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Project Title: Predicting the Turnover of Air Freight Logistics Based on The Economic Factors in Sri Lanka	
	Start Date: 30.09.2022
	Submission Date: 05.05.2023

CONSENT

I agree


I do not agree

That the University shall be entitled to use any results, materials or other outcomes arising from my project work for the purposes of non-commercial teaching and research, including collaboration.

DECLARATION

I confirm:

- **That the work contained in this document has been composed solely by myself and that I have not made use of any unauthorised assistance.**
- **That the work has not been accepted in any previous application for a degree.**
- **All sources of information have been specifically acknowledged and all verbatim extracts are distinguished by quotation marks.**

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Abstract

In today's highly competitive business world, the ability to predict revenue is crucial for decision-making and strategic planning. This research aims to develop a predictive model for revenue rate using machine learning algorithms and economic indicators. The study focuses on a freight transportation company that operates in multiple countries and relies heavily on economic indicators such as inflation, interest rates, exchange rates, and gross domestic product (GDP) to forecast revenue. Data from the International Monetary Fund (IMF) and Trading Economics data library was collected for 10 different economic indicators. A linear regression model was developed to determine the significance of these indicators on revenue rate. The model identified six significant predictors: annual interest rate, GDP annual million, inflation quarter, quarterly interest rate, CPI quarter, and exchange rate. The model achieved a coefficient of determination (R^2) of 0.39, indicating that the selected economic indicators explain 39% of the variance in revenue rate. To make the predictive model more accurate, three machine learning algorithms were evaluated: linear regression, decision tree, and random forest regression. The models were evaluated using cross-validation techniques, and the linear regression model was selected as the best model, achieving a mean absolute error of 6.82. A dashboard was created using Tableau, which allows the management to input values for selected economic indicators, and then the model predicts the revenue rate for the company. The dashboard also includes links to IMF data and Trading Economics data library, providing additional economic data for further analysis. Overall, this research demonstrates the potential of machine learning algorithms to predict revenue rate using economic indicators. The study contributes to the field of revenue prediction models by using machine learning algorithms, which can produce more accurate and reliable results. Future research could expand on this study by including additional economic indicators or exploring other machine learning algorithms to improve the predictive power of the model.