# A STUDY OF CORPORATE FINANCIAL DISTRESS PREDICTION OF SRI LANKA: AN APPLICATION OF LOGISTIC REGRESSION ANALYSIS AND MULTIPLE DISCRIMINANT ANALYSIS

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# DECLARATION

"I declare that this is my own work and this thesis/ dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other university or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text."

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The above candidate has carried out this research for the dissertation under my supervision.

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# DEDICATION

This thesis is dedicated to my loving parents, my husband and the supervisor of my research, Dr SD Jayasooriya, Head of the Department of Quantity Surveying, General Sir John Kotalwala Defence University who always encouraged me to complete this research.

# ACKNOWLEDGEMENT

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# ABSTRACT

A financial distressed situation means a company cannot settle its obligations, liabilities from the operating cash flows or value of total assets is lower than the aggregate value of the liabilities and equity. The probability of bankruptcy should be evaluated to reduce its' harmful effects. In such a situation, the firms should have to incur bankruptcy costs. It can be minimized through the evaluation of the possibility of financial distress. Up to now various types of models are generated to forecast bankruptcy. In this study, three models are evaluated to compare their distress prediction ability within the Sri Lankan Context. They are Altman's (1968) and Springate Model (1978) and Grover Model (2001). Therefore, the objective of this research is to identify the applicability of these models in forecasting the financial distress of listed companies in Sri Lanka. Those models are analyzed within the listed companies of the Colombo Stock Exchange. The relevant financial data is collected from the audited financial statements during the period of 2013/14-2017/18.

Descriptive Statistics and Regression Analysis are used to analyze collected data with Multivariate Discriminant Analysis (MDA) as the main method of analysis. The objective of this method is to identify groups of samples from a group of predictors by finding the relationship of the variables which maximize the deviance among the populations being studied.

The study findings reveal that Altman's model has a higher accuracy rate in predicting financial distress in a non-distressed sample rather than a distressed sample and can predict financial distress before one year to bankruptcy. Yet the Springate model has an excellent predicting ability both in distressed and non-distressed samples. And also, it can reveal a symptom of financial distress before three years to the bankruptcy. Therefore, it can be concluded that the Springate model is performed well than Altman's model within the Sri Lankan context.



*Key Words: Financial Distress, Altman's Model, Springate Model, MDA*

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# LIST OF ABBREVIATIONS

| Abbreviation | Explanation |
|---|---|
| CSE | Colombo Stock Exchange |
| MDA | Multivariate Discriminant Analysis |
| EBIT | Earnings Before Interest and Taxes |
| ROA | Return on Assets |
| RE | Retained Earnings |
| TA | Total Assets |
| WC | Working Capital |
| MVE | Market Value of Equity |
| TL | Total Liabilities |
| SE | Standard Error |
| CI | Confidence Interval |
| DF | Degree of Freedom |
| SD | Standard Deviation |

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