# PREDICTIVE MODEL FOR OPERATIONAL LEVEL EMPLOYEE TURNOVER IN APPAREL INDUSTRY

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# ABSTRACT

Employees are the most valuable resource of any company and employee turnover has become a major problem among all industries. Therefore, it is important to identify the reasons why these valuable employees leave and establish a mechanism to predict the employees who will leave the company. This study aims to predict whether an operational level employee will leave the company or not, compare different predictive models and to analyze the factors affecting the employee turnover in Sri Lankan apparel industry.

Data related to employee demographic factors and employment related factors obtained from a secondary data source is used in this study. Descriptive statistical analysis and predictive modelling including supervised machine learning algorithms such as Logistic regression, K-Nearest Neighbor, Naïve Bayes, Random forest, Support Vector Machine (SVM) and Extreme Gradient Boost (xgBoost) are used. The data set is split using 80% for the training purpose of machine learning algorithms and 20% for testing the models. Modelling application is developed using the statistical language R.

The findings show that, when compared with all models used in this study, Support Vector Machine (SVM) model which gives an accuracy of 81.2% can be selected as the best machine learning model to make predictions on the employees who will leave the company. With the results of descriptive analysis and predictive models, salary level, designation, performance grading and work experience have an impact on employee turnover. According to the study outcomes, recommendations for the company along with the preventive measures to be taken in order to control the employee turnover in operational level are provided at the end of this study.