

POTENTIAL OF UPGRADING SRI LANKAN BATIK INDUSTRY

Udya Sajeevi Ruwanpathirana

(8/8707)



Degree of Master of Science
University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Department of Textile and Clothing Technology

University of Moratuwa
Sri Lanka

August 2012

DECLARATION

“I declare that this is my own work and this thesis does not incorporate without acknowledge any material previously submitted for a Degree or Diploma in any other university or 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 person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

Signature:  University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations Date:
www.lib.mrt.ac.lk

The above candidate has carried out research for the Master’s thesis under my supervision.

Signature of the supervisor:

Date:

Abstract

This study provides a comprehensive investigation to the potential of upgrading the batik industry in Sri Lanka. The current situation of the industry was analyzed. Information on those involved in the industry was gathered using internet, National craft council, Telephone Directory and by verbal contact. A Sample of manufacturers was visited and information was recorded by using a relevant questionnaire.

A literature survey was carried out to find out the history of batik and, techniques used. The Sri Lankan industry uses a minimum of simple techniques, a handful of colour dyes and a few types of fabric available in the local market. This research was to investigate how the scope of batik could be expanded to use new fabric types and structures.

By fulfilling one objective of this study, data base of 30 suppliers were established. The information was included in this data base are name, contact information, date of start , number of worker present , Maximum number of workers, dyes and dye suppliers, Monthly capacity ,types of garments, markets, education level, and special requirements.

Experiments were carried out for new different fabric structures, which are not available in the market with the control test for cotton poplin material. Testing was carried out according to Marks and Spenser standards for colour properties. All the results were satisfactory.

After the dyeing trials were successfully conducted, a survey was carried out to asses consumer satisfaction and the market potential. A result shows that there is a potential market for batik and batik with new fabric structures.

ACKNOWLEDGEMENT

I would like to express my deep gratitude to project Supervisor, Dr Nirmali De Silva, Senior Lecturer, Department of Textile and Clothing Technology, University of Moratuwa for her patient guidance, enthusiastic encouragement and useful critiques of this research work.

I would also like to thank Dr.T.S.S.Jayawardena, Senior Lecturer, Department of Textile and Clothing Technology, University of Moratuwa and Course Coordinator of MSc program, for his advice and assistance in keeping my progress on schedule.

My grateful thanks are also extended to all batik manufacturers for their support with giving information.

I would also like to extend my thanks to the Management and technicians of the Unichela laboratory of the for their help in offering me the resources in running the program.

I am also grateful to Mr.Premarathna owner of the Saduni Batik, supporting me for batik experiments

Finally, I wish to thank my mother for her support and encouragement throughout my study.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

TABLE OF CONTENTS

	Page
Declaration	i
Abstract	ii
Acknowledgement	iii
Table of Content	iv
List of Figures	vii
List of Tables	viii
List of Abbreviations	ix
List of Appendices	x
1 Introduction	1
1.1 Background of Study	1
1.2 Research Question	2
1.3 Objectives	3
2 Literature Review	4
2.1 History of Batik	4
2.2 Historical back ground of batik form	5
2.3 History of Sri Lankan Batik Industry	6
2.4 Pioneered In Sri Lankan Batik Industry	9
2.4.1 Soma Udabage	9
2.4.2 Vipula Dharmawardana	9
2.4.3 Eric Suriyasens	10
2.4.4 Ena De Silva	10
2.4.5 Buddhi Keerthisena	11
2.5 Materials using in batik industry	11
2.5.1 Dyes and chemicals Used in Batik Industry	11
2.5.2 Reactive dyes	12
2.5.3 Vat Dyes	13

