

## Analysis on power outage by using big data analytics

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### ABSTRACT

Power outages could cause inconvenience to the consumers and utility companies. Particularly in West Malaysia where the population growth and development are climbing, power reliability and security are highly important. In this research, the analysis of power outage on Energy Company electrical network system has been carried out using given datasets such as weather, lightning, power outage records, and the sensors' location. Big data analytics was performed with MATLAB and Excel to handle dataset and statistical analysis was performed on the weather and lightning data. The preprocessed lightning data characterized as total CG was plotted and mapped to analyze the trend and its geographical distribution. From the correlation analysis, the results showed that weather data is not correlated to the total CG. However, the analysis from the CG trends justifies that CG numbers are highly affected by weather changes caused by monsoonal influence. The correlation analysis also suggests that there is no correlation between a power outage and CG total. The high kurtosis and skewness for total CG from the descriptive statistics indicate the presence of outliers in the data, hence, resulted in unexpected outcomes. At the end of this study, few outage management plans were proposed to improve the system.

### Keywords

Power outage; Big data; MATLAB; Correlation; Kurtosis; Skewness

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