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## The effect of health care expenditure by provider, function, financial scheme on revenues of health care

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### Abstract

This study examines health care spending in European countries, amounting to 33 countries, by looking at health care expenditure data for the last 4 years. Health development is as part of national development, in health development goal to be achieved is to improve the optimal public health status. The fact that until now the degree of public health is still low, especially the poor. It can be illustrated that the health status of the poor based on the indicator of Infant Mortality Rate (MMR) and Maternal Mortality Rate (AKI) in Indonesia is still high, namely IMR of 35 per 1000 live births and MMR of 307 per 100,000 live births. One reason is because of the high cost of health so that access to health services in general is still low. Health

insurance is an effort to overcome the problem of inability to finance health services. This type of research is a type of cause and effect. The purpose of this study was to determine the effect of health care spending by providers, functions, financial schemes on health care income. To analyze and prove this hypothesis, empirical testing in the form of Q square prediction with SmartPLS 3.3.3 was carried out on the magnitude of the influence of the activity sub-sector. The method used in data collection is a combination of secondary data derived from the European Statistical Recovery Dashboard. The method used to analyze the data is the time series method.

**Keywords:** health care, providers, functions, financial schemes, expenditure, and revenues

### 1. Introduction

The economic growth rate has been modest for the past decade and is projected to be low for the next decade. Most governments have had to cut the real per capita budget for social services, including health. In order to maintain the integrity of the public health system, public health policy-makers have introduced cost containment and cost recovery strategies, including indiscriminate user fees. As a result, households have increasingly been facing financial difficulties in paying for necessary health services. Some households, especially poor households, have to pay such a substantial share of their income for health services that they are pushed into poverty, with catastrophic consequences.

Health has many determinants. Empirical studies have shown that factors other than expenditure on health services, such as genetic endowment, environment, nutrition, education and income influence health outcomes. This section looks at health expenditure patterns and the relationship between health and income.

Health may be priceless but health care costs money and too many households either cannot pay for health services or become impoverished in doing so. While out-of-pocket payment is not the only factor that contributes to catastrophic health spending, it is the main culprit and health systems must protect households against catastrophic health spending. Financing (and its sub-components, collection, pooling and purchasing) is one of the main functions of the health system. Health care financing policies determine who will have access to basic health services, what services are offered and at what quality, and who pays for services. A well functioning health system provides a basic package of health services that is affordable, sustainable and is based on ability of households to pay regardless of their need or risk. The development of prepayment schemes provides a direct route to reduce catastrophic health spending.

A well functioning health system provides good health, is responsive to people's needs and adheres to the principle of fairness in financial contribution. Fairness in financial contribution is based on the notion that every household pays a "fair" share of its income for health. What constitutes fair share depends on individuals' normative view as to how health systems should be financed. Nevertheless, fairness in financial contribution embraces two critical aspects: that the contribution of individuals to financing of the health system depends on their income and that it is independent of the state of individuals' health. However, there are alternative health care financing options that can protect households against catastrophic payment.

Some are more limited in the scope of coverage than others. There is no single system that is most appropriate for all countries. The choice of the system is determined by factors such as the government's ability to raise funds, the size of the formal sector, as well as by political considerations. It also depends on the history, culture and current health institutions in the country. In this section alternative health care financing options and their merits are outlined. There is a large variation in the quality of health facilities and health professionals in most middle income and poor countries of the Region. This in itself indicates the existence of a higher quality private providers' sector outside the social health insurance system. In such cases, either some members of the social health insurance system are not fully insured or there is a need for a complementary private health insurance system.

## 2. Literature Review

### 2.1 Health Care

Health care, health-care, or healthcare is the maintenance or improvement of health via the prevention, diagnosis, treatment, recovery, or cure of disease, illness, injury, and other physical and mental impairments in people. Health care is delivered by health professionals and allied health fields. Medicine, dentistry, pharmacy, midwifery, nursing, optometry, audiology, psychology, occupational therapy, physical therapy, athletic training and other health professions are all part of health care. It includes work done in providing primary care, secondary care, and tertiary care, as well as in public health.

Health care systems are organizations established to meet the health needs of targeted populations. According to the World Health Organization (WHO), a well-functioning health care system requires a financing mechanism, a well-trained and adequately paid workforce, reliable information on which to base decisions and policies, and well maintained health facilities to deliver quality medicines and technologies.

### 2.2 Providers of Health Care

The definition of health service is a concept that is used in public health services. Health services are also defined as a concept that is applied to provide long-term and continuous services to the public and society.

Health services in which there is a medical services group (medical services) are characterized by organizing them individually (solo practice) or collectively in an organization. The most important goal is to cure disease and restore health, and its main goal is for individuals and families.

