

**DEVELOPING PERFORMANCE MEASUREMENT MODEL FOR EDUCATIONAL IN HOSPITAL BASED ON BALANCED SCORECARD****Lilik Lestari [✉], Joko Widodo, Maman Rachman, P. Eko Prasetyo**

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*Keywords:**Hospital Performance,
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This study is aimed to: (1) identify performance measurement model hospitals as educational institutions that have been implemented (2) produce a design model of hospital performance measurement as an educational institution base on the balanced scorecard, (3) analyze the effectiveness of the performance of the developed measurement model. The research model and development is carried out in the Hospital Pulmonary dr. Ario Wirawan Salatiga. Subjects were apprenticeship program participants, apprenticeship supervisor and hospital employees. Qualitative and quantitative data were collected to be analyzed using descriptive statistics and accuracy test model. The results of research and development show that (1) model of hospital performance measurement as an educational institution that is used today is the Government Performance Accountability Report; (2) the result of the model that is based on the Balanced Scorecard performance measurement shows that the development of indicators of customer perspective is customer satisfaction, customer loyalty, relationship quality, trust and customer acquisition; the development of financial perspective is accountability, economic ratios, the ratio of the efficiency and effectiveness ratio; the development of internal business process perspective is quality assurance, quality of facilities - infrastructure, innovation, patient preference, outpatient visits and hospitalization and use of the bed; and the development of learning and growth perspective is the instructor competence, job satisfaction, organizational commitment, work motivation, employee retention and employee productivity (3) The effectiveness of the measurement model that is developed is ability to provide a comprehensive framework to describe the hospital's vision and mission as an educational institution.

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INTRODUCTION

Facing higher competition, the measurement of hospital performance in educating future health professionals becomes an important role for the progress of the organization. The results become evaluation issues for the management to improve the organizational performance. This is because the hospital is required to perform continuous quality improvement in the delivery of health services. It is essential for the proper performance measurement models to produce accurate information.

The results of the initial survey in this study showed a measure of success in Lung Hospital dr. Ario Wirawan Salatiga in providing educational services for prospective health workers is still limited in quantitative terms alone. The performance measures used are still not comprehensive, coherent, balanced and measured. Achievements of performance indicators are measured by the numbers of students who do an internship, research, training, Education Program Specialist Doctors Lung; library visitors; earned revenue; and book donations. While the qualities of the education and trainings of human resources can only be seen from the increasing number of institutions and student(s) who perform(s) work practices, and the number of trained human resources both from inside and outside the hospital.

Based on the identification problem, the research question is: how is the hospital performance measurement model as an appropriate educational institution? Therefore, it is necessary to conduct a research to develop a model of hospital performance measurement as an educational institution from the existing models, because there has been no such research before. From the result of theoretical studies, it is known that the model of the Balanced Scorecard designed by Kaplan and Norton (1992) is considered the most comprehensive for performance measurement, because it is able to translate the vision, mission and strategy of the organization into an integrated set of performance measures. In the Balanced Scorecard, the performance improvements of the financial perspective derived from non-financial aspects of the customer perspective, internal business processes and learning perspective - growing. Mulyadi (2007) stated Balanced Scorecard has an advantage in motivating personnel to think and act strategically viewed on oriented long

term, generating a total of a comprehensive business plan and generate measurable strategic goals.

The results of several research studies reinforce the use of the Balanced Scorecard as a performance measurement model. Fontanella and Andriani (2009) describe the Balanced Scorecard can be used to measure the performance of high level of educational institutions. Susilo's research (2007) showed college performance can be measured through the Balanced Scorecard approach. Surtopo's study (2009) shows the Balanced Scorecard is an effective tool that is used to evaluate the performance of educational organizations. Karathanos and Karathanos (2005) describe the concept of Balanced Scorecard on education consists of six categories: student learning, stakeholders focus, financial-markets of unemployment, institutions and staff, the effectiveness of organizations, and social governance. Dally's research (2010) describes the measurement of educational performance management system using the Balanced Scorecard management system.

However, there are differences in the results of the implementation of the Balanced Scorecard in the company. Rangkuti (2013) states that the Balanced Scorecard that is integrated with a variety of business strategy methods can improve the performance of the company significantly. However, in some companies, failure happened. Sumarsan (2010) explains that the facts show the Balanced Scorecard brings success for many companies. However, there are companies that failed, and a loss of material, time, and chance is not small.

Based on the research problem and the research gap of implementation of the Balanced Scorecard, the objectives of this study are: 1) identify the model of hospital performance measurement as an educational institution that has been used so far; 2) produce a design model of hospital performance measurement as an educational institution based Balanced Scorecard; and 3) analyze the effectiveness of the developed model.

RESEARCH METHOD

This research used linear models of Research and Development Approach that are widely used for educational purposes (Putra, 2012). As described by Borg and Gall (1983) the educational research and development is a process used to develop and

validate products using education and learning. Conceptually, research and development refer to the 10 steps of Borg and Gall (1983), namely: conducting a preliminary study, conducting field study, research design development, developing research instruments, developing a conceptual model, validating conceptual models, revising the conceptual model, conducting field conceptual model test, refining model(s), and preparing research reports. In the initial study phase, the researchers conducted a series of theoretical studies, previous research and empirical studies through questionnaires, observations, interviews, and discussions with experts to get the designs of the conceptual model of performance measurement. Research subjects comprised 64 apprentices, 11 apprentices supervisor, 11 heads of installation, and 82 permanent employees of Lung Hospital dr. Ario Wirawan Salatiga, with a simple random sampling and census techniques. Data were analyzed using validity and reliability tests of research instrument, test of accuracy model and descriptive statistics.

RESULTS AND DISCUSSION

Factual Model of Hospital Performance Measurement as Educational Institutions

Based on the secondary data obtained from the hospital, the condition of the factual model of hospital performance measurement as an educational institution shows that the hospital has had a Government Agency Performance Accountability Report (LAKIP) using standard performance measurement of government health services, referring to the Minister of Health Regulation No. 2416 / Menkes / PER / XII / 2011. Performance measurement is done by comparing the achievement of the actual performance with the aimed the targets, also by comparing the actual performance achievements of the current year and the previous year.

The performance measurements can be grouped into four aspects, namely:

Customer Aspect, with its strategic goal of increasing the number of apprentices and trained human resources from outside the hospital. The assessment components used the indicators of the

number of students who do apprenticeship and the number of doctors joining Education of Doctor Lung Specialist Program, who practices at the hospital.

Financial Aspect, with its strategic aim of improving the partnership program services to institutions conducting apprenticeship at the hospital. The component indicator is the amount of income earned.

Business Internal Process Aspect, with the goal of increasing the sustainable competitive strengths of hospitals. The Indicator of success is the number of visitors to the hospital library.

Learning and Growing Aspect, with its strategic goal to increase the capability and quantity of human resources through education, training and recruitment. Measurement indicators include the number of medical research, the number of employees who participate in education, training, technical assistance, seminars, and workshops.

Factual model of hospital performance measurement as educational institutions can be described in Figure 1.

The results of observations about apprenticeship in the hospital shows the process begins with an apprentice license application from colleges and schools who have made the memorandum of understanding with the hospital. Furthermore, participants do an internship in the hospital for 1 to 2 months as needed. At each attendance at hospital, trainees are required to fill out the attendance list that has been prepared. Apprentices are required to attend a minimum of 75%, if less then required to repeat until the requirement is met. At the end of the internship period the students are required to make assignments and exams. For example, specialist candidates, are required to make journal reading, presentation of cases or case reports, and conduct health services accompanied by the respective instructor. Apprentices from diploma examinations conducted at the end of the internship, while still getting the supervision of lecturers from the sending institution. The results of the test will determine pass or repeat apprentices. Apprentices who have passed, the hospital will provide a list of values to the organization applying.

