

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**A COMPREHENSIVE PERFORMANCE EVALUATION OF  
FOOD AND BEVERAGES INDUSTRY IN MALAYSIA USING  
GREY RELATIONAL ANALYSIS MODELS  
(P02S22)**

**AINA NASHITA BINTI ABD RAZAK (2021119413)  
NURUL ALISYA BINTI ABDUL MALEK (2021113381)  
NURUL AZZWIN AZZURA BINTI SHAHRUDIN (2021166831)**

**SUPERVISOR:  
MADAM FARAH AZALINEY BINTI MOHD AMIN**

**Bachelor of Science (Hons.) Management Mathematics  
Faculty of Computer and Mathematical Sciences  
UNIVERSITI TEKNOLOGI MARA**

**FEBRUARY 2023**

## **ACKNOWLEDGEMENT**

We are appreciative to the All-Powerful God for providing us with the capability, wisdom, and comprehension needed to finish this project. He has provided us with more than enough affection to keep and support us.

Our sincere thanks go out to our wonderful supervisor, Mrs Farah Azaliney binti Mohd Amin for all of her help with this research project, including her unfailing encouragement, tolerance, time, and advice. Our appreciation also extends to Prof Madya Dr Nur Azlina binti Abdul Aziz (MAT530), who patiently guided the proposal research of our project.

In addition, we also want to express our gratitude and admiration to Mr Abdullah bin Yahya (MSP660), who have occasionally given his on-the-spot advice during our research project. May God keep you all in his protection, blessing, and direction.

Lastly, we want to thank our parents and siblings for their unconditional support, which has motivated us to pursue our academic goals. God bless you all.

## **ABSTRACT**

The purpose of this study is to evaluate the performance of companies in the food and beverage industry listed on the Bursa Malaysia. The criteria evaluated include financial performance such as the debt ratio, the current ratio, the profit margin ratio, and the asset turnover ratio. This study uses secondary data. The sample of this study includes 30 Food and Beverage (F&B) companies that were listed on the Bursa Malaysia market within 2017 and 2021. The Grey Relational Analysis model was used to rank and analyze the factors that influence the performance of the F&B companies based on their performance evaluation using financial ratio. In this study, the Grey Relational Grades were used to rank the companies from. In addition, the findings of this study demonstrate that the most influential factor to the companies' performance is profitability ratio (Profit Margin Ratio, or PMR).

# TABLE OF CONTENTS

<b>ACKNOWLEDGEMENT</b> .....	i
<b>ABSTRACT</b> .....	ii
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.0 Overview.....	1
1.1 Background of the Study.....	1
1.2 Problem Statement .....	4
1.3 Objectives of the Study .....	4
1.4 Significant and Benefit of the Study .....	5
1.5 Scope and Limitation of the Study.....	6
1.6 Definition of Terms and Abbreviation.....	6
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	8
2.0 Overview.....	8
2.1 Financial Ratios .....	8
2.2 Grey System Theory .....	9
2.3 Grey Relational Analysis (GRA) .....	10
2.4 Absolute Grey Relational Analysis.....	10
2.5 Advantages of GRA .....	11
2.6 Previous Studies.....	12
<b>CHAPTER THREE: METHODOLOGY</b> .....	20
3.0 Overview.....	20
3.1 Flow Chart .....	20
3.2 Data and Sample .....	21
3.3 Selected Financial Ratio.....	22
3.3.1 The Implementation of Financial Ratio .....	23
3.4 GRA Model Framework .....	24
3.4.1 The Implementation of GRA Model .....	28
3.5 Absolute GRA Framework .....	36
3.5.1 The Implementation of Absolute GRA .....	38
<b>CHAPTER FOUR: RESULT AND DISCUSSION</b> .....	44
4.0 Overview.....	44
4.1 Analyzing of Financial Ratio .....	44
4.2 Ranking of Companies Using Grey Relational Analysis Model .....	47
4.3 The Factor Influence Using Grey Absolute Correlation Degree.....	49
<b>CHAPTER FIVE: CONCLUSION AND RECOMMENDATION</b> .....	51
5.0 Overview.....	51

5.1 Conclusions and Recommendations .....	51
<b>References</b> .....	54
<b>Appendix A</b> .....	62
<b>Appendix B</b> .....	63
<b>Appendix C</b> .....	64
<b>Appendix D</b> .....	65
<b>Appendix E</b> .....	66