

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**MEASURING THE EFFICIENCY OF
TECHNOLOGY COMPANIES IN MALAYSIA
AND COMPUTING THE FULL RANKING USING
RESTRICTIONS IN DEA MODELS**

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Efficiency evaluation is very necessary as it is capable of determining the company's financial performance. Efficiency characterizes how well businesses develop outputs while handling their inputs. Therefore, Data Envelopment Analysis (DEA) will be used in this study to determine the relative effectiveness of Decision-Making Units (DMUs). The objective of this study is to compare the efficiency of listed technology companies in Malaysia for the period of 2014 to 2018 by using DEA.

However, DEA cannot provide full ranking where the same efficiency score can be obtained. This paper therefore introduces a new method for the complete ranking of decision-making units, namely restrictions to rank technology companies. This method can be used because no changes in the models are required.

In this study, the DEA model is solved using the Efficiency Measurement System (EMS) software. The result of this study shows that in Malaysia EFORCE, GTRONIC, KESM, MPI, UNISEM and VITROX are listed as efficient technology companies. We calculated a full rank for those six companies to show which companies are more efficient. Consequently, the formula of the balance index is used to calculate the new ranking based on the efficient company. This study is important because it helps to recognize the efficient technology companies that can serve a benchmark for further references for other inefficient companies.