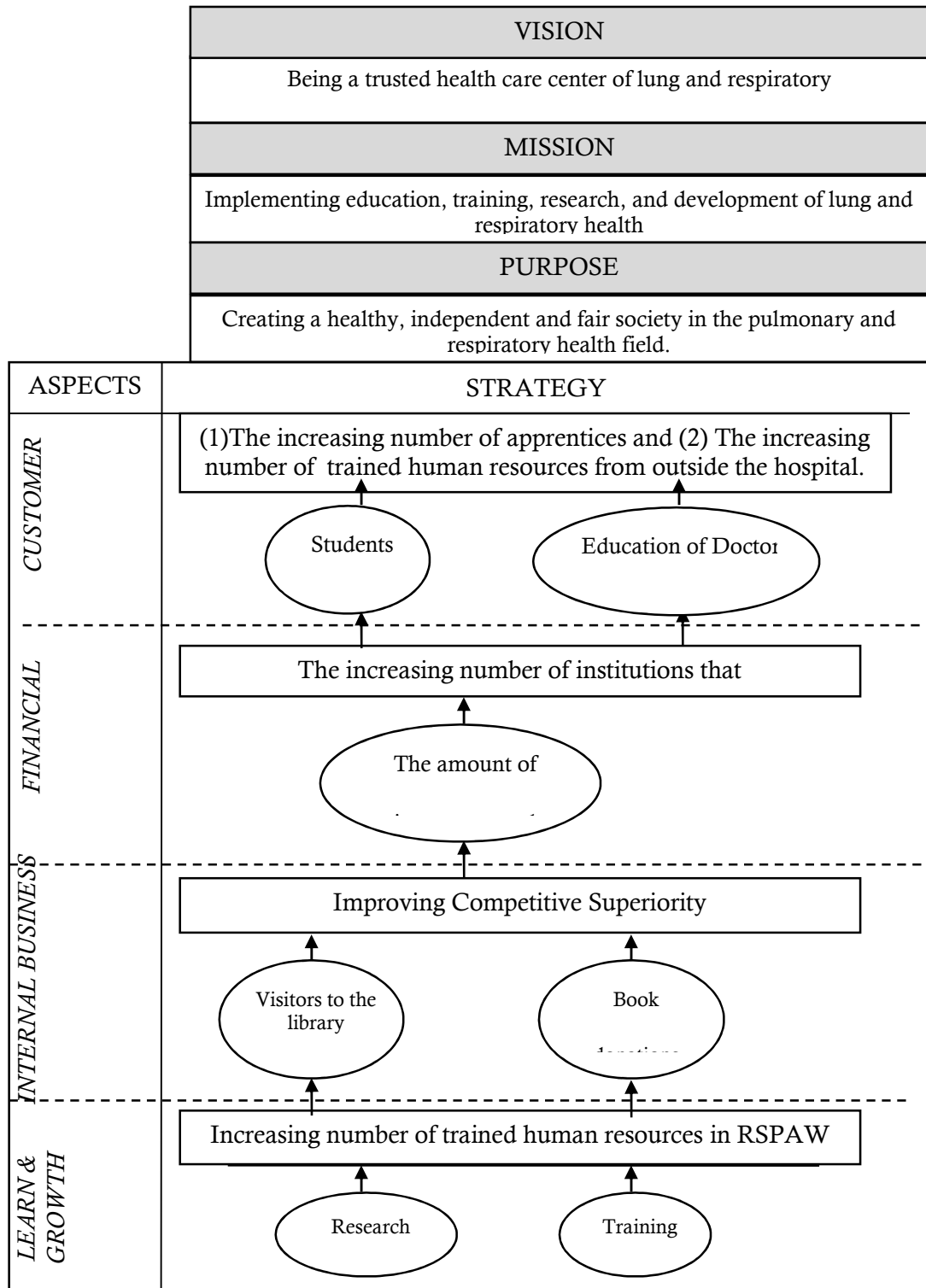


Figure 1. Factual Model of Hospital Performance Measurement As An Educational Institution

