

## **Economic Models of Healthcare Facilities toward the Regional Original Income**

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### **Abstract**

The government as the owner of the hospitals acts as the executor of government tasks. Activities that are the task of the government have been designed in the government's annual planning through the departments and the National or Regional Development Planning Agency. These activities will be carried out in the form of a project or routine activity. In this case, a hospital is a place that must get subsidies from the government because of its characteristic as a public service. Moreover, the different facts look in reality. As an illustration, in several regional hospitals, there has been an economic behaviour of owners who expect the contribution of regional hospital (RSD) to the Regional Original Income and become a support for daily local government activities. This happens because the local governments lack of cash-flow to carry out government activities. The costs are taken from the hospital since it is a government institution that has the smoothest cash flow. The worst part of this situation is the use of hospital income to finance other government activities. This means the subsidies come from the sick people to the healthy people. It is noteworthy that in poor local governments, the government-owned hospital income risks to be reduced for other government activities.

**Keywords:** economic model, government, healthcare, economic behavior, original income

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## 1. Introduction

The government behaviour as the owner cannot be separated from the upper-level of bureaucrats behavior. As part of the bureaucracy, bureaucrats should not behave like entrepreneurs. In this case, it is possible that the upper-level of bureaucrats behavior is deviant [1]. One of the theories of bureaucratic deviation is explained by Niskanen. The model assumes that the upper-level of bureaucrats have the modest salaries. To expand income, additional income is required from projects carried out in the office. Likewise, bureaucratic prestige is obtained when there is a large program development [2]. As a practical effect, if the bureaucrat wants to expand the income and prestige, the best way is to increase the office budget for projects. In Indonesia, providing incentives to the project leaders and staff legally or illegally is one way to increase the income of the upper-level bureaucrats according to the project budget, so that the upper-level bureaucrats behavior become a budget-maximizer [3].

The owners behavior of the religious hospitals represented by the foundation is certainly different from the government-owned hospitals. The fundamental principle of religion is helping health services, especially for the poor [4]. This is usually stated in the hospital's mission statement which is primarily contain about a duty in serving the poor with love for the Catholic hospitals and serving the Dhuafa or the poor for Islamic Hospitals. However, it does not only for serving the poor. In various religious hospitals, the foundation as the owner clearly states that the hospital must generate income and contribute a certain amount to religious associations [5]. Thus, the hospital is expected to be a means of generating money for the foundation. It is no longer as a place to make donations. One of the interesting things about this behavior is the assumption that the hospital has used the name, connection, and protection of the religious association. Therefore, the hospital should contribute to the owner [6].

The owners of private hospitals include individuals, families, or groups of people who establish humane foundations. In Indonesia, currently, there is a law on foundations (The Law No. 16/2001) which strictly prohibits the distribution of dividend (SHU) to owners or groups of non-profit institutions. Practically, a non-profit religious hospital likely behaves like a shareholder in a for-profit company. In this case, the dividend (SHU) is distributed to the owner so that it resembles the limited liability company (PT). This situation is prohibited in the Law of Foundation the Year 2001.

The confusion between the form of the foundation and the limited liability company (PT) has resulted in the tax problem imposed on a for-profit or non-profit hospitals. In Indonesia, the tax behavior between the two is practically same. This is contrasting from the situation in the United States. Another behavior is the amount of salary for the members of the foundation [7]. If a member of a foundation or a board of trustees is paid a large salary, the situation will resemble a board of commissioners in a company. In Thailand, the board of trustees of regional hospital are not paid but are provided with transport costs at meetings. At the Eye Hospital of Dr.Yap Yogyakarta, the members of the hospital foundation are not paid but are given a small transportation cost.

## **2. Manager Behavior**

Non-profit hospital managers can behave like private for-profit hospital managers. This happens when the manager's income is related to the amount of functional income. Thus, the sales maximiser behavior occurs. This can be seen in the incentive system in several regional general hospitals (RSUD) where the director's income depends on the amount of the functional income. In the central general hospital (RSUP) owned by the central government, the economic behavior of hospital managers can be in the form of a sales maximiser or a budget maximiser if there are projects that provide incentives for hospital directors. In various private non-profit hospitals, the managers behavior can also in the form of sales maximizers. However, it is interesting to be observed that in some religious hospitals, for example, the Catholic Hospital, some of the upper-level managers are nuns. The economic behavior of these managers looks the same as the owner, namely heavenly behavior. For example, Panti Rapih Hospital in Yogyakarta, the finance director is a nun who does not seem to be receiving excessive salary or facilities.

