

# TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION.....	1
1.1 Research Background .....	1
1.2 Research Problem Formulation .....	2
1.3 Research Purpose .....	3
1.4 Research Benefits .....	3
1.5 Scope of Problem .....	3
1.6 Writing Schematics .....	4
CHAPTER 2 LITERATURE REVIEW .....	5
2.1 Previous Studies .....	5
2.1.1 Styawati, Nirwana Hendrastuty, Auliya Rahman Isnain, Ari Yanti Rahmadhani (2021) .....	5
2.1.2 Majid Rahardi, Afrig Aminuddin, Ferian Fauzi Abdullah, Rizky Adhi Nugroho (2022) .....	5
2.1.3 Imam Rasyidin Muqsith Rizqi Prasetyo, Aziz Musthafa, Taufiqurrahman (2023) .....	6
2.1.4 Eva Darwisah Harahap, Rakhmat Kurniawan (2024) .....	6
2.1.5 Ade Dwi Dayani, Yuhandri, Gunadi Widi Nurcah (2024) .....	7
2.2 Theoretical Review .....	9
2.2.1 Public Housing Savings (Tapera) .....	9
2.2.2 Twitter Social Media .....	9
2.2.3 Sentiment Analysis .....	10
2.2.4 Support Vector Machine .....	10
2.2.5 Confusion Matrix .....	10
CHAPTER 3 RESEARCH METHODOLOGY .....	12
3.1 Research Time and Place .....	12
3.1.1 Time .....	12
3.1.2 Place .....	12
3.2 Needs Analysis .....	12
3.2.1 Hardware .....	12
3.2.2 Software .....	12
3.3 Research Stages .....	13

3.3.1 Business Understanding .....	13
3.3.2 Data Understanding .....	13
3.3.3 Data Preparation .....	14
3.3.4 Modeling .....	15
3.3.5 Evaluation .....	16
3.3.6 Deployment .....	16
CHAPTER 4 RESULTS AND DISCUSSION .....	17
4.1 Data Collection .....	17
4.1.1 Data Labeling .....	17
4.2 Preprocessing .....	18
4.2.1 Oversampling .....	21
4.2.2 Pembobotan TF-IDF .....	22
4.3 Modeling .....	22
4.4 Evaluation .....	22
4.4.1 Confusion Matrix .....	22
4.4.2 Cross Validation .....	23
4.4.3 Wordcloud .....	24
4.5 Deployment .....	25
CHAPTER 5 CLOSING .....	26
5.1 Conclusion .....	26
5.2 Suggestions .....	26
APPENDIX .....	30

## LISTS OF TABLES

Table 2.1 Previous Studies .....	8
Tabel 3.1 Confusion Matrix .....	10
Tabel 3.1 Execution Time .....	12
Table 4.1 Data Collection Results Samples .....	17
Table 4.2 Data Labeling Examples .....	17
Table 4.4 Case-Folding Results Samples .....	18
Table 4.5 Tokenizing Samples .....	19
Table 4.6 Normalizing Samples .....	19
Tabel 4.7 Stopwords Samples .....	20
Table 4.8 Stemming Samples .....	20
Table 4.9 Data Amount after Oversampling .....	21
Table 4.10 TF-IDF Results Samples .....	22
Table 4.11 SVM Accuracy Metric .....	22
Tabel 4.12 K-fold Cross-Validation Results .....	23



## TABLE OF FIGURES

Figure 3.1 CRISP-DM Diagram .....	13
Figure 3.2 Dirty Data Samples .....	14
Figure 3.3 Model SVM .....	15
Figure 4.1 Data Oversampling Pie-chart .....	21
Figure 4.2 Confusion Matrix .....	23
Figure 4.3 10 Frequent Words .....	24
Figure 4.4 Wordcloud .....	25

