



Faculty of Applied and Creative Arts

**Reimagining *Marik Empang* with Bamboo Beads: A Sustainable
Framework for Contemporary Costume Design**

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**Master of Arts
2025**

Reimagining *Marik Empang* with Bamboo Beads: A Sustainable Framework
for Contemporary Costume Design

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A thesis submitted

In fulfillment of the requirements for the degree of Master of Arts

(Design Technology)

Faculty of Applied and Creative Arts

UNIVERSITI MALAYSIA SARAWAK

2025

DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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Date: 14 October 2025

ACKNOWLEDGEMENT

I am deeply grateful to everyone who has contributed to the completion of this research. I would like to express my most profound appreciation to my supervisor, Dr Marzie Hatef Jalil, for her expert guidance and support throughout the research process. Her kind feedback and mentorship have been instrumental in shaping this work.

I would also like to thank Professor Dr. Faisal Ali Bin Anwarali Khan, the dean of the Faculty of Resource Science and Technology, who was willing to give me access to the SEM lab, and Sir Shafri Bin Semawi, who assisted me with the equipment. Besides, I am indebted to Dr Abang Mohammad Nizam bin Abang Kamaruddin and Ir. Rudiyanto Philman Jong from the Faculty of Engineering, who shared meaningful insights with me during the sample testing.

I am thankful to Madam Connie Kam and Madam Ina Sendar for giving me informative knowledge in interview sessions, and to the participants who shared their time and insights in observation and survey. My heartfelt thanks go to my family for their constant support and belief in my abilities. To all those who have played a part, big or small, in this journey, I am truly grateful. I extend my sincere gratitude to the Centre for Graduate Studies for the advice and support provided during my studies at Universiti Malaysia Sarawak. Finally, I would like to thank the management of Universiti Malaysia Sarawak for making it possible for me to complete my studies here in Sarawak. Thank you all.

ABSTRACT

This research discusses contemporary costume design that draws inspiration from Sarawak's traditional *Marik Empang* weaving technique. In Sarawak, the unique bead weaving known as “*Marik Empang*” is a cultural icon that embodies centuries-old *Iban* craftsmanship. Through the incorporation of *Marik Empang* features into contemporary costume design, the project aims to bring together tradition and modernity, providing an innovative perspective on cultural heritage. Although the adaptability of bamboo in creative applications has been acknowledged, there is nevertheless a noticeable lack of creative bamboo designs, especially in the field of contemporary costume design. Research to date suggests that costume designers rarely experiment with bamboo designs. This emphasizes the necessity to explore previously untouched creative domains. Additionally, there is a recognized disconnect between traditional crafts and contemporary design, demanding more in-depth research into how these two domains can be brought together. The study employs a studio-based approach, integrating data-driven insights with an artistic approach to determine the type of raw bamboo that is ideal for bead weaving. A collaborative relationship between creative development and cultural preservation is intended to be achieved by merging traditional weaving techniques with contemporary design processes. The research evaluated four bamboo types for bead-making, and types B and C were the best due to their larger inner holes and characteristics analyzed in SEM. Three stringing materials performed well in water soaking tests, allowing the researcher to proceed according to the design requirements. The addition of natural seed beads enhanced the creative aesthetic of the designs. A survey conducted using Google Forms and an exhibition at Sarawak Ethnic Elegance: Sustainable Fashion Design Competition 2.0 and Booth 2025 yielded positive feedback regarding the aesthetics, functionality, cultural value, quality, and pricing of the costume designs. The

research definitively shows that integrating bamboo beads into contemporary costume design enhances aesthetic value while preserving the local cultural heritage of *Marik Empang* patterns.

Keywords: Raw bamboo, Bamboo beads, Contemporary costume design, *Marik Empang* pattern, Cultural heritage

***Pembayangan Semula Kraft Marik Empang dengan Penggunaan Manik Buluh:
Rangka Kerja Lestari untuk Rekaan Kostum Kontemporari di Sarawak***

ABSTRAK

Penyelidikan ini membincangkan reka bentuk kