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Assessing Direct Marketing Campaign Effectiveness Using RFM, Logit and Machine Learning Methods

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Direct marketing activities often use Recency-Frequency-Monetary (RFM) method for selecting their communication groups (Winer, 2001). Coussement, Harrigan & Benoit (2015) have recently suggested the use of logit models. Compared to RFM, which use arbitrary decisions for model variables, logit is based on statistical modelling on historical data. Development in computing power and statistical methods allow us nowadays to apply machine learning methods (such as classification algorithms, decision trees, support vector machines and neural networks) to be applied to the problem of direct marketing targeting.
Our research uses historical casino data to predict which demographical characteristic of the target market has the greater chance for a direct marketing communication sent by-mail and SMS to be effective. Comparing RFM, logit, support vector machines and k-NN classification methods we have assessed which method best predicts a successful campaign measured by whether the targeted customer has responded or not. A total of 600.000 direct communications were analysed for a period of 21 months in 2014 and 2015. The average response rate was around 26 %. The sample was split to learning and test groups in the ratio of 90% (learning) – 10% (test) – 10 iterations. The best model proves to be support vector machines (78 % true positives) followed by logit and k-NN close together (67 % true positives) and RFM (55 %). The poor result of RFM could have been caused by poor selection of criteria and could be improved by applying different criteria, our research was only limited to the actual RFM criteria in use.

Keywords: direct marketing effectiveness, RFM, logit modelling, machine learning

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