

## ***ABSTRACT***

Telkomsel is the largest mobile operator in Indonesia with 195 million customers serving its customers spread across Indonesia, including in remote areas and outer islands as well as border areas of the country. Telkomsel is currently transforming to a digital company and one of its programs is to launch MyTelkomsel Apps as a digital channel Telkomsel and cooperate with other e-commerce Apps to provide convenience to Telkomsel's customers in conducting self-service online such as voucher purchase or Top Up. However, the conversion rate of Telkomsel subscribers who have done Top Up in e-commerce Apps is still very low so the problem is how to increase the number of voucher buyer in the e-commerce.

The objective of this research is to create insight for Telkomsel on predict customers who likelihood purchase voucher or do Top Up in e-commerce Apps by clustering and using Logistic Regression technique. Therefore it can be identified customer profile and significant variables of customers to purchase voucher in e-commerce Apps based on the results of predictive analytics.

Data collection based on data population of Telkomsel subscribers who has access to e-commerce Apps, whether have made a purchase or not, including pre-defined variables that have been determined based on telco historical data and made 2 (two) data sets that is training data set and validation data set then processed using logistic algorithm regression to identify customers who highly likelihood to purchase in e-commerce Apps, in this study will focus on the Top 3 e-commerce Apps used by Telkomsel subscribers, ie Bukalapak, Tokopedia and Traveloka.

To increase efficiency and effectively in marketing programs, so it is need to choose the priority of costumer. The segmentation is conducted for customers who do not purchase with the K-means clustering and it can be determined which cluster that give the greatest predictive gain. The prediction results of highly prospect customers will be divided in to 2 clusters with Two Step cluster techniques, namely low high value customer and medium high value customer. Based on the results of the prediction model and clustering, behavioral targeting can be done to give the product or gimmick so the Campaign is more targeted.

***Keywords*** : *Clustering and Segmentation; Behavioural Targeting; Predictive Analytics; Logistic Regression*