

Sales Prediction with Data Mining Algorithms

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Nowadays most business fields using many strategies to improve business profits. Most of them used traditional methods. Therefore, those company's efficiency and profit goes to the critical situation. So the improve efficiency of the company is a major requirement for nowadays business platform. Using new technologies companies can improve their profit and efficiency. Also companies can identify their sales life-cycle.

This sales prediction was carried for Alfred Edirisinghe (PVT) LTD which is a medium scale tyre dealer in Colombo. Decision Tree, Association Rules and Naïve Bayes data mining models were attempted for the prediction. The best algorithm was selected for each model. Item Code, Item Type, Item Quantity, Item Value, Item Sold Date, etc. variables were used in data mining process. Among those variables five variables were selected for the mining process.

A sales data sample with 5000 records were provided by the client for the analysis. Out of the 5000 records 30% was used in the mining process. According to the predicting probabilities, Decision Tree algorithm were performed 98.65%, Association Rules algorithm were performed 100.00% and Naïve Bayes algorithm were performed 99.57%. Decision Tree belongs to the lowest predict probability value. Therefore Decision Tree model was the worst model. Association Rule model contains highest predicted value 100.00%. Therefore it was the best model. Naïve Bayes model was also a good model. The Score results indicate that Decision Trees and Naïve Bayes mining model has the best score 1.00 and followed by Association Rule mining algorithm with score of 0.99. By considering score and target population with predicting probabilities, Association Rule algorithm was the best one for prediction process.

Data mining model was implemented using Association Rule algorithm. According to these predicting results, the company can handle their imports optimizing the available resources; storage, time, money. Therefore this research would benefit the Company to improve their incomes.

Key words: Business Intelligence Tool, Data Mining, Decision Tree, Association Rules, Naïve Bayes.

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