UNIVERSITI TEKNOLOGI MARA
TECHNICAL REPORT

PRIORITIZATION OF FINANCIAL PERFORMANCE COMPANY OF TECHNOLOGY SECTOR USING FUZZY AHP (LAMBDA-MAX) METHOD AND DATA ENVELOPMENT ANALYSIS (DEA)

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

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ABSTRACT

Financial performance based on the technology sector is used to describe the evaluation and interpretation of the financial results of Malaysian enterprises engaged in the technology industry. In this study, there are various goals to be achieved, which are to identify the best sub-criteria that can influence financial performance and to prioritize the best company in the technology sector in Malaysia. The research gathered data from the Bursa Malaysia website and identified 21 Malaysian companies excelling in technology-based financial performance. However, for the purpose of this study, we only focused on ranking the four companies with the strongest financial standing. The study found that there are three most important criteria and seven sub-criteria for financial performance analysis in the technology sector. In this study,the methods that have been used are the Fuzzy Analytical Hierarchy Process (FAHP) and the Data Envelopment Analysis (DEA) approach. The fuzzy AHP using the Lambda-Max approach was chosen to evaluate the best financial performance of a company. Fuzzy AHP techniques use the concept of hierarchical analysis and enable decision makers to specify their subjective judgements on imprecise numbers of data for pair-wise comparisons while improving the accuracy and reliability of the results. As for DEA, it is to assess the effectiveness of decision-making units (DMUs) by comparing their input and output data. In the present research, analysis techniques based on the Alirezaee and Afsharian models were used, and the original Charnes, Cooper, and Rhode model (CCR) with the continuous return to scale assumption (CRS) remains viable. In the second phase, the input and output were added to assess and prioritize economic performance data using a predefined set of criteria. The input data came from the sub-criteria of leverage ratio, and the output data came from the sub-criteria of profitability ratio. Based on the result, the most efficient companies based on ranking in the technology sector in terms of financial performance are DMU_4. These companies were the best top four efficiency companies with good financial performance from 2018 until 2022.

Keywords: financial performances; technology sector, Fuzzy AHP, Lambda-Max method, Data Envelopment Analysis (DEA), Charnes, Cooper, and Rhode model (CCR)