Final Model of Hospital Performance Measurement for Educational Institutions

Factually, the hospital performance measurement model has limitations, that it is still limited in terms of quantity achievement, but not yet comprehensive, coherent, balanced and measured. This was strengthened from interview result with the

head of training hospital, who declared that the performance indicators are still ineffective thus the performance report just covers the financial aspects. Supposedly performance in education is more oriented to quality results and customer satisfaction. The results of preliminary observations indicated that the model used has not fulfilled the functions of

implementing hospital functions as education, training, research and development to anticipate the development of science and technology, the changing patterns of disease, and the demands of an increasingly complex society. In addition, performance measurement model also has not measured the instructors' competency and institutions satisfaction of those having cooperation with the hospital. Therefore, a development by adding qualitative measurement instruments on the aspects of human resources' behaviors is needed.

The results of the need analysis showed that the apprentices are adults which means that the appropriate learning process is being involved in working; trainees have a relatively short time in the educational process in the hospital so it is necessary to optimize the available time; the learning process is influenced by the competency of each participant so more intensive discussions are necessary, and intellectual-emotional factors have influence on participants that it is necessary to create a conducive atmosphere and behavior so the optimal learning outcomes can be achieved.

After going through the stages of research and development which include preliminary studies by doing a relevant theory study, compilations of the previous research results, information gathering about the required performance measurements, thus resulting on a conceptual model of hospital performance measurement as an educational institution with Balanced Scorecard based.

The conceptual model of the content validity test was done through the professional judgment of two experts using the Gregory's formula (2013). Expert test results showed a coefficient correlation of 0.91, which means that the instrument used has a strong, valid, accurate, meaningful, and useful relevancies. Based on focused group discussions with experts, the model was revised by adding some performance indicators which that generated hypothetical model.

The hypothetical model is then performed in initial field tests, construct validity and reliability tests with SPSS 16 software, final field tests, and also accuracy test model using Amos 5 software. The final model of hospital performance measurement as an educational institution based Balanced Scorecard contains four interconnected perspectives, as follow:

The customer perspective, with the strategic target of providing competitive services. The

indicators of success include: satisfaction, loyalty, trust apprentices, relation quality, and customers' acquisition.

The financial perspective, with its strategic target of managing accountable budget responsibly. The success of financial management is measured through profit adjustments earned with the value of the gained cost, economy ratio, efficiency ratio, and effectiveness ratio.

Internal business process perspective, with its strategic goal of developing long-term competitive superiority that come from service and process qualities. The measurements used include internal quality assurance, qualified infrastructure, innovation, the analysis of the needs of patients, outpatient, inpatient and bed occupancy.

Learning and growth perspective, with its strategic goal of developing the capability or ability of human resources involved in the implementation of internship process of health personnel intern candidates. This perspective of performance measurement include trainer competence, job satisfaction, organizational commitment, work motivation, employee retention and employee productivity.

The final model of hospital performance measurement as an educational institution can be explained in Figure 2.

The observation results about the hospital apprenticeship/ internship programs shows that the process is preceded with an apprenticeship request from colleges and schools that have made the memorandum of understanding with the hospital. The next process is participants do an internship in the hospital for 1 to 2 months as needed. At each day attendance at the hospital, the apprentices are required to fill out the attendance list that has been prepared. Interns are required to attend a minimum of 75% presence. If less than that, they are required to repeat until the requirement is met. At the end of the apprenticeship period, the apprentices are required to make assignments and take exams. For example, specialist interns are required to make journal reading, case presentations or case reports, and conduct health services accompanied by the instructors. Apprentices from diploma programs will be tested at the end of the apprenticeship, while still getting the supervision from lecturers of their institution.

