COMBINING LOAN FRAUD DETECTION AND DEPOSIT RISK PROFILES TO IMPROVE THE EFFECTIVENESS OF DEPOSIT RECONCILIATION AND VERIFICATION PROCESS IN IDIC

By

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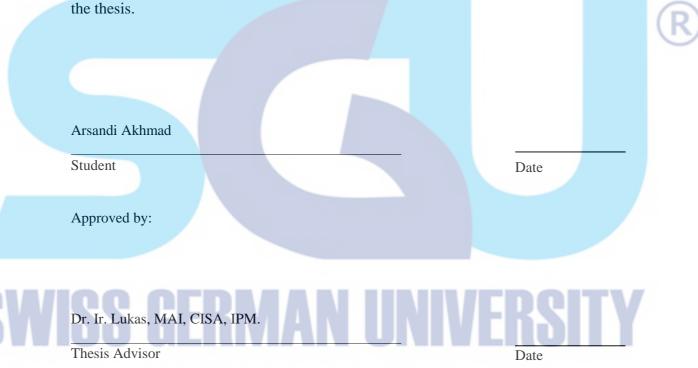
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Page 2 of 86

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my work, and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgment is made in



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Page 3 of 86

ABSTRACT

Combining Loan Fraud Detection and Deposit Risk Profiles To Improve The Effectiveness of Deposit Reconciliation And Verification Process By IDIC

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IDIC as banking regulator in the mandate to handle the failed bank has two main tasks, namely completing all bank obligations or known as the liquidation of the bank and guaranteeing deposits that exist in the bank. In carrying out its duties as deposit guarantor, IDIC conducts a series of processes called reconciliation and verification. This study discusses how to increase the effectiveness of the reconciliation process and the verification of deposits doing by IDIC. Usually, this process is complicated because most banks that fail and liquidated because fraud and the most significant portion of fraud in the failed bank is loan fraud. The existence of fraud makes the validity of the balance recorded on the core banking application doubtful. It was often found in the flow of customer deposits that funds originate from loan fraud and to ensure that it takes a long time while the period of the reconciliation and verification process is limited to ninety working days.

For this reason, IDIC need a method that can increase effectiveness in this process, especially related to the detection of fraud. So in this study, a method was developed by using depositors' risk profiles combined with the detection of loan fraud that aims to increase the effectiveness of reconciliation and verification process in order to insured deposit.

In developing this method, data is needed following the process of reconciliation and verification of deposits as noted as in Standard Operation Procedure such as data related

Page 4 of 86

to savings, deposits, loans and detailed data related to transactions. These data are processed and make the dataset in this study process and will use in loan fraud detection and depositors' risk profile.

This application uses the CRISP-DM framework with the Random Forest algorithm as the method. In this study also uses the SMOTE algorithm as handling data imbalance. The results of the analysis show that the features extracted or selected from failed bank data can be used in predicting loan fraud and insured deposit predictions with high accuracy and precision.

Keywords: data analytics, machine learning, predictions, banks, fraud, loan fraud, dataset, reconciliation, verification, IDIC, deposit, validation, training set, dataset.

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Page 6 of 86

DEDICATION

I dedicate this research for my lovely wife (Marwanti) who always supports me every single time, for my beautiful daughters (Afiqah and Adifa) who always make me happy and accompanied me everywhere to do this research.



Page 7 of 86

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SWISS GERMAN UNIVERSITY

Page 8 of 86

TABLE OF CONTENTS

Page

STATEMENT BY THE AUTHOR	2
ABSTRACT	3
DEDICATION	6
ACKNOWLEDGEMENTS	7
TABLE OF CONTENTS	8
LIST OF FIGURES 1	0
LIST OF TABLES	1
CHAPTER 1 - INTRODUCTION	2
1.1 Background	2
1.2 Research Problems 1	
1.3 Research Objectives 1	4
1.4 Research Questions 1	4
1.5 Hypothesis 1	
1.6 Research Scope and Limitation	.5
1.7 Significant of Studies	
1.8 Thesis Structure	6
CHAPTER 2 - LITERATURE REVIEW 1	8
2.1 Indonesia Deposit Insurance Corporation 1	8
2.1.1 The Function and Role of the Deposit Insurance Corporation	9
2.2 Liquidated Bank and Deposit	
2.2.1 Customer Deposit	22
2.2.2 Deposit Risk Profile	22
2.3 Fraud in Financial Industry	23
2.3.1 Classification of Fraud	24
2.3.2 Fraud Triangle	25
2.4 Random Forest	26
2.4.1 Random Forest Regression Analysis	26
2.4.2 Random Forest Definition	28
2.4.3 Classification and Regression Trees (CART)	29
2.4.4 Random Forest Algorithm	30

SN

2.5 Machine Learning Dataset
2.5.1. Feature Engineering
2.5.2. Imbalance Data
2.5.3. Data Normalization
2.5.4. SMOTE
2.6 Previous Studies
CHAPTER 3 – RESEARCH METHODS
3.1 Materials and Equipment
3.2 Analytical Method
3.2.1 Business understanding
3.2.2 Data understanding
3.1.3 Data preparation
3.1.4 Modeling
3.1.5 Evaluation
3.1.6 Validation
CHAPTER 4 – RESULTS AND DISCUSSIONS
4.1 Business and Data Understanding
4.2 Data Preparation
4.2.1 Creating Dataset
4.2.2 Dataset Balancing
4.3 Data Analysis
4.3.1 Growing the Number of Trees
4.3.2 Selection of m values (Random Subset) based on the value of the error rate 60
4.3.3 Importance Variable
4.3.4 Random Forest Prediction Results
4.4 The Effect Of Loan Fraud Predictions On Deposit Insurance
4.4.1 Insured Deposit Prediction
CHAPTER 5 – CONCLUSIONS AND RECCOMENDATIONS
5.1 Conclusions
5.2 Recommendations
GLOSSARY
REFERENCES
APPENDIX A – R Code Loan Fraud Detection
APPENDIX B – R Code Deposit Risk
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