The economic behaviour of hospital employees, namely doctors, nurses, and non-medical employees is varied and individualistic [8]. On this basis, there is no necessity that the religious hospital nurses should behave in a heavenly manner or consider that the income is not important. Specialists who work in religious hospitals or for-profit hospitals also do not make a distinction. The economic behaviour of health workers discussed in the next section [9].

## **3. The Problems in a Non-Profit Hospital**

Generally speaking, non-profit hospitals tend to be more complex in behavior, with less stringent regulatory systems than for-profit hospitals. In this framework, what is called

good corporate governance in non-profit hospitals may not have been developed as well as in for-profit hospitals. For example, who is the supervisor of the bureaucrats who determines the hospital policies? Who is the bureaucrat who is also the hospital manager? What is the performance measure for government hospitals? In political life, the bureaucrats who become executives will be supervised by the people through the House of Representatives (DPR). Moreover, the government budget must be approved by the board. A further question is whether the Regional House of Representatives (DPRD) understands the management and details of the hospitals? Will their lack of understanding be a major obstacle to the hospital?

Substantially, there are indeed various problems in non-profit institutions. The first, the inadequate capacity of the institutions to fulfill its social duties [10]. The second, non-profits tend to be inefficient. As an illustration, some humanity donors foundations spend too much on fundraising and administration events, leaving less than 50% of aid for those in need. The third, getting used to things that should not be right. For example, the case in Empire Blue Cross and Blue Shield which invested 17 million dollars in information systems led by a dentist who has no experience in developing such systems. The problem with getting used to inappropriate things is that the salaries of executives or employees can be very high at a non-profit. The fourth, those non-profit institutions are often too brave to face excessive risks in running their business.

The problem will be even more severe because the government and non-profit institution have deficiencies in the three mechanisms that ensure business accountability. First, the staff does not have a sense of belonging to the institutions [11]. Consequently, there is likely no system to prevent over compensation, ignorance of the mechanisms to make the business more efficient, and an inability to manage risk. Second, there may be a lack of competitors in the non-profit institutions, as in the case of the highest referral hospitals. As the highest referral hospital in a region, there is no other hospital that can be a competitor from a medical technical point of view. Third, non-profit institutions lack of indicators to measure the success or failure of institutions. This is different from for-profit institutions which have profit as a measure of success.

The hospitals in Indonesia also experience this problem. For instance, there are many doctors in teaching hospitals with low educational and operational performance. This low productivity has become commonplace [12]. Besides, it is common for government doctors to be in private hospitals during office hours. Another familiar situation, for example, a doctor

without accounting training becomes the head of the accounting or finance department. It can be argued that professionalism in non-profit hospitals is often difficult to measure.

#### **4. Economic Models of Non-Profit Hospitals**

Given these various problems, the question that arises is that what is the ideal of non-profit hospital model? The following discussed several economic models of non-profit hospitals. Three models are discussed, namely Newhouse, Pauly and Redisch, also Harris. These models can be used to explain hospital behavior in Indonesia.

##### **4.1 Newhouse Model**

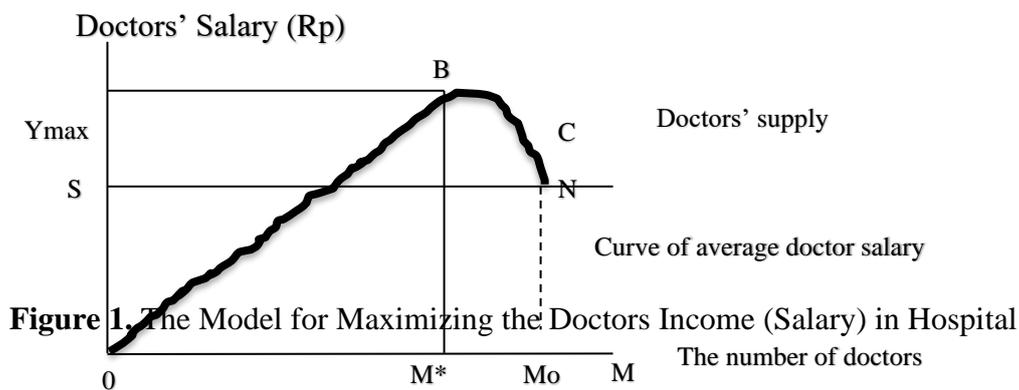
The hospital economic model states that non-profit hospital management decisions are made in the interaction between (1) Board of Trustees; (2) managers; and (3) medical staff. The board of trustees are people with various backgrounds but are expected to have an understanding of health services and managerial skills. Decisions are made in principle regarding the quantity and quality of health services to be provided. Those three parties are expected to agree to make a decision.