### 2.3 Functions of Health Care

The affective function (The Affective Function) is the main function of the family to teach everything to prepare family members to relate to other people. This function is needed for individual and psychosocial development of family members, The function of socialization is the process of development and change that individuals go through which results in social interaction and learning to play a role in their social environment. Socialization starts from birth. This function is useful for fostering socialization in children, forming norms of behavior in accordance with the child's level of development and and passing on family cultural values, The reproduction function (The Reproduction Function) is a function to maintain generations and maintain family continuity, Economic function (The Economic

Function), namely the family functions to meet family needs economically and a place to develop individual abilities to increase income to meet family needs, and The health care function (The Health Care Function) is to maintain the health condition of family members in order to maintain high productivity.

### 2.4 Financial Schemes

Financial schemes is all activities or activities in a company related to how to get working capital, use or allocate these funds and assets owned by the company in order to achieve the main objectives of a company. So it can be concluded that financial management has an interest in how to create and maintain the economic value of a company. As a result, all decision making must be focused on creating the welfare of its employees. Maximizing profits: a financial manager does not guarantee profits in the long term because of business uncertainty, but the company can get maximum profits even in the long term if the financial manager takes the right financial decisions and uses the company's finances well.

Maintain cash flow (cash flow): a company must have cash flow that is appropriate to pay for the company's daily needs such as purchasing tray materials, paying employee salaries, rent, and so on. Good cash flow or cash flow will certainly increase the company's success

Prepare the capital structure: a financial manager must be able to decide the ratio between the financing owned and the borrowed finance in order to be balanced.

Proper financial utilization: the financial manager must be able to make optimal use of finances and the company must not invest the company's finances in projects that are not profitable for the company.

### 2.5 Expenditure of Health Care

The shift to SHA-2 does not in itself change the difficulty of obtaining routine data on all expenditures sourced from abroad (external sources) in a country for a given year. Attempts were made to collect information on expenditures from external sources through data information processing. In many cases, the information was incomplete and it is necessary to consider the use of international data sources. Further efforts are needed to improve the completeness of information on external inflows, for the actual expenditure of commitments, and to delineate the channels through which external assistance flows into current capital and health expenditures. Also flows through government, NGOs and private financing arrangements. While it will never be perfect, the resources to experiment with data on countries that receive large amounts of development assistance, with the combined efforts of these countries and the donors providing funding, can improve the situation. Further efforts to extract more relevant and reliable data from the OECD-DAC have also proven useful. At the global level, WHO will continue to collect and publish health expenditure data. We are committed to working closely with global, regional and local experts and partners to refine implementation guidelines, and to explore and research ways of better data collection. We will also play a meeting role to coordinate with partners in building country capacity and technical support for data collection, analysis and use of health expenditure data to improve health policy, support monitoring implementation, and promote health financing and systems reform research agendas.

**2.6 Definition of Revenues**

Revenue is an inflow of cash originating from the company's normal activities in the creation of goods or services that result in an increase in assets and a decrease in liabilities. In the company's balance sheet, some income is given to investors in the form of dividends and there is also retained earnings. The income becomes retained profit for investors to inform shareholder capital and company evaluation. In addition, retained earnings function as the company's reserve capital to face financial conditions and finance company

operations.

**3. Method**

This study uses data analysis methods using SmartPLS software which is run on computer media. Secondary data on healthcare spending by providers, functions, financial schemes of health care revenue in Europe for 2015-2018 are sourced from the European Statistics Recovery Dashboard. Measurement models are used to test validity and reliability, while structural models are used to test causal data.

**4. Result and Discussions**

**4.1 Result**

**4.1.1 Descriptive Data**

**Table 1:** Descriptive Statistics

No	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
X1	1.000	49227.629	14498.000	321.000	383636.000	83774.831	5.362
X2	2.000	75295.402	31172.000	567.456	664364.000	123441.848	10.842
X3	3.000	52495.795	20057.000	768.847	271236.000	71699.671	1.674
Y	4.000	55212.591	24301.000	222.643	357401.000	81369.916	3.896

