

Acknowledgements

I would like to express my deepest gratitude to Dr. Phattrawan Tongkamchum, my advisor and Assist. Prof. Dr. Chamnien Choonpradub, my co-advisor for their invaluable assistance, encouragement, and helpful guidance. I also wish to express my sincerest appreciation to Professor Don McNeil, who provided much constructive valuable advice regarding the thesis.

My special thanks are to all lecturers at the Research Methodology Program, Department of Mathematics and Computer Science, Faculty of Science and Technology, Prince of Songkla University, Pattani Campus for their assistance and suggestions in my thesis.

Moreover, I would like to thank all staff at the Department of Mathematics and Computer Science, for giving me helpful advice, and my thanks go to the Graduate School of Prince of Songkla University for supporting the scholarship.

Finally, my sincere appreciation is to my family, friends and colleagues for their encouragement and support.

Thantawan Kruekaew