TECHNICAL AND SCALE EFFICIENCY OF DISTRICT HOSPITALS IN PERAK USING DATA ENVELOPMENT ANALYSIS

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ABSTRACT

In the recent years, the developed and developing countries has been debate's about increasing healthcare costs. The Ministry of Health in Malaysia has been implementing various health care sector reforms such as expansion and upgrading of public health facilities in a bid to improve efficiency in health care. In monitoring performance, efficiency study is vital for health care institutions. The purpose of the study is to investigate how well resources have been allocate in producing outputs, thus to measure technical and scale efficiencies of public hospitals in Perak, Malaysia.

Data were obtained from ten publics hospital in Perak, as the Decision-Making Units (DMUs), for the year 2008 to 2010. The data were pooled which consist of 30 DMUs altogether with the technique of Data Envelopment Analysis (DEA). The number of doctors, nurses and beds represents the inputs, while the number of outpatients, inpatients, surgeries and delivery represents the outputs.

There are three hospitals in year 2009 and 2010 with increasing return to scale (IRS). While in 2008, only two hospitals were faces IRS. Then, for decreasing return to scale (DRS), three hospitals were identified as DRS in year 2009, and one hospital in 2008 and 2010.

The findings motivate an examination of the policy implications of these comparative analysis of efficiency in the production of health care. Finally, the hospitals that are more economical in the allocation of resources to health care should be a benchmarking to inefficienct hospitals.

ABSTRAK

Kebelakangan ini, negara- negara maju dan membangun hangat membahaskan mengenai isu-isu dasar yang telah meningkatkan kos penjagaan kesihatan yang semakin meningkat. Kementerian Kesihatan Malaysia telah melaksanakan pelbagai reformasi sektor penjagaan kesihatan seperti pengembangan dan menaik taraf kemudahan kesihatan awam dalam usaha untuk meningkatkan kecekapan dalam penjagaan kesihatan. Dalam pemantauan prestasi, kajian kecekapan adalah penting bagi institusi penjagaan kesihatan. Tujuan kajian ini adalah untuk mengkaji bagaimana sumber telah diperuntukkan dalam menghasilkan output untuk mengukur kecekapan teknikal dan skala hospital awam di Perak, Malaysia.

Data diperolehi daripada sepuluh hospital awam di Perak sebagai Unit Pembuat Keputusan (DMUs), bagi tahun 2008 hingga 2010. Data yang dikumpulkan telah digunakan yang terdiri daripada 30 DMUs dan diuji dengan menggunakan teknik Data Envelopment Analysis (DEA). Bilangan doktor, jururawat dan katil mewakili input, manakala bilangan pesakit luar, pesakit, pembedahan dan bersalin mewakili output.

Hasil kajian menunjukkan bahawa tiga hospital pada tahun 2009 dan 2010 mencapai pulangan meningkat mengikut skala. Manakala pada tahun 2008, dua hospital mencapai pulangan meningkat mengikut skala. Sementara itu, tiga hospital dikenalpasti mencapai pulangan berkurangan mengikut skala pada tahun 2009. Manakala pada tahun 2008 dan 2010, hanya satu hospital mencapai pulangan berkurangan mengikut skala.

Hasil dari kajian ini, implikasi dasar memberi kesan dalam penjagaan kesihatan. Akhir skali, hospital yang cekap dalam menggunakan sumber menjadi tanda aras kepada hospital yang tidak cekap dalam menggunakan sumber.

Kata kunci: data envelopment analysis, kecekapan hospital, kecekapan teknikal dan kecekapan skala

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LIST OF ABBREVIATIONS

AE   Allocative Efficiency

BOR   Bed Occupancy Rate

CRS   Constant Return to Scale

DEA   Data Envelopment Analysis

DMU   Decision Making Unit

EE   Economic Efficiency

EMS   Efficiency Measurement System

GSO   General Statistics Office

ICU   Intensive Care Unit

IRS   Increasing Return to Scale

MPSS   Most Productive Scale Size

MoH   Ministry of Health

NIRS   Non-increasing Return to Scale

SE   Scale Efficiency

TE   Total Efficiency

TFP   Total Factor Productivity

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In the era of global competition in a borderless world, productivity growth is the path for sustained economic growth and enhanced living standards. Traditionally, productivity has been defined as the efficiency of transforming input into output (Bitran & Chang, 1984; Stoner et al., 1995; Parken, 1992). The measurement of efficiency is usually the first step in auditing individual performance of production unit in health care systems (Hossein, Syed, & Rahmah, 2010).

Efficiency is an important term especially in health care because it may transform the delivery of health care system. The transformation can be in term of increasing quality, capacity and coverage of the health care infrastructure, shifting towards wellness and disease prevention rather than treatment and increasing the quality of human resource for health.

Since independence, Malaysia is a vibrant and dynamic country enjoying continued economic growth and political stability. Today, Malaysian are generally healthier, live longer, and are better disposed to be more productive. The health plan for Malaysia has been detailed out in the 10th Malaysia Plan (2011-2015). This plan is to ensure that good health enables Malaysian to lead productive and fulfilling lives and contributes to increased prosperity and social stability.

The contents of the thesis is for internal user only

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