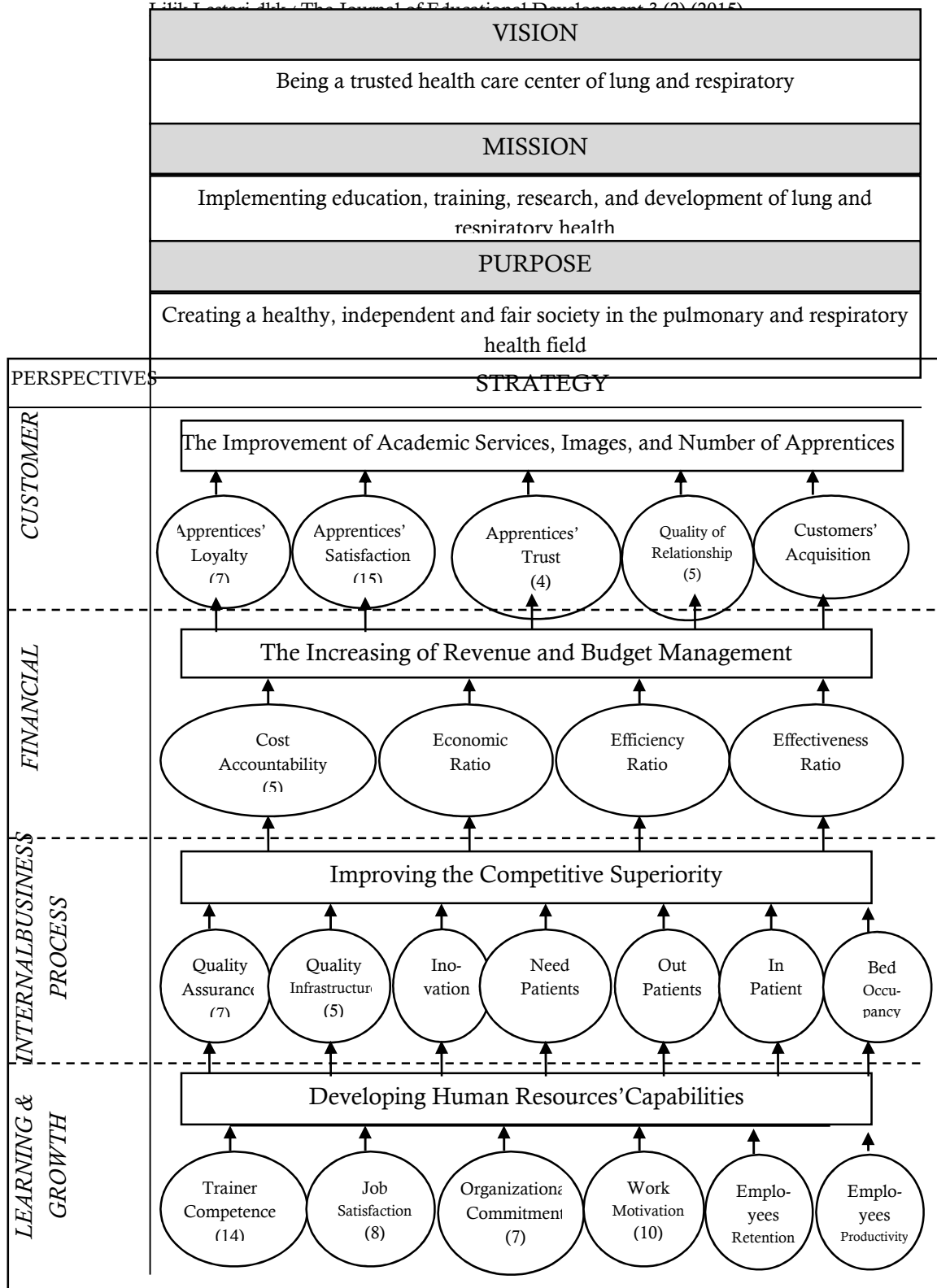


Figure 2. Final Model of Hospital Performance Measurement As An Educational Institution Based On Balanced Scorecard

