

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**PERFORMANCE COMPARISON OF SELECTED
TELECOMMUNICATION COMPANIES IN MALAYSIA USING
TOPSIS AND GRA METHODS**

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

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ABSTRACT

Telecommunication services play a vital role in the modern world, enabling the transmission of data, voice, text, images, and video over long distances. With increasing competition among telecommunications service providers, assessing the financial performance of companies has become essential for effective resource management and business improvement. Initially, this study analysed the financial performance comparison of seven Telecommunication companies in Malaysia from 2011 until 2022. Ten financial ratios consist of profitability, earning power, liquidity, leverage and operating ratios were retrieved from the Refinitiv Eikon database to measure the financial performance of selected companies. The overall results showed that all seven companies received a satisfactory rating. Next, the performance was further analysed to compare the performance between seven companies using two Multi-Criteria Decision-Making (MCDM) methods such as Grey Relational Analysis (GRA) and Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS) with objective weights. Furthermore, this study adapted the objective weighting method consisting of weighted Equally Weighted (EW) and Criteria Importance Through Intercriteria Correlation (CRITIC) methods to calculate the weightage of each criterion. Subsequently, the ranking of seven companies is obtained by using GRA, a MCDM model under Grey System Theory. The empirical result showed that Redtone is the highest performing company, while XOX is the lowest performing company. Finally, the result was validated using Spearman's Rank correlation, revealing that EW-GRA is the best method.