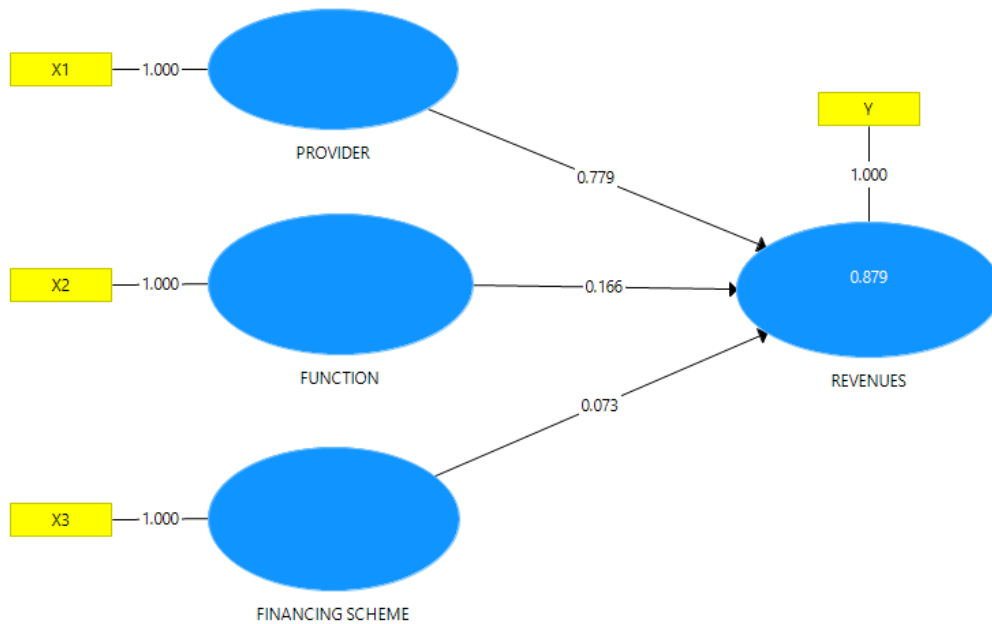
Source: Results of processing with SmartPLS (2021)

Based on Table 1, it can be seen that the average score of the providers of health care (X1) is 1,000 with a minimum value of 14498,000 and the highest score is 321,000.

Functions of health care (X2) with an average value of 2,000 with the highest score of 567,456 and the lowest value of 31172,000. Financial Schemes (X3) with an average value of

3,000 with the highest value of 768,847 and the lowest value of 20057,000. Revenues of health care (Y) with an average value of 4,000 and the lowest score of 24301,000 with the highest score of 222,643.

The results of the t-statistic value in the path coefficient table are presented in Figure 1 below:



Source: Results of processing with SmartPLS (2021)

**Fig 1:** Overall model with coefficients

Based on the model in Figure 1, it can be seen that the providers with health care by 0.779, functions of health care by 0.116, and revenues of health care by 0.073.

The results after we process Figure 1 into bootstrapping can be seen on Table 2 below:

**Table 2:** Model-Bootstrapping

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values
Financing Scheme (X3) → Revenues (Y)	0,073	0.072	0.053	1.377	0.169
Function (X2) → Revenues (Y)	0.166	0.192	0.091	1.820	0,069
Provider (X3) → Revenues (Y)	0,779	0.755	0.088	8,869	0,675

Source: Results of processing with SmartPLS (2021)

From Table 2, it can be seen that financing scheme (X3) as an independent variable has positive and significant effect revenues (Y). The P value for function (X3) is 0,169. Since the P value is below, it can be concluded that financing scheme (X3) has a significant effect revenues (Y). Function (X1) is not significant revenues (Y). The P value is 0,069. Since the P value is above, it can be concluded that function (X2) has no significant effect revenues (Y). Provider (X1) is not significant revenues (Y). The P value is 0.675. Since the P value is above, it can be concluded that Provider (X1) has no significant effect revenues (Y).

**4.1.2 Predictive Relevance**

**Table 3:** Predictive Value

	Financing Scheme (X3)	Functon (X2)	Provider (X1)	Revenues (Y)
Financing Scheme (X3)				0,037
Fuction (X2)				0,076
Provider (X1)				1,870
Revenues (Y)				

Source: Results of processing with SmartPls (2021)

From table 3, it shown that the coeffiecient values of financing scheme (X3) towards revenues (Y) is 0,037, which means the increase of financing scheme (X3) will lead to higher Revenues (Y). The coefficient values of Function (X2) towards Revenues (Y) is 0.076, means the increase of Function (X2) will lead to higher Revenues (Y). The coefficient values of Provider (X1) towards Revenues (Y) is 1,870, which means the decrease of Provider (X1) will lead to higher Revenues (Y).

**4.1.3 Determiration Coefficient Test Results**

**Table 4:** R Square

	R Square	R Square Adjusted
Revenues (Y)	0,879	0,876

Source: Results of processing with SmartPls (2021)

The results of testing the coefficient of determiration in Table 4, the R Square value is 0.879 and the Adjusted R Square value is 0.876. Thus, the value of R Square Adjusted illustrates that all of the independents consisting of Provider (X1), Function (X2), and Financing Scheme (X3) in this study are able to represent Revenues (Y) as the dependent variable of 8.8 %. While the remaining 10.4% is influenced by other variables outside this equation or the variables studied.

