

**A STUDY OF MATHEMATICAL THOUGHTS IN THE
GEOMETRICAL DESIGN OF
BERTAM (WILD BORNEAN SAGO) WEAVING**

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Assalamualaikum Prof Bakar,

SUBMISSION OF FINAL REPORT OF RESEARCH ON A STUDY OF
MATHEMATICAL THOUGHTS IN THE GEOMETRICAL DESIGN OF BERTAM (WILD
BORNEAN SAGO) WEAVING

With reference to the above matter enclosed are two copies of research final report on
A Study of MATHEMATICAL THOUGHTS in THE GEOMETRICAL DESIGN of
BERTAM (WILD BORNEAN SAGO) WEAVING for your information and perusal. This
research is a contribution to widen the knowledge on traditional Malay handicrafts.

Thank you,
Yours Sincerely

Wan Norliza Wan Bakar
Head of the project

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Coordinator of URDC, UiTM Kelantan

ABSTRACT

Kelarai, a design for weaving, which is made up of various motifs can be produced by a variety of natural products. The main focus of the study is on Kelarai Bertam which is selected based on the firm and robust quality of the wood which was often used as the building materials of traditional houses. The objective of the study is to investigate the geometrical design in the weaving art of Kelarai Bertam, the stimulation of mathematical thoughts in geometrical designs and the evolution of geometrical designs in the weaving art of Kelarai Bertam. The research method utilized in the study was the triangulations method consisting of observation, interview and analysis. The findings revealed that symmetrical forms such as reflection, translation, rotation were present in the wearing of Kelarai Bertam. It is suggested that extensive research can be conducted on the combination of different weaving materials such as wild bertam and bamboo.

TABLE OF CONTENTS

	NUMBER OF PAGES
Title page	i
Letter of Transmittal	ii
Member of Research Project	iii
Acknowledgement	iv
Abstract	v
<i>Abstrak</i>	vi
Table of Content	vii
List of Figures	ix
CHAPTER 1	
INTRODUCTION	
1.0 Introduction	1
1.1 Problem Statement	2
1.2 Research Objectives	2
1.3 Research Questions	2
1.4 Significance of Research	2
1.5 Research Scope	3
1.6 Theoretical Framework	3
1.7 Definition	3
CHAPTER 2	
LITERATURE REVIEW	
2.0 Introduction	4
2.1 Mathematical Thinking	4
2.2 Geometry	5
2.3 Bertam Weaving	5

CHAPTER 1

INTRODUCTION

1.0 Introduction

Weaving is an exquisite traditional form of art inherited from our ancestors without any external influences. Weaving involves the process of criss-crossing raw materials obtained from specially selected plants to be formed into robust and usable products. There are 7 known types of weaving which are mengkuang leaves weaving (anyaman menkuang), pandan leaves weaving (anyaman pandan) wild Bornean Sago Leaves Weaving (anyaman bertam), rattan core weaving (anyaman rotan) coconut leaves weaving (anyaman lidi) and fern leaves weaving (anyaman ribu). It is stated that wild Bornean Sago is a type of palm which can be found in only certain forests such as in Malaysian and Thai forests wild Bornean Sago has special features and benefits which cannot be found in other species of palms wild Bornean Sago became the primary choice of our ancestors in the construction of house roofs and walls as they can last up to ten or fifteen years. Any small damages could be fixed only by replacing the broken part with a new one. The plant was believed to have many advantages as it is cooler and does not keep heat like clay roofs which are being widely used today. The weaving of Bertam has undergone a lot of evolution in terms of products and designs. Today, bertam weaving is no longer used for house roofs and walls but has been made commercial for protective and decorative castles in Perak, one of the famous tourist attractions.