Two implications of this model are; first, the hospital must be managed as efficiently as possible with strong internal controls. This model can make hospitals tend to produce health services that do not generate profits and generate high prestige. This situation occurs if the members of the Board of Trustees, managers, and doctors have the desire to develop the recent technology with their respective motivations [13]. The possible economic calculations are not considered in this development. With this implication, the hospitals tend to lead to high quality with the support of the recent medical technology. The second implication, there must be a strong external control so that the productivity of this hospital can be known by people who have paid taxes. This model emphasizes the need for control from outside the hospital so that the social benefits of the hospital can be maximized. External control can be exercised by representatives of the public or consumer institutions.

The Newhouse model can be seen in non-profit hospitals that receive high subsidies, without any worry of loss, for example, oil companies-owned hospital, government teaching hospitals, and others. The effectiveness of this model will be small if the internal or external controllers of the hospital do not have clear indicators of the success or failure of the hospital.

##### **4.2 Pauly and Redisch Model**

This model does not concentrate the social benefits of the hospital or outside the control systems. The hospital is a company of doctors. If there are hospital directors and staff, they are not in a decisive position. Decision-making is strongly influenced by specialists. Making strategic decisions, such as setting the tariffs and admitting new doctors is determined by doctors. In this situation, doctors control the decisions for their economic interests [14]. The management system based on motivation maximizes the specialist doctor's salary. In this model, the decision to accept new doctors to work at the hospital is a closed system, which depends on the doctors' assessment of their salaries (Figure 1).



The vertical or Y-axis is the doctor's salary while the horizontal or X-axis represents the number of doctors working in the hospital. The N curve represents the average salaries of doctors. The N curve starts at point A with no salary at all, then rises to point B as the maximum, which then goes down. The increase in average salary reaches point B, in line with the increase in the number of doctors. The S curve depicts the supply of doctors which is elastic because this model is in an urban area where there are many doctors who work. For the doctor staffs who have been already working in hospitals with an  $M^*$  number, Pauly and Redisch's model states that they strive to be at point B, with average salary being at the highest level. In other words, the system will be closed, there are no new doctors may enter even though the actual number of doctors can still be increased until the number of  $M_0$  with the salary is at point C.

A hospital that uses an open system will provide doctors up to the  $M_0$  point because the community still needs them and some doctors want to work in the hospital. This open system applies to the Newhouse model due to outside pressure to open new doctor recruits for hospital staff that is needed and economically feasible [15]. However, Pauly and Redisch's model is the antithesis of Newhouse, there is a kind of veto for doctors not to add new medical staff.

The important question is whether all doctors who work behave to maximize salary. The answer is certainly no. Some doctors behave to increase their salary as high as possible, but some behave following humanity principles [16]. On the one hand, there was an interesting case at a government-owned hospital. Existing doctors refuse to have new doctors or doctors contracted to take care of patients. This act implies greed as the doctors often leave their job at government hospitals to take care of the patients in private hospitals. The patient complains the doctors since they are often in private hospitals. This case in the government hospital shows the doctor's salary-maximizing behavior is greater than the Pauly and Redisch model.

### **4.3 Harris Model**

Hospital economic model states that the hospital is a combination of two groups. The first is group of doctors while the second is the group of owners and managers. These two groups are interconnected in a complex and uncertain manner. The model states that doctors relate to the hospital based on the interests of the patient. Considering that the diseases suffered by patients are varied and are different from one another. The doctor may ask various equipments and materials to the hospital. As a consequence, there is communication in a diverse work relationship, negotiations, persuasions, violations of standards, and even disputes to emphasize their respective interests. Frequently, the competition occurs between doctors, not cooperating or allying.

The model has three implications. First, the doctor's role as a patient agent, then the hospital will tend to use new technology based on the doctor's recommendation. Second, the hospital regulations to improve efficiency which only applies to groups of managers and owners will have no significant effect. In a more excellent manner, the rules are applied for doctors so that the group of doctors also increases efficiency in their actions. Third, reorganizing the installations and division in the hospital so that doctors will be more involved in decision-making [17].

Of the three economic models of non-profit hospitals, there is one important common thread namely doctor behavior is a determinant of hospital behavior as a whole. It is interesting to be observed, profit-making hospitals usually use the Pauly and Redisch model development so that doctors can freely determine their salary without outsiders criticize. For non-profit hospitals, the Newhouse and Harris model are models that need to be used as references so that the quality of hospital services and the number of services increases but it still has high efficiency.

