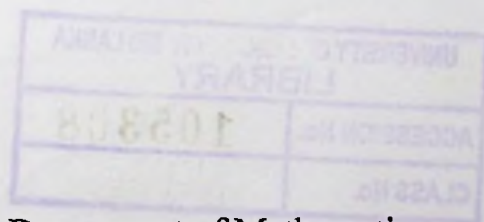


IDENTIFY THE FACTORS INFLUENCING ON GRANTING CREDIT IN LENDING INSTITUTIONS

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(08/10311)

Dissertation submitted in partial fulfillment of the requirements for the Degree
Master of Science in Operational Research



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May 2013

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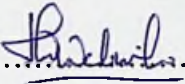
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Declaration of the Candidate

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other 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 except where the acknowledgment is made in the text.

Signature: 

Date: 22/05/2013.....

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Declaration of the Supervisor

I have supervised and accepted this thesis/dissertation for the award of the degree.

UOM Verified Signature

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Date: 23 May 2013

To my Parents and Husband

ACKNOWLEDGEMENT

Firstly, I would like to express my greatest appreciation and gratitude to my supervisor Prof. T. S. G. Peiris, Prof in Applied Statistics and the Head of the Department of Mathematics, University of Moratuwa for his continuous support, encouragement and precious guidance throughout the research. I could not have completed this thesis without his invaluable help in supervising my thesis with prompt and timely guidance.

Then I would like to thank all of my colleagues with whom I studied at the University of Moratuwa for their encouragement and assistance passed on to me throughout my M.Sc academic period are immense and highly appreciated. Last but not least, I would like to deeply thank my parents and my husband who always stand by me and they were the driving force on me during all the hardships toward the successful completion of the research.

ABSTRACT

Credit scoring system based on various criteria is widely used analysis technique of measuring customer credit worthiness by the Credit Information Bureaus (CIB) in many developed countries. However, such a system is not available in Sri Lanka. The aim of this study is therefore to identify the factors that influencing on granting credit in lending institutions in Sri Lanka and to recommend a criteria to identify potential borrowers. The required variables for the study were identified from the Bureau point of view and secondary data were collected from customer credit reports. Further, 75 customers who obtained credit were selected randomly and based on their credit profile eight important variables were derived.

The combination of Principal Component Analysis (PCA) and Factor Analysis (FA) was carried out to develop factors. The suitability of data for PCA was confirmed using Bartlett's Test ($X^2= 206.092$, $p= 0.000$) and suitability for FA was confirmed by KMO statistic ($KMO=0.532$). The results of FA showed that the initial system of 8 variables can be reduced to 2-D system which account for nearly 52% of the initial variability. Of the identified two principal components, first component came from the, "own credit history" and the second was came from "guaranteed credit history". In order to have better interpretation the results obtained from PCA were rotated using orthogonal factors namely Varimax, Equimax and Quatimax and found that the results obtained were invariant on the type of rotation. Thus it can be concluded that, own credit history and the guaranteed credit history are the influential factors on credit granting. Depending on the variance representing by each factor, it can be concluded that the own credit culture component is more significantly influence on the credit evaluation process than the guarantee component. However, in order to have the accurate credit decision on granting credit, it is required to consider both factors together by indentifying the importance depending on the representing variance. The finding in this study could be effectively employed to develop a suitable credit scoring system for the lending institutions. The study further showed the benefit of using multivariate techniques to solve some problems in lending institutes.

Key words: Principal Component Analysis, Factor analysis, Orthogonal rotations

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LIST OF ABBREVIATIONS

| <u>Abbreviation</u> | <u>Description</u> |
|---------------------|---|
| CF | Credit Facility |
| CRIB | Credit Information Bureau |
| FA | Factor Analysis |
| GRT | Guaranteed |
| KMO | Kaiser-Mayer-Olkin |
| NDIA | Number of Days In Arrears |
| NIC | National Identity Card |
| PCA | Principle Component Analysis |
| SD | Standard Deviation |
| SPSS | Statistical Package for the Social Sciences |