Reviewer's report of doctoral thesis

Author: Stephen Nabareseh, MSc., MBA

Title: "Predictive analytics: a data mining technique in customer churn management for decision making."

Reviewer - Examiner: Prof. Dr. Roman Jašek, Tomas Bata University in Zlin

Objectives of the thesis and their fulfilment

A given doctoral thesis is focussed on possibilities of Data mining algorithms and using modern tools for model creation in prediction, clustering and association rule mining for decision making. I agree with the author about the using of modern analytical tools to generate such knowledge are prudent for profit driven-firms.

The dissertation uses primary data collected from customers to create a predictive churn model that assesses customer churn rate. Using the IBM SPSS Modeler 18 and RapidMiner tools, the dissertation presents three models created by C5.0 Decision tree algorithm, the Logistic Regression algorithm and the Discriminant Analysis algorithm (According to the author of the dissertation).

A comparative evaluation is performed to discover the optimal model with accurate, consistent and reliable results (by author). A conceptual framework is proposed and used in the entire process of the dissertation. Classification of relevant variables for model building preceded the modelling process with the use of exploratory factor analysis, cluster analysis and association rule mining.

Chosen methods can be considered as fully competent and it is sufficient for purposes and objectives of the PhD thesis. The given thesis has fulfilled its main objectives and its topic is up to date.

Benefits in the field of knowledge

The author showed the legitimacy and accuracy of work practices and their applicability in practice.

The work is important in analytical and research with a focus on data mining and transfers the acquired knowledge into practice. I assess positively the work from the perspective of the target group and the target region. The results and knowledge can be used as a model for use in scientific institutions in Ghana to other analysts and researchers. I also recommend staying in touch with the scientific community to the FAI and FaME - having regard to the joint publication results.

The proposed procedures and methodologies are supported by several publications of the doctoral student. In the years 2014-2016, he published (as a member of group authors) 23 articles in journals and at international conferences and workshops (**4 Impacted Journals, 6 Scopus Journals**, 13 conference papers) and **3 books chapters**.

Benefits in the field of social practice

The author created a pilot application, which introduced a method of improving the efficiency of chaotic communication schemes. It is obvious that the proposal is based on good author's knowledge and experience with an implementation of similar problems in practice.

Formal arrangement

The doctoral thesis has 123 pages. The whole thesis is written in English. The thesis is written and structured in a logical and well-arranged way. Its text is presented at an appropriate level of expertise and it is compact, only some of the images are not of adequate quality.
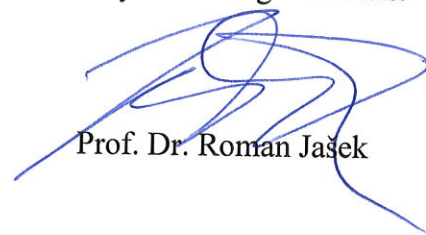
Questions and comments

1. I miss a more detailed state of the art. Could you briefly specify whether a given issue has been solved by other methods too? Chapter 2.1, 2.2..

2. Could you specify your contribution in multi-authors publications?

Conclusion

The submitted thesis fulfils the requirements for a doctoral thesis, both in terms of theoretical - methodological level, so the usefulness in practice. The thesis contains the original results.

I recommend the thesis to the defence before the relevant commission. Based on the thesis, I suggest the academic and scientific degree "Doctor Philosophiae" (Ph.D. abbreviation) to confer to Stephen Nabareseh after successfully defending his thesis.

Zlín 03.28.2017

Prof. Dr. Roman Jašek