Referring to the efficiency of the hospital as an institution, a hospital's economic model has changed to a business institution that has a profit aspect. This movement occurred throughout the world, including in the UK, there was a change from a system that tended to be bureaucrats to semi-business institutions in the 1990s. In New Zealand, there has been a drastic change from a bureaucratic institution to a business institution. Even, they used a commercial approach. In various developing countries, there is a change in hospitals to be more autonomous, like at Ban Phaew Hospital in Bangkok, Thailand.

## **5. Payment Method in Hospital**

Hospitals have a variety of payment methods, including total budget, daily payments, detailed invoices, and case-based payments. The total budget is a mechanism that the government pays all or almost all hospital income, as in the UK and Canada. Payments are usually made in 12 or 24 payments covering the entire amount distributed for operating budget for the coming year. The UK hospital budget is part of the national health service spending hierarchy. Each hospital in Canada is autonomous and gets total assistance from the provincial government.

The daily cost is the standard average of daily cost which covers all or most of the treatment costs for all patients. Hospitals are paid for the number of days of an inpatient care facility for patient times the standard daily cost [18]. This has become the most common method of payment for hospitals in the third-party payment system. Daily cost take several forms. It can be cover the entirety, including the doctor's salary and the average of all clinical services at the hospital. For example, non-profit hospitals and public hospitals in Germany. The daily cost may also cover everything, except for bonuses for doctors, which are paid by the special disease foundation separately depending on the payment schedule. Another example, hospitals in the Netherlands and in almost all private clinics in Europe. The daily tariff may cover the entirety, including the employee's salary with a separate fee for the main clinic services.

The hospital mechanism of paying through detailed bills is widely used by hospitals such as bills for hotel guests. If a third party, for example, health insurance, will pay for the daily hospital budget, the hospital will still send detailed patient bills according to the standard daily tariff for some clinical services and some extra services. Some hospitals (especially private hospitals in Europe) increase the service cost for certain clinical services and the bill is made separately, such as the use of operating rooms, medicine, medical

equipment, physiotherapy, and bonuses for doctors. In all European hospitals, patients are billed separately for either first class or second class or extra services.

A payment method based on diagnosis was originally practiced experimentally for all payers in New Jersey and Maryland. Currently, it is widely used in America. In 1983 Medicare began paying on a group diagnosis basis for all its admissions. This bill is popularly referred to as a DRG payment.

## **6. Relationship between Hospitals**

Traditionally, a hospital is a group of buildings or a large building located in one place. The patient comes to a hospital physically by the act of entering the hospital grounds and using his services. However, the latest changes show that the hospital is not only limited by walls but develops into a complex institution and has the principle of "hospital without walls". Various hospital activities are carried out outside the physical hospital complex, such as home visits to be checked, taking blood samples, or home care. In terms of the management system, the hospitals unit pattern has special characteristics which affects its economic behavior. Some groups are solitary hospitals, network hospitals, and debundling hospitals.

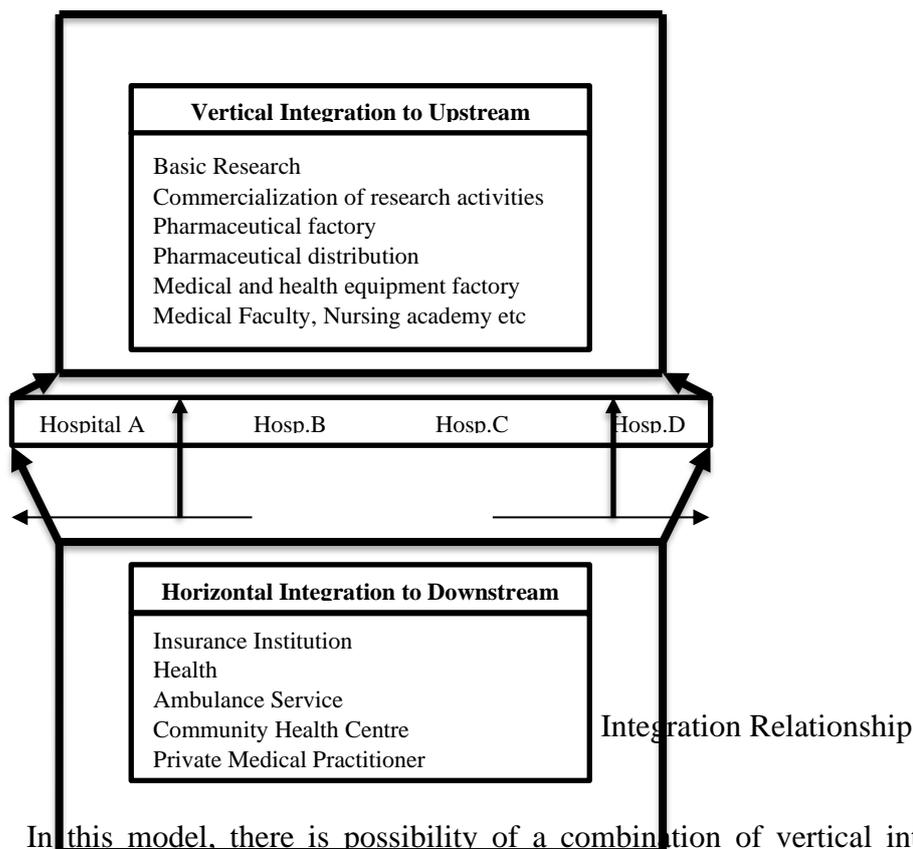
A solitary hospital is a hospital that stands alone without a network. The development of a single hospital is usually gradual, starting from the main activities and then developing into a complete system [19]. Compared to hospitals that have a main hospital and have a network, the development of this solitary hospital is relatively slower.

