REINFORCEMENT OF BUSINESS INTELLIGENCE APPLICATIONS IN SRI LANKAN LIFE INSURANCE INDUSTRY

Nayomi Kanchana Wickramasekara

(169141J)

Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

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Nayomi Kanchana Wickramasekara

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DECLARATION

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ABSTRACT

Business Intelligence is not a newer technology. Instead, it's an integrated solution for businesses, where business requirements are the key factors that drive technology innovation.

Nowadays Business Intelligence in financial organizations has been implemented and operated mainly to support decision making using knowledge as a strategic factor. Business Intelligence takes a vital role in insurance domain especially in life insurance sector where BI help firms in gaining business advantage mainly in decision making.

In the life insurance industry, using classification techniques on customer and product databases seems to be very effective. One of the best applications where classification can be used in the life insurance industry is for the regularity of life insurance policyholders for instalment payment depending on their behavioural attributes. That is deciding whether a life insurance policyholder is regular or irregular in premium payments by considering his or her behavioural attributes such as their demographic, social, cultural and economic data.

So in order to achieve the objective of this research, which is reinforcing business intelligence applications in Sri Lankan life insurance industry, primary data of 400 life insurance policyholders have been collected from different life insurance companies in Sri Lanka, considering the regularity of policyholders' premium payments. Five different classification techniques such as Naïve Bayes, Multi-Layer Perceptron, IBK, PART and SMO, which have been identified as most significant in classifying regularity of policyholders' premium payments, have been applied on primary data, in order to decide whether life insurance policyholder is regular or irregular in premium payments. Finally, those five classification techniques have been evaluated using evaluation techniques in order to come up with the best BI model in classifying regularity of policyholders' premium payments for Sri Lankan life insurance industry.

Key words: Business Intelligence, Naïve Bayes, Multi-Layer Perceptron, IBk, PART, SMO

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LIST OF ABBREVIATIONS

A/L - Advanced Level

AUC - Area Under the Curve

BI - Business Intelligence

CRM - Customer Relationship Management

FP - False Positive

HNB - Hatton National Bank

IBk - Instance Bases learning with parameter k

ID3 - Iterative Dichotomiser 3

IT - Information Technology

KNN - K-nearest neighbours

MLP - Multi-Layer Perceptron

O/L - Ordinary Level

PART - Projective Adaptive Resonance Theory

QP- Quadratic Programming

ROC - Receiver Operating Characteristics

SMO- Sequential Minimal Optimization

SVM- Support Vector Machine

TP - True Positive

WEKA - Waikato Environment for Knowledge Analysis