Universiti Teknologi MARA

Performance Evaluation of Mobile Network Operators in UiTM Perlis Using Data Envelopment Analysis

Nur Shafiqah Binti Hamidon

Report submitted in fulfilment of the requirements for Bachelor of Science (Hons.) Management Mathematics Faculty of Computer and Mathematical Sciences

July 2020

STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

……

NUR SHAFIQAH BINTI HAMIDON

2017130241

AUGUST 5, 2020

ABSTRACT

Mobile network operators are a provider of services in terms of wireless communications to mobile users. In Malaysia, there are four main mobile network operators (MNO) subscribed by Malaysians, which are Maxis, Celcom, Digi, and U Mobile. However, the number of complaints from the customers continues to increase every year due to dissatisfaction with the services provided. Most of the customers face a difficult situation in choosing the most affordable MNO based on their preferences. The company of MNO also need to consider customer satisfaction to survive in the market and compete with the competitor. Quality of services, billing and price, customer services, network connectivity, and promotions and delighting customers are the major factors of customer satisfaction. A questionnaire was distributed to collect data from 265 mobile users through a simple random method. This study aims to measure the efficiency of the MNO and determine the ranking of the most preferred MNO based on customer satisfaction factors. In the Data Envelopment Analysis (DEA), the Slack-Based Measured (SBM) Model was used to calculate the efficiency of each operator, while Super SBM Model assisted in ranking the mobile network operators. The results of this study showed that Celcom is the most preferred mobile network operator and followed by U Mobile, Maxis, and Digi. Thus, the findings of this study can help mobile users choose the best mobile network operators, and telecommunication companies can also improve their service performance to satisfy their customers' needs.

Keywords: Mobile Network Operators, Data Envelopment Analysis, Slack-Based Measure Model, Super SBM Model, Efficiency

TABLE OF CONTENTS