SCIENTIFIC ADVISOR'S REFERENCE

Program:	Master in Management (MIM)
Student:	Alexander P. Timakov
Title of thesis:	USING POLARITY CLASSIFICATION MODEL TO ASSESS CUSTOMERS' ATTITUDES: THE CASE OF RUSSIAN E-COMMERCE COMPANIES ON TWITTER

Justification of the topic choice. Accuracy in defining the aim and objectives of the thesis. Justification of the topic choice; accuracy in defining the aim and tasks of the thesis; originality of the topic and the extent to which it was covered; alignment of the thesis' topic, aim and objectives.

Sentiment analysis (SA) is one of the fastest growing areas which uses the natural language processing, text mining and computational linguistic to extract useful information to help in the decision making process. In the recent years, social media services have been spreading widely, and their users are increasing rapidly.

With the development of E-commerce, more and more users to express their opinions about a product or products, news and blog content, etc al. Sentiment Analysis or Opinion Mining is used to identify sentimental tendency so as to understand consumers' spending habits and analyze the public opinion towards hot issues, etc. Therefore, sentiment analysis is an important issue in E-commerce and it is needed to develop an effective sentiment analysis approach.

Taking into account all above, the master thesis of Alexander P. Timakov seems to be really topical. The title, research problem and research questions are clearly stated. The goal is actual and the tasks are well defined.

Structure and logic of the text flow. Logic of research; full scope of the thesis; alignment of thesis' structural parts, i.e. theoretical and empirical parts.

The structure of the research is divided in to several parts: theoretical background (literature review), methodology and data description, results and conclusions plus appendixes. Both theoretical and empirical part of the thesis are consequently aligned in terms of their structure.

Quality of analytical approach and quality of offered solution to the research objectives. Adequacy of objectives coverage; ability to formulate and convey the research problem; ability to offer options for its solution; application of the latest trends in relevant research are for the set objectives.

The following research goal was stated: To create and test polarity classification model, which allows managers of Russian E-Commerce companies to extract additional knowledge about customers' attitudes towards their companies from user-generated content.

To achieve this goal, author develops seven research questions.

To the benefits of the paper one can attribute multiple analytical methods of research applied. Author demonstrates ability to formulate and convey the research problem and to offer options for its solution applying the latest trends in relevant research.

Quality of data gathering and description. Quality of selecting research tools and methods; data validity adequacy; adequacy of used data for chosen research tools and methods; completeness and relevance of the list of references.

The master thesis consists of three stages of research. The first stage is devoted to theoretical part, where impact of CA on E-Commerce, efficiency of BD and Data Mining (DM) techniques for unstructured data collection and analysis, and NLP as tool for unstructured textual analysis are reviewed. In addition, SA process and approaches towards it along with value brought to business by SA are overviewed. The second chapter consists of research methodology, process of obtaining business and data understanding, data preparation and information upon modelling. The third chapter includes creation, evaluation, iterative improvement and deployment of polarity classification of Russian language' models with highest expected accuracy.

Scientific aspect of the thesis. Independent scientific thinking in solving the set problem/objectives; the extent to which the student contributed to selecting and justifying the research model (conceptual and/or quantitative), developing methodology/approach to set objectives.

To meet stated research objectives, theory on Customer Attitude and how it affects consumers' desire to purchase specific E-Commerce products and services, along with is ongoing influence on companies' financial and product KPIs was researched. Secondly, Big Data and Data Mining as efficient approaches to

CA extraction and analysis were reviewed. This part included overview of Big Data analytics, including its distinctive characteristics, stages of data mining and data analysis processes as well as common tools and techniques for extraction BD from SNS. Finally, Natural Language Processing as efficient tool to work with unstructured data and Sentiment Analysis as a part of NLP specialized in work with textual opinionated data were analyzed. Topic modeling and polarity classification as SA tasks aimed on extraction of aspects and their sentiment evaluation were reviewed. Value of SA for commercial companies was overviewed.

Practical/applied nature of research. Extent to which the theoretical background is related to the international or Russian managerial practice; development of applied recommendations; justification and interpretation of the empirical/applied results.

The main managerial implication was fulfilled and functioning polarity classification model was created. It means that E-Commerce companies' managers can use the final model to get 'Topic-Sentiment' for their own data, which may include UGC in Russian language collected from different sources (however, the best results will be made on short-text Twitter-alike type of data).

Quality of thesis layout. Layout fulfils the requirements of the Regulations for master thesis preparation and defence, correct layout of tables, figures, references.

Layout fulfils the requirements of the Regulations for master thesis preparation and defense. All the tables and figures are properly edited.

Originality of the text. All sources of match identified by the Safe Assign system follow the allowed cases, the paper does not contain any elements of plagiarism.

The thesis text is original and does not contain elements of plagiarism

The Master thesis of Alexander P. Timakov meets the requirements) for master thesis of of Master in Management (MIM) program thus the author of the thesis can be awarded the required degree.

Date 04.06.2018

Scientific Advisor:
Asc. Professor S.A.Yablonsky