UNIVERSITI TEKNOLOGI MARA

FAILURE PREDICTION MODEL IN DETERMINING BUSINESS INSOLVENCY OF CONSTRUCTION COMPANIES IN MALAYSIA

NUR DIYANA BINTI ABDULLAH

Thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Civil Engineering)

Faculty of Civil Engineering

February 2023

ABSTRACT

In today's competitive business environment, an increasing number of businesses are experiencing economic and financial challenges, which may result in bankruptcy. As a result, there has been a rise in research conducted on the causative factors, effects, and forecasts of business insolvency and bankruptcy. Therefore, predicting business failure is one of the most basic concepts to consider when assessing solvency, especially in a turbulent economy. Due to the importance of construction companies to the country's economy, it is essential to predict business failure to avoid future failure or distress of these companies. Thus, this study's primary objective is to create a prediction model that may be used to analyse and detect the likelihood of financial distress and bankruptcy of a construction firm in some construction companies in Bursa, Malaysia. Furthermore, the study also determined the crucial elements that would enable early detection of the signs of impending financial failure of businesses in the construction sector. Due to the need for accurate financial distress prediction, the Statistical Package for Social Sciences (SPSS) and partial least squares (PLS) analysis were employed for data screening, assessment, and validation of the measurement and structural model. The data used in this study consisted of historical financial statements when the selected construction companies entered PN17 status before being listed by Bursa Malaysia. Software for model prediction was developed to analyse the failure and health status of the companies. The advantage of this software is obtaining failure status with the faster result. By incorporating construction businesses data from year 2015 to 2020 from Bursa Malaysia, it is possible to measure these businesses' failure and health status with an accuracy of 83% based on the proposed model. The proposed model's outcomes show excellent prediction with a moderate and substantial coefficient of the determinant (R^2). The finding of this study establish relationship between financial ratios, macroeconomic indicators, and company conditions. Only profitability demonstrated a considerable ability to forecast the firm situation among many types of financial ratios studied. Profitability makes sense as the key factor in the prediction since a company may experience debt if it cannot make any profit. The results of this ratio show negative effects between issues related to debt levels and company's financial health several years before it fails. Therefore, the proposed model able to identify each variable's function in the prediction model and select the most appropriate financial measures to predict insolvency. Thus, this study findings of the business insolvency factors would help to identify a crucial aspect that the Malaysia National Construction Policy 2030 should consider to expedite technology adoption in all building work processes and align the sector with the nation's long-term decarbonization agenda.

ACKNOWLEDGEMENT

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

1.1 Research Background

A nation's prosperity is connected to its rate of economic growth, where all sectors, including the primary, secondary, and tertiary institutions, contribute to maintaining economic stability. The citizens' prosperity, well-being, and standard of living are directly linked to the construction sector's influence (Alaloul et al. 2021a; Lean 2001). The construction industry influences every sector's involvement at all levels in an economy because it serves as the backbone of economic growth in any nation (Alaloul et al. 2021b; Hillebrandt 2000). For the most part, developing nations such as Malaysia rely on the building industry to carry out their sustainable development (Alaloul et al. 2021c). The construction industry directly impacts socioeconomic growth and money flow. Therefore, the lack of significant growth of the firms leading to insolvency and bankruptcy can undermine the country's economic growth, a decline in the standard of living, and uneven money circulation, leading to the nation's economic failure. Therefore, it is noteworthy that the construction sector is a crucial and productive sector of the Malaysian economy as well (Khan et al. 2014).

The construction sector has been playing a significant role in the aggregate economy of Malaysia in terms of its contribution to revenue generation, capital formation, and employment creation which ultimately support the gross domestic product (GDP) and the socio-economic development of Malaysia. As a developing nation, Malaysia has steadily realised the pivotal role that the construction sector plays not regarding economic growth but also in improving the quality of life and living standards of the Malaysian population (Hadi et al. 2017). As a result, Malaysia's gross domestic product (GDP) grew 4.3% in 2019 and was forecast to remain slightly above 5% for the medium term. Over the last two decades, this sector has contributed between 3% and 5% in aggregate towards the economy (i.e. gross domestic product) (Khan et al. 2014).