If several hospitals have the same owner, for example, religious foundations, humane foundations, government, or private companies, it can form a hospital network. By working together in a network, these hospitals can support each other in various aspects of management such as accounting, purchasing goods, purchasing drugs, laboratories, and human resource management. The hospital network can increase efficiency because it will cause economies of scale. For example, a network hospital marketing program would certainly be cheaper than marketing a single hospital. Currently, independent hospitals collaborate with other hospitals to form a network.

The hospital organizational innovations in the United States find a new pattern that is contrary to the hospital network pattern. Departments or units that have been under one management level, traditionally, can be divided into separate fragments in the form of independent strategic business units. For example, the clinical laboratory as a whole is separated from hospital management into one autonomous division. In this innovation, the

clinical laboratory autonomously has separate management. Clinical laboratories and hospitals have a business relationship. Clinical laboratories can provide services to patients outside the hospital patient. Other sections that can be separated include the radiology, emergency room, kitchen, and clinical sections, eg anesthesia. This situation is known as debundling or separating the various units.

The current form of the hospital is based on an integrated health care system (see Figure 2). In an integrated system, hospitals are an integral part of the health service system in general. In upstream integration, the hospital has a nursing school or a drug distribution company for example. Meanwhile, downstream (approaching patients) the hospital has a scattered network of clinics or doctors' practices which makes it easier for patients to access. This situation is called vertical integration so that the hospital can have a competitive advantage because the service network and distribution are efficient. This situation is one of the most widely discussed business strategies in strategic management textbooks.



In this model, there is possibility of a combination of vertical integration and the hospital network or health service institutions network. With this model, there will be a large conglomeration in health service institutions. If the conglomeration is too big and too strong, then monopolistic behavior can occur. Therefore, various regulations have emerged to control

this conglomeration. One of the ways to avoid conglomeration is the relationship between the hospital and the various institutions or practicing doctors is done on a contractual basis or an affiliation model.

## **7. Conclusion**

The way the hospital determines hospital income depends on the environment. In an environment that follows a market economy system, the hospital can set its tariffs. This happened in the United States. The hospital manager can determine his spending budget and pricing system. In Indonesia, de-facto, hospitals can set their tariffs, especially for upper classes and various medical treatments. In many places, government influence is still strong in determining hospital income. In this case, government regulation on the budget and hospital tariffs arises. For example, in France and some American states, such as New York and New Jersey, there are government offices that regulate hospital budgets and tariffs.

Between the two systems, there are various forms of tariff setting, such as bargaining, or the existence of an independent commission to set the tariffs. Bargaining between hospitals (which are supported by provincial or national hospital associations) and teams formed by payers is a common way of determining doctor contracts and salaries. For instance, there are negotiations for private hospital tariffs in France. An example of a tariff-setting agency is the Central Organ Tarieven Gezond-heidszorg (CTOG) in the Netherlands, which functions as a government-owned regulatory commission.

Based on the fact, there is a situation in Indonesia that shows a mixture of market forces and the role of government. The tariffs for public and private hospitals is influenced by the government. Specifically for regional government hospitals, the tariff is carried out by Regional Regulations. In this case, various variations occur in the stipulation of regional regulations. Some areas are very loose but some are very stiff. However, various components of service, including VIP wards, are determined by the hospital without being determined by government regulations. This system is increasingly used because the tariff setting by the government is often not in accordance with the unit-cost and the availability of subsidies. For example, the difficulty in fixing tariff for x-rays with government regulations is due to the changing unit-cost of photo films due to fluctuations in the dollar exchange rate. Thus, the tariff is increasingly left to the market.

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