The results of the tests will determine apprenticeship program. The hospital will give whether the apprentices pass or repeat the the grading to the institutions once the

apprentices have passed the tests. Figure 2 explains the key performance indicators that are used in the performance measurement that is at the customer's perspective, the primary data used in apprentices satisfaction are 15 items, apprentices loyalty 7 items, quality relationships 5 items, trust apprentices 4 items, while the secondary data is used for customer acquisition. In the financial perspective, the primary data for accountability are 4 items, while the secondary data are used for economic ratio, efficiency ratio, and effectiveness ratio. In internal business process perspective, the primary data for quality assurance are 5 items, quality facilities and infrastructure 5 items while the secondary data are used for innovation, patient needs, outpatient, inpatient visits, and bed occupancy. In learning and growth perspective, the primary data for the competence of instructors are 14 items, job satisfaction 8 items, organizational commitment 7 items, work motivation 10 items, while the secondary data are used for employee retention and employee productivity.

The results of descriptive statistics for the Balanced Scorecard shows that in the customer perspective, the indicators of customers' satisfaction, customers' loyalty, and customers' confidence are categorized high while indicator of the quality of relationships is very high in the category. For the financial perspective, the indicator of education cost accountability is categorized high. In the internal business process perspective, the indicator of quality assurance is included in the medium category while infrastructure quality indicator is included in the low category. For learning and growth perspective, the indicators of job competence, job satisfaction, and organizational commitment are categorized high while the indicator of work motivation is included in very high category.

Measurement Model Effectiveness

Based on the results of empirical model testing, it is known that Balanced Scorecard is effective to be used as a performance measurement model for a hospital as an educational institution, those are:

Comprehensive, that is broadening perspectives covered in strategic planning, which previously only limited to the financial perspective, now extends three other perspective, namely customers, internal business processes, and learning and growth in government hospital organization.

Coherent, means that the generated strategic plans bring major impacts on the following planning process that is the program and budget compilation, which is used to describe the long-and short terms of revenue plans.

Measured, which successfully translating the measurability of strategic targets generated from the system of strategic planning.

Balanced, which not only emphasizing on the financial quantitative aspect, but also qualitative and non-financial aspects. The hospital is a type of non-profit organization that does not put profit as a key performance measurement, but services in the health field.

The effectiveness of hospital performance measurement model as an educational institution for prospective health workers based on Balanced Scorecard is a developed performance measurement model that is able to provide a comprehensive framework to describe the hospital's mission "to undertaking education, training, research and development of the lung and respiratory health" into targets strategic. This is because the Balanced Scorecard uses four interconnectivity yet inseparable perspectives. The comprehensive and coherent strategic plans provide a comprehensive and coherent ease and clarity for future programming. With a Balanced Scorecard based measurement model, a strategic planning result in various initiative strategies that clearly demonstrate the targeted objects, the measurement of the target achievement, information about the performance triggers, and targets to be achieved within a certain time in the future.

Performance measurement model based on Balanced Scorecard will be effective in its implementation, due to the following factors:

Balanced Scorecard has been clearly defined, especially in non-financial perspective.

This perspective is a key indicator that provides satisfaction for the stakeholders in the future.

Definition of the matrix measurement of the non-financial perspective is sufficient causing easy measurements. Financial metrics associated with numbers, and non-financial metrics have been given basic standard.

The existence of an integrated system from top management level to subordinates so the real improvements of programs are identified.

Quantitative relationship between financial perspectives with a non-financial perspective can be measured well.

CONCLUSION

Performance measurement model based on Balanced Scorecard can be used as a model of hospital performance measurement as an educational institution of prospective health workers, because all aspects can be measured comprehensively. Strategic targets on the customer's perspective are students and capital stakeholders; financial perspective is the cost of accountability; internal process perspective is the productivity and the effectiveness of the process cost; learning and growth perspective are the human capital, information capital and organizational capital.

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