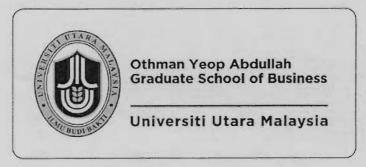# VALIDATING BANKRUPTCY PREDICTION BY USING BAYESIAN NETWORK MODEL: A CASE FROM MALAYSIAN FIRM

By

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Abstract

This paper provides operational guidance for validating Naïve Bayes model for bankruptcy prediction. First, researcher suggests heuristic methods that guide the selection of bankruptcy potential variables. Correlations analyses were used to eliminate variables that provide little or no additional information beyond that subsumed by the remaining variables. A Naïve Bayes model was developed using the proposed heuristic method and it performed well based on logistic regression, which is used for validation analysis. The developed Naïve Bayes model consists of three first-order variables and seven second-order variables. The results show that the model's performance is best when the method of *enter* is used in logistic regression which is percentage of correct is 90%. Finally, the results of this study could also be applicable to businesses and investors in decision making, besides validating bankruptcy prediction.

Keywords: Bankruptcy prediction, financial distress, Naïve Bayes model, Variables selection, Logistic regression

Abstrak

Karya ini memberi panduan operasi untuk mengesahkan model naive Bayes untuk ramalan muflis. Pertama, penyelidik mencadangkan kaedah heuristik yang membimbing pemilihan muflis potensi bolehubah. Berdasarkan korelasi dan korelasi separa antara pemboleh ubah, matlamat kaedah ini adalah untuk menghapuskan pembolehubah yang memberikan maklumat tambahan sedikit atau tidak lebih dari itu digolongkan oleh pembolehubah yang tinggal. Model Bayes naif dibangunkan dengan menggunakan kaedah heuristik yang dicadangkan dan didapati prestasi yang baik berdasarkan regresi logistik yang digunakan untuk analisis pengesahan. Model Bayes naif dibangunkan terdiri daripada tiga pembolehubah yang mula- perintah dan tujuh pembolehubah tertib kedua . Keputusan kami menunjukkan bahawa prestasi model adalah yang terbaik apabila kaedah memasukkan digunakan dalam regresi logistik yang merupakan hasil daripada peratusan yang betul ialah 90 %. Akhir sekali, hasil kajian ini juga boleh diguna pakai untuk membuat perniagaan dan pelabur keputusan konteks yang lain daripada mengesahkan ramalan muflis

Kata kunci: ramalan Kebankrapan, tekanan kewangan, model naif Bayes, pemilihan Pembolehubah, regresi logistic.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter will provide an explained of the research background, problem statement, scope, objectives and the significance of the study. The research questions and the organization of the dissertation are also presented, while in operational definitions used in this study are described.

1.1 Background of Studies

Unpredicted performance in a dynamic economic and monetary stability nowadays has become one of the reasons that the number of bankruptcies continued to rise significantly from time to time. This scenario became worst when financial experts failed to make accurate judgment as Hopwood (1994) states, "Even auditors, who have good knowledge of firms' situations, often fail to make an accurate judgment on firms' going-concern conditions". Bankruptcy prediction is a key importance for companies to ensure that the cost of bankruptcy is zero and the interests of stakeholders are protected. According to Salehi and Abedini (2009), "One of the bankruptcy factors is lack of existing control by different claimants". In the corporate management, shareholders have the right to control the management of the company and use the various types of operation to avoid bankruptcy. They agreed that the factors that led to bankruptcy are the management of a company failed to maximize shareholders wealth and cause financial problems occur.

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