**4.1.4 Prediction values**

**Table 5:** Q Square

	SSO	SSE	
X3	88.000	80.000	
X2	80.000	65.000	0.037
X1	80.000	80.000	
Y	80.000	80.000	

Source: Results of processing with SmartPls (2021)

From Table 5, it can be seen that Financing Scheme (X3), Function (X2), and Provider (X1) can predict Revenues (Y) by 6.8%.

**4.2 Discussion**

Increased health service costs uncontrollable and anticipating community inability to access health services so that development the disease is getting out of control, hence the choice the right financing for health is Health Insurance. Given the economic conditions state and society and limited resources existing power, it is necessary to develop options health insurance with an approach Efficient, effective and of good quality to be able reach the wider community. For that it is time to be developed national health insurance with managed care as a form of operation. With coverage insurance is increasingly widespread, it is necessary service network (Hospital) is getting wide too. Demands for that service good quality for the implementation of insurance health and service delivery health will increase, efforts continuous improvement not only become the responsibility of the service provider health only but also for administration insurance. We recommend that you join an insurance program health from an early age. This matter to anticipate rejection health insurance participation. Therefore the risks to be borne in old age are great very different from when you were young.

Health expenditure is closely linked to out-of-pocket spending and is not unique to underfunded health systems. High-tech care in affluent countries or medicine in poor countries can both expose households to catastrophic expenditure. Health systems need to protect households against such expenditures through risk pooling and prepayment schemes, to the extent that such protection can be financed and sustained. Even so, households cannot be protected against the financial burden of all that health technology has to offer. The level of exposure has to be in line with the resources available. Obviously, the health system must try to mobilize as many resources as possible. Health must be perceived as an investment in human capital that promotes economic growth. Investment in health interventions is just like any other investment in development projects.

It is also important that health systems become more efficient than they currently are, in order to justify allocation of new resources. This requires reliance on the use of new analytical tools, such as national health accounts and burden of disease and cost-effectiveness analysis. Health policies need to become evidence-based. Universal coverage is the ultimate goal and will protect all households against catastrophic health expenditures. There is no unique pathway towards universal coverage that is appropriate for all countries in the Region, and certain public programmes must remain the sole responsibility of the government regardless of the choice of health financing options. These include “public goods” and programmes that generate measurable externalities, such as clean water, sanitation, health promotion and immunization. In addition, governments’ responsibilities to ensure that poor and vulnerable groups receive quality health services through a well-functioning primary health care network should not be undermined. These programmes are financed by the government through taxes and other sources of revenue and, often but not always, are provided through state-owned facilities. Finally, regulation of the private sector will always be the responsibility of the government. The experience of the countries of the world that have achieved universal coverage shows that they all go through a transition, as shown in Figure 4. During the transition, the share of public

spending through taxation and/or social health insurance increases, while the share of out-of-pocket spending decreases. The transition period and exact pathway is determined by many factors, including the political will of policy-makers and the economic performance of the country. Total health expenditure as a share of world gross domestic product (GDP) increased from 3% in 1948 to over 8% today. The world spent US\$ 3.8 trillion on health in 2001, over US\$ 600 per capita. However, there is wide variation in the per capita health expenditure among the different countries of the world. The per capita health expenditure in the Eastern Mediterranean Region ranges from less than US\$ 30 to over US\$ 900 (Figure 1), compared with over US\$ 2500 in member countries of the Organisation for Economic Co-operation and Development (OECD).

## 5. Conclusions

A primary healthcare center is where patients establish their first contact with a healthcare professional. As such, a primary healthcare center also presents opportunities for health personnel to detect diseases and provide appropriate health treatments to those who are sick or at high risk of developing health problems. The findings from our study revealed that primary care in primary healthcare centers in DTPK remains lacking, with inconvenient access to facilities and a lack of permanent doctors, pharmacists, and laboratory technicians. Nevertheless, primary healthcare centers have to date managed to handle the vast majority of patient presentations, which relate primarily to acute health complaints and non-communicable diseases. However, as disease profiles begin to shift towards primarily non-communicable diseases, primary healthcare centers may no longer be able to operate successfully without a permanent doctor. In terms of activities, primary healthcare centers in DTPK have been quite successful in interacting with their local communities through preventive and promotive programs. Finally, while primary healthcare centers received additional funding for catering to an increase in patient volume and daily operational activities, very few have used this opportunity to refurbish their facilities.

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