

ICDSST 2016 on Data Analysis Supported Decision Making in Insurance Sector

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ABSTRACT

Big data is nowadays progressively turned into a valuable asset. The ability to produce insights from data, and exploit them into actionable opportunities has increasingly made a great impact on the industries. Thus, the organizations recognize the significant advantage of their enormous data and try to make sense of it. The insurance sector is concerned with many business problems of interest to the research community. By analyzing and gaining insights of their claim data and customers' claim patterns, claim costs or resources can be reduced and managed effectively as well as risks or fraudulent claims can be recognized and detected. Most importantly, the insights gained from the data can aid in decision-making process.

This paper presents a case study involving an independent insurance group Z, a small-medium insurance company who insures household appliances and gadgets in the UK. The research looks at existing claims, analyses the claim data, and figures out the claim patterns using a variety of techniques within the methods of data mining.

In the data analysis, it analysed trends and extracted insights from the claim data; what kind of a claim is driven by a certain set or combined set of factors such as the age of customer, what type of a claim that a customer tends to make. The analysis found that a BMC product (mobile phone) claim tends to be a customer who is younger than 35 years old and the claim tends to be made within 1 month of the policy being active. In the claim pattern analysis, the study used the Association Rule Mining with Apriori and R for finding patterns (rules) from the claim data. It was found that the younger (less than 35 years old) customers with claim type of LOST with unsuccessful result are highly associated with a Product BMC (mobile phone) claim.

The research gains better understanding of customer claim data, claim patterns, and enables to provide valuable insights to the insurance group Z, supporting decision-making process.

Keywords: Data Mining; Insurance Data Analysis; Case Study