Abstract

The aim of this paper is to present the possibilities of the usage of advanced analytical tools to optimize decision-making in personnel practice. The literature review part of the thesis deals with the so-called HR analytics, its development, possibilities of its usage, and the methodological framework on which it is based. The next part of the paper deals with the specific application of HR analytics in the field of employee retention according to the methodological framework of CRISP-DM. The last chapter describes in detail the phenomenon of employee turnover, its consequences, and possible explanatory variables.

The empirical part of the paper is framed as a quantitative, applied research and deals with voluntary turnover of employees in a particular company–a large Czech bank. Firstly, the statistical-inference part of the research identifies several statistically significant predictors of employee turnover through binary logistic regression–unemployment rate, number of changed teams, time spent in the company, salary and total income, salary growth rate, team size, extraordinary bonus, and gender. Secondly, in the data-science part, several prediction models are compiled, one using binary logistic regression as well and another based on several machine learning techniques. The models are assessed with regard to their accuracy and the possibility of using them to predict departure for individual employees. The discussion puts the results in the context of previous studies, outlines the limits for both sections of the empirical part, and provides the recommendations for the company to which the analysis relates.