ratio analysis metrics such as return on assets (ROA) to return on equity (ROE). According to (MacLennan, 2010), the following measurements can be used in the customer perspective, as cited in (Yateno, 2015): (1) customer loyalty, (2) on-time delivery, (3) customer complaints, (4) revenue, (5) customer acquisition, and (6) customer profitability in internal business processes. According to Riyana (2017), there are several measures that can be used in the growth and learning perspective, including: (1) employee productivity, (2) employee satisfaction, (3) employee training, (4) number of suggestions, and (5) research and development. When designing a Balanced Scorecard, one of the most important components is the strategy map or strategic relationship model. The Balanced Scorecard was developed in response to the limitations of financial measurement systems in extracting value from intangible assets. This strategic relationship model depicts the cause-and-effect relationships between Balanced Scorecard perspectives.

2.3. Maintenance Lag Indicators (efficiency measures) and Lead Indicators (efficiency factor measures)

To achieve the company's vision and mission, strategic objectives must be translated into measurable indicators based on the chosen strategy. To measure the success of strategic achievements, two types of measurements need to be established, as explained by (Schrage & Kiron, 2018): (1) Lag indicators (performance measures): These are metrics that depict the outcomes or results that indicate the level of success in achieving strategic objectives. (2) Lead indicators (performance indicators): These are measures that indicate the causal factors or contributions to achieving the outcomes.

These activities demonstrate how effectively the chosen strategic initiatives can contribute to the attainment of strategic objectives. The difference between lagging indicators (performance indicators) and leading indicators (performance indicators).

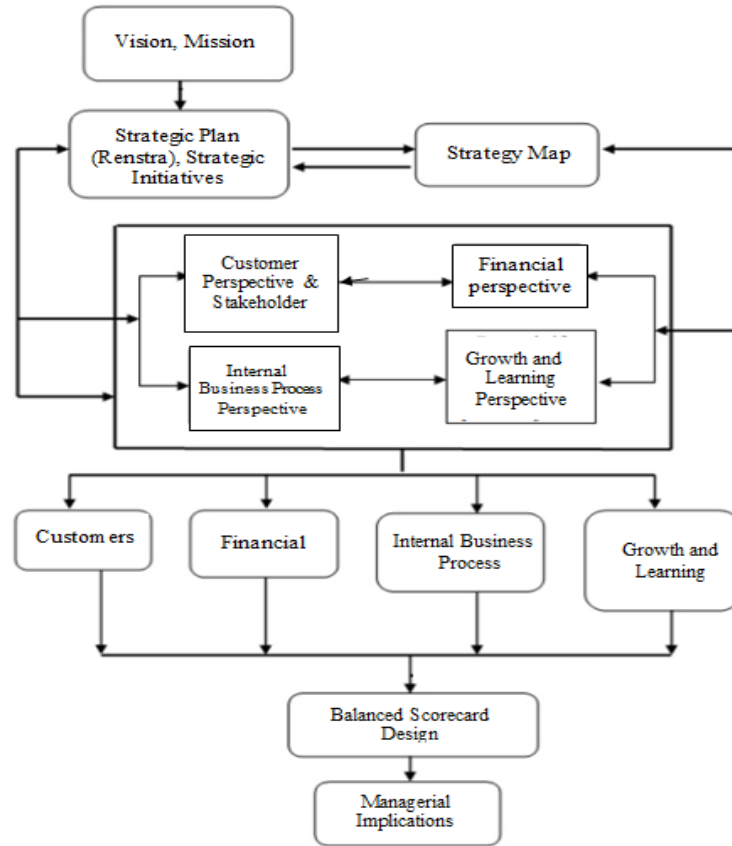


Figure 2. Strategy MAP

Table 2. Difference Lag Indicator dan Lead Indicator

	Performance measurement	Power Driver Meter (Power Driver Meter or Key Performance Indicator)
Definition	measures that depict the success of achieving strategic objectives include	measures that indicate the causes or drivers of achieving outcome measures include:
Example	a. Market Share b. Sales c. Employee Satisfaction d. Value Added e. Customer Retention for Employees	a. Hours spent with clients b. Number of written project proposals (Jumlah proposal proyek tertulis) c. Employee turnover d. Ratio of strategic job e. Percentage of customers switching to non-customers
Characteristics	These measurements have characteristics related to history and are conducted at the end of a specified period of time. This data can be easily recognized and collected	In general, these measurements focus on intermediate processes and activities and have a predictive nature in identifying the reasons or factors behind the achievement of performance measures

3. Research Method and Materials

In this study using descriptive qualitative analysis methods, namely qualitative data analysis is induction, namely an analysis based on the data obtained, then developed into a hypothesis. In general, it consists of three lines of activity that occur simultaneously, namely data reduction, data presentation and data verification (conclusion drawing).