2.5.4	Naphthol dyes	14
2.5.5	Soda Ash	14
2.6	Batik Tools	16
2.7	Modern Batik Tools	17
2.8	Batik Wax	18
3	Research Framework	19
3.1	Schematic Representation of Research Framework	19
3.2	Methodology	21
3.2.1	Data collection for establish data base of Batik Supplier	21
3.2.2	Use of New Materials for Upgrading Batik Technology	23
3.2.3	Waxing Procedure	24
3.2.4	Dyeing Procedure	24
3.3	Consumer Satisfaction Survey	27
3.4	Statistic Tools Used for Data Analysis	26
4	Key Findings and Data Analysis	29
4.1	Key Findings	29
4.2	Data Base of Batik Manufacturers	36
4.3	SWOT Analysis to Over View Batik Industry in Sri Lanka	40
4.4	Qualitative Analysis of Batik Trials Carried out for New Fabric Structures	41
4.5	Qualitative and quantitative Data Analysis to Check Market for New Fabric Structures	44
4.5.1	Qualitative Analysis	45
4.5.2	Quantitative Data Analysis	45
5	Discussion	55
5.1	Current Situation on Sri Lankan Batik Industry	55
5.1.1	Environment Impact Due to Batik	56
5.1.2	Use of New Material and Technology	56

5.1.3 Quality of Designs and Manufacture of Batik in the Sri Lankan Market	57
5.1.4 Batik Techniques used in Sri Lanka	58
5.2 How Can We Improve Current Situation of SL Batik Industry	59
5.2.1 Niche Marketing	58
5.2.2 Innovation	59
5.2.3 New Technology and Government Support	59
6 Conclusions and Suggestions	60
6.1 Conclusion	60
6.2 Suggestions to Upgrade Batik Industry	62
6.3 Suggestions to Further works	62
List of References	63
Appendix A: Soma Udabage's Certificate for Batik	65
Appendix B: Research Questionnaire For batik Manufacture	66
Appendix C: Fabric Specifications	68
Appendix D: Consumer Survey Data Collection Chart	74



LIST OF FIGURES

Figure 2.1: Indonesian Copper Tjaps for Batik and Stamping	16
Figure 2.2:Tjantings	16
Figure 2.3: Flat Brushes	16
Figure 2.4: Electric Tjanting Tool & Temperature Regulator	17
Figure 2.5: Batik Dropper	18
Figure 2.6: Liquid Wax	18
Figure 3.1 Schematic Representation of Research Framework	20
Figure 3.2 Reactive and Vat Dyeing Procedure	26
Figure 4.1: Development of Sri Lankan Batik industry	29
Figure 4.2: Number of workers present and past	30
Figure 4.3: Preference According to Fabric Structure	46
Figure 4.4:Gender Wise Fabric Structure Preference	47



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF TABLES

Table 3.1 : New fabric structures used for batik trials	23
Table 3.2: Optimum waxing temperature for new fabric structure.	24
Table 4.1 Batik Manufacturers Data Base	37
Table 4.2: Analysis of current status of batik industry using SWOT	40
Table 4.3: Results of dyeing trials with reactive dye- Dark Grey	41
Table 4.4: Results of dyeing trials with reactive dye- Red	42
Table 4.5:Results of dyeing trials with Vat dye- Dark Green	43
Table 4.6: Summary of the Consumer Survey for New Fabric Structures	44
Table 4.7: Gender wise Batik Preference	45
Table 4.8: 100% Cotton Single Jersey- Gender Wise Preference	47
Table 4.9: 95% Cotton , 5% Elastain Single Jersey- Gender Wise Preference	48
Table 4.10: Crepe Design- Gender Wise Preference	48
Table 4.11: Twill weave -, Gender wise preference	49
Table 4.12: 100% Linen- Gender Wise Preference	50
Table 4.13: Dobby Design -, Gender Wise Preference	50
Table 4.14: Std cotton poplin - Gender Wise Preference	51
Table 4.15: Batik and Difference Structure Preference Age 18-24	52
Table 4.16: Batik and Difference Structure Preference Age 25-34	52
Table 4.17: Batik and Difference Structure Preference Age 35-44	53
Table 4.18: Batik and Difference Structure Preference Age 45-54	53
Table 4.19: Batik and Difference Structure Preference Age 55-above	54

LIST OF ABBREVIATIONS

Abbreviation	Description
BCE	Before the Common Era
BC	Before Christ
CE	Christian Era
PFP	Preparation For Printing
SL	Sri Lanka



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF APPENDICES

Appendix A: Soma Udabage's Certificate for Batik	65
Appendix B: Research Questionnaire For batik Manufacture	66
Appendix C: Fabric Specifications	68
Appendix D: Consumer Survey Data Collection Chart	74



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk