

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Many of the players in Malaysia's telecommunications sector were seriously affected by the economic crisis of the late 1990s. Despite this, there has been strong growth in the sector over the last decade. Fixed-line services jumped from around 2 million in 1990 to a figure approaching 5 million in 2002, resulting in a penetration rate of close to 20 percent. The mobile market has been more spectacular, jumping from 200 000 subscribers in 1990 to over 8 million by the end of 2002, having grown on average by more than 45 percent over the previous twelve years. In addition, in the year 2000 mobile market penetration surpassed the 19.7 percent fixed-line penetration and to date the penetration rate for mobile services is 32.8 percent.

Regardless of the progress, there is a dearth of research on comparative quantitative measures of the performance of major telecommunications operators in Malaysia. This study attempts to assess the changes in the productive efficiency performance of the different telecommunications operators over time in terms of total factor productivity (TFP).

1.2 PURPOSE OF THE STUDY

The research objectives of this study are as follows;

- a) To have an insight into total factor productivity and other important economic characteristics of Malaysian mobile telecommunication sector.
- b) To determine the level of productivity and relative efficiency among mobile telecommunication operators in Malaysia.
- c) To identify the sources of total factor productivity growth and the nature of technical change in Malaysian telecommunication industries.
- d) To provide a reliable reference for any restructuring decision within the mobile telecommunication industries and for international comparisons.

1.3 SCOPE OF THE STUDY

This study is a quantitative assessment of the Malaysian mobile telecommunications industry operation by comparing annual changes in the productivity of individual mobile operators. The study would identify general trends in the productivity of the mobile industry as a whole and the individual mobile operators exhibiting patterns of change in productivity that differ from the rest of the industry. The analysis of the results of this study would also add to our knowledge about the factors determining the pattern of mobile industry productivity in Malaysia. To implement this, Total Factor Productivity is

measured covering the period of 1996 to year 2001 using the Malmquist productivity indices. Five variables have been specified for the study which consists of the total number of subscribers as the output variable and total number of employees, number of radio base stations, number of mobile switching centers and number of land and buildings as the inputs variables. However, for this study, only mobile service providers' historical performance records with digital network platform (GSM) are taken into consideration.

1.4 LIMITATION OF THE STUDY

This study was confined only to digital network platform provided by the five telecommunications companies. It does not take into account data on analogue network platform services. Nevertheless, this gives a good gauge of the whole industry as the analogue subscribers are very small compared to the digital subscribers. Moreover, telecommunications companies which offered this service have started to encourage their users to adopt the digital network.

1.5 ORGANIZATION OF THE STUDY

This paper contains seven chapters that discuss salient features of the study from the background of the field to its research finding and its implications. Chapter one is an

introduction of the study and illustrates the research background, its objectives, scope and limitations, and the organization of the paper.

Chapter two briefly explains the background, development and other related issues pertaining to the Malaysian telecommunications industry. This chapter also discusses the roles and responsibilities of the authorities concerned in regulating and developing the industry as well as the profiles of five major operators in the industry.

Chapter three introduces the concept of productivity and its theoretical development in measuring productive efficiency. This chapter also includes early and recent empirical studies in the area of productivity particularly in the telecommunications industry.

Chapter four clarifies the model adopted for the study. The first section provides the theoretical foundation of Malmquist productivity index. The second section presents the theoretical background of data envelopment analysis (DEA) which is used to calculate the Malmquist productivity index.

Chapter five explains the research methodology that is adopted throughout this study. This chapter describes the sample selection, sources of data and data analysis techniques in the study.

Chapter six elaborates the research findings based on the techniques outlined in the previous chapter. The first section analyzes the trend of input and output growth within the

industry. Next, relative technical efficiency and total factor productivity growth for the overall Malaysian mobile telecommunications industry are presented along with relative comparison among all the mobile operators. Analysis of the sources of growth for this industry is also briefly described.

The last chapter, chapter seven concludes the paper with a summary of the study and the implications raise by the findings. The findings might be useful in strengthening the performance, competitiveness and consistency of the overall industry as well as for all the mobile operators. Finally, the chapter ends with some discussion on the challenges and prospects of the sector along with some considerations and recommendations for future research.