3.1. Location and Time of Research

The research was conducted at ITB Swadharma Jakarta. The research began in April 2013 with the stages of observation, problem identification, and literature review. Data were collected and processed during the period of May-June 2023, while the discussion and analysis phase took place in July 2023.

3.2. Data Collection and Data Processing Techniques

The respondents involved in the initial data collection encompass various aspects such as the profile and overview of ITB Swadharma, vision, mission, core values, organizational structure, business areas, funding sources, human resources, and infrastructure. Among them are the rector, vice rector I (academic and student affairs), and vice rector II (finance, personnel, and admissions). On the other hand, information regarding the general overview and profile, vision, mission, and core values of the business unit led by the New Student Admission Unit (PMB) is gathered from respondents such as the vice rector II, deans, program coordinators, secretaries, and department heads. Additional information required includes the number of new students and active students, total sales, user satisfaction surveys, promotions and publications, as well as collaborations with relevant parties and companies specializing in the field.

4. Results and Discussion

Information sources related to the overview and certain sections regarding the vision, mission, objectives, and core values of ITB Swadharma, including the strategic plan of the PMB unit, are processed and presented in the four perspectives of the Balanced Scorecard, visualized accordingly. Subsequently, the cause-and-effect relationships between the strategic plans in each perspective are analyzed. The findings and analysis from this research will be used to create a strategy map. The process of creating a strategy map begins by establishing the strategic planning from the perspective of learning and growth at the foundational level, followed by the strategic plans from the perspective of internal business processes at the national level. Then, the strategic planning is placed from the customer perspective, and at the top level is the strategic planning from the financial perspective. These strategic plans are interconnected, discussed, and debated with the leaders of Swadharma unit and PMB ITB Swadharma to ensure their relevance and achieve comprehensive and coherent strategic goals. However, strategic objectives developed by ITB Swadharma do not hold significant meaning without measurement of their achievements. The measurements are divided into two categories: lagging indicators and leading indicators.

Data collection and processing of company summary data. In order to meet the society's demand for higher education, ITB Swadharma admits new students every year. The graph below shows the number of active students and graduates of ITB Swadharma.

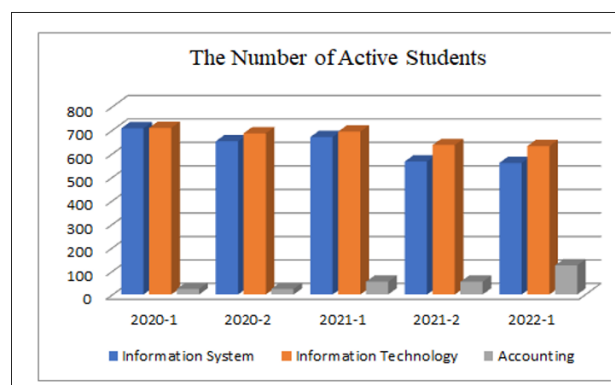


Figure 3. Active Students

Based on the data illustration above, it can be observed that during the three academic years from 2020/2021 to 2022/2023, there was a declining trend in the overall number of active students. However, in the following three semesters, there is a tendency of increase, although it has not reached the same initial number.

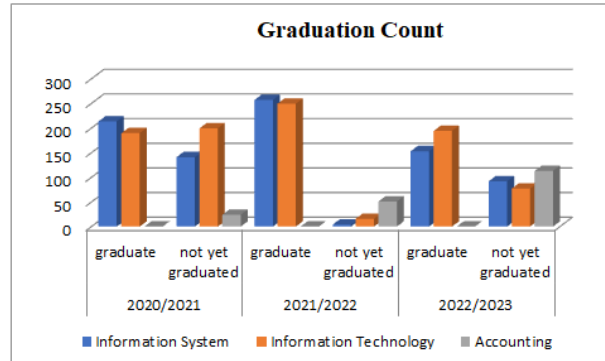


Figure 4. Graduates of the Last 3 Years

In the data illustration above, it can be seen that the number of graduates during the three academic years from 2020/2021 to 2022/2023 fluctuates. Although there is an increase in the last two semesters, the number is still not as high as the pre-pandemic semesters.

4.1. General Description of the New Student Admission Unit (PMB)

The main tasks of the new student admission division at ITB Swadharma include: (1) Planning and implementing all promotional activities such as school visits, participating in education exhibitions, distributing brochures, displaying banners, and so on. (2) Preparation of registration procedures, checking administrative data of prospective new students, and conducting selection and testing. (3) Ensuring that each new student is given a student number and institutional attributes such as an alma mater. (4) Organizing "Welcome Student" events and providing orientation materials to new students. Figure 3 above shows that during the three academic years from 2020/2021 to 2022/2023, the number of new student admissions, transfer students, and continuing studies has tended to change.

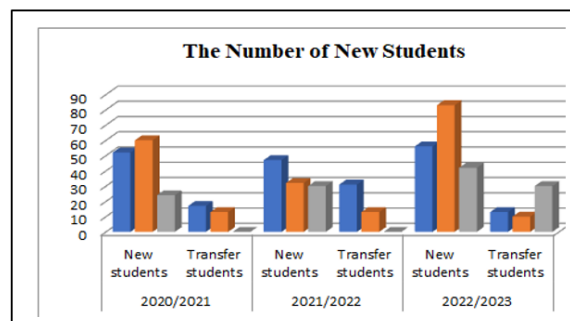


Figure 5. New Student Admission

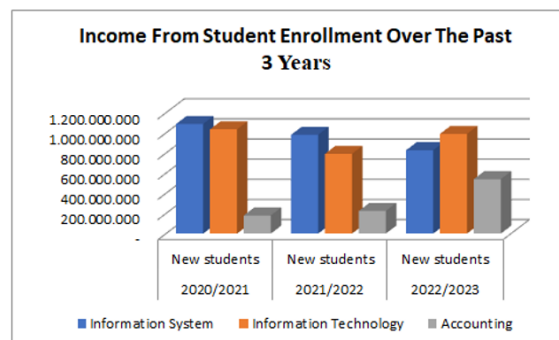


Figure 6. Revenue from New Student Admission

The above image shows an overall decrease in admission rates during the last three years of the study. This phenomenon is supported by an increase in student admissions in the undergraduate accounting program.

4.2. Analysis and Evaluation of Planning and Implementation of the Balanced Scorecard (BSC)

The process of designing and developing the Balanced Scorecard in the New Student Admission Division (PMB) of ITB Swadharma involves the following steps:

- a. Identification and mapping of the Vision, Mission, and Core Values.
- b. Development of the Strategic Map as a result of the mapping process.
- c. Elaboration of Strategic Objectives within each Balanced Scorecard perspective.
- d. Determination of lagging indicators (KPIs) and key indicators for specific strategic objectives.

The vision of ITB Swadharma, which focuses on becoming a leading higher education institution in the field of technology and business at the national level by producing competitive and technology-oriented entrepreneurial graduates, is then translated into four Balanced Scorecard perspectives.

Table 3. Mapping the Vision in the Balanced Scorecard

BSC Perspective	Vision
Financial	-
Customer	National Level
Internal Processes	Technology and Business
Learning and Growth	Institute

The mission of ITB Swadharma includes the following:

- a) Providing technology and business education with a critical, creative, and innovative thinking approach.
- b) Conducting and publishing research outcomes and other scientific activities for the development of technology-based business world in the field of Information and Communication Technology.
- c) Organizing professional community service that is beneficial to society.
- d) Facilitating seminars, workshops, and training activities both internally and externally for institutional development purposes.
- e) Establishing collaborations with other institutions/universities through national networks.

This mission is represented through 4 perspectives in the Balanced Scorecard, as depicted below.

Table 4. Map the Mission in the Balanced Scorecard

BSC Perspective	Mission
Financial	-
Customer	National scope of technology and business world
Internal Business Process	Scientific and professional higher education in the field of technology and business
Learning and Growth	Scientific and professional

The establishment of ITB Swadharma aims to support the government in the national education and teaching sector, particularly in the context of higher education, as well as to advance the personality and character of the Indonesian nation through an entrepreneurial approach. This statement is reflected through four aspects in the Balanced Scorecard.

Table 5. Map the Objectives in the Balanced Scorecard

BSC Perspective	Objectives
Financial	-
Customer	Efforts to develop the behavior and habits of Indonesian society with a spirit of technopreneurship
Internal Business Process	Learning and teaching processes in higher education institutions
Learning and Growth	Providing support to the government in the national education and teaching sector

The New Student Admission Unit (PMB) fully reflects the more detailed vision and mission of ITB Swadharma. However, the PMB unit has core values or mottos that focus on providing information services to the higher education system of ITB Swadharma through a team that works creatively and independently. These core principles can be found in the four perspectives of the Balanced Scorecard.

Table 6. Mapping the core values of the PMB unit

BSC Perspective	Core Values
Financial	-
Customer	Creative information services, providing information in an innovative and creative manner in service
Internal Business Process	Teamwork or working together as a team
Learning and Growth	Independence

4.3. Strategic Map of the PMB Unit in the Balanced Scorecard (BSC)

The strategic map is created by identifying cause-and-effect (if-then) relationships between matrix components within each perspective and between matrix components in higher-level perspectives. To ensure the proper placement of matrix components, the if-then principle is used. If the arrangement of matrix components is similar, only one matrix component is displayed. If additional matrix components need to be added as connectors when linking matrix components to others, this is allowed as long as it is approved by their neighbors. The constructed strategy map is shown in the following diagram.

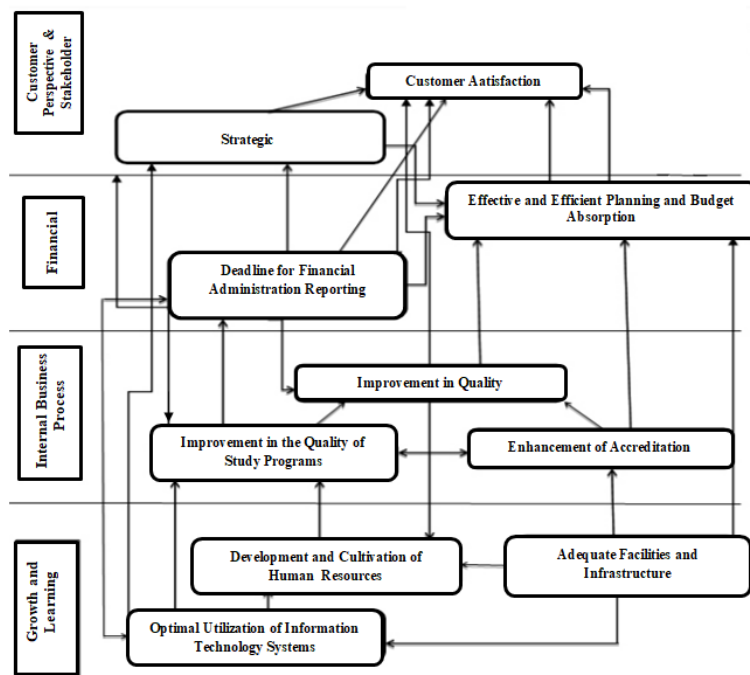


Figure 7. Strategic MAP of ITB Swadharma Balanced Scorecard

4.4. Description of Strategic Targets for the PMB Unit

Strategic targets for each perspective can be found in the following strategy map: In the learning and growth perspective, there are 3 strategic objectives as follows: (1) Improving resource efficiency in higher education. (2) Encouraging personal development with an independent and professional mindset. (3) Providing reliable information services. In the internal business process perspective, there are 3 strategic objectives as follows: (1) Building a professional business school. (2) Enhancing the quality of academic, financial, and administrative services for students. (3) Supporting team collaboration with appropriate and accurate information systems. From the customer perspective, there are 4 strategic objectives: (1) Enhancing institutional reputation at the national level. (2) Cultivating the personality and character of the Indonesian nation through technopreneurship. (3) Providing highly creative information services to improve service

quality for customers. Meanwhile, from the financial perspective, there are 2 strategic objectives as follows: (1) Improving employee performance and well-being, and (2) Increasing the number of enrolled students

4.5. Determine additional indicators (outcome measures) and key indicators (performance measures)

Lagging indicators (effectiveness measures) are the bottom line achieved for each strategic objective in each perspective. Key indicators are intermediate outcomes used to monitor the progress of programs and the implementation of activities to achieve the established objectives. When measuring performance against the financial perspective, the first strategic objective is to increase profit and employee well-being. The lagging indicator is compensation increase (salary and honorarium), while the leading indicator is the increase in ITB Swadharma's revenue. Another strategic target is to increase the number of students. The lagging indicator is the percentage increase in the number of students. When measuring performance from the customer perspective, the first strategic objective is to enhance institutional reputation. The lagging indicator is the number of national/international academic achievements related to the Tridharma of Higher Education, while the leading indicator is the number of participations in various competitions, exhibitions, and events related to the Tridharma of Higher Education. Another strategic target is national higher education.

The lagging indicator is the nominal value of cooperation agreements/memorandums of understanding with domestic (local/national) and foreign (international) entities, while the key indicator is the extent of agreements with domestic and foreign entities. The third strategic objective is to produce graduates with techno-entrepreneurial skills. The lagging indicator is the increase in the proportion of entrepreneurs who have completed ITB Swadharma. The fourth strategic objective is creative information services and customer satisfaction. The lagging indicator is the score of ITB Swadharma Service Customer Satisfaction Index, while the key indicator is the score of ITB Swadharma Service Customer Satisfaction Index. When measuring performance from the internal business process perspective, the first strategic objective is scientific and professional higher education. Lagging indicators include average GPA improvement, increase in the proportion of timely graduates, increase in working time, increase in the number of research published in accredited and internationally reputable peer-reviewed journals, and increase in satisfaction index among employers of graduates. Key indicators include average graduate value, percentage of graduates within the standard study period, waiting time for job placement, publication of research in national and international journals, and satisfaction index among employers of graduates.

Other strategic targets include improving the quality of higher education, finance, and student management services. Lagging indicators include the increase in student satisfaction index for academic, financial, and student management services, while the key indicators are student satisfaction index for services received during the study period, financial information, and student management. The third strategic objective is to strengthen teamwork with the support of appropriate and reliable information systems. Lagging indicators include the increase in service completion time, increase in team satisfaction score for services, and percentage of complaints resolved in a timely manner. Key indicators include service duration, employee satisfaction score for services, and the number of issues/complaints resolved.

In measuring performance from the learning and growth aspect, the main strategic objective is to manage higher education by maximizing the utilization of existing resources. Other indicators include increasing the level of accreditation in each study program and educational institution, while the key indicator is the accreditation points obtained in each study program. Another strategic target is achieving independent, scientific, and professional activities in the PMB unit. Lagging indicators include an increase in the percentage of employee participation in the PMB, an increase in the satisfaction index of customer service, and an increase in the number of new students. Important key indicators include the level of employee participation in the PMB, the satisfaction score of customers with PMB services, and the number of new students. The third strategic objective is to provide accurate and adequate information services. The lagging indicator is the percentage increase in the number of computers and devices with adequate specifications and connected to the local or wide area network (Internet), while the key indicator is the quantity of computers and devices connected to the local area network or wide area network.

5. Conclusion

The following are the results obtained from the development of the strategic map for ITB Swadharma: 2 strategic targets from the financial perspective, 4 strategic targets from the customer perspective, 3 strategic targets from the internal business process perspective, and 3 strategic targets from the learning and growth perspective. Lagging indicators and key indicators are needed for the first and second strategic objectives from the financial perspective. The first, second, third, and fourth strategic objectives from the customer perspective each require actions. The first strategic target from the internal business process perspective requires five measures. The second strategic target from the internal business process perspective requires three measures. The third strategic target from the internal business process perspective requires three measures. The first strategic objective from the learning and growth perspective requires action. The second strategic objective from the learning and growth perspective requires three actions. The third strategic objective from the learning and growth perspective requires the measurement of lagging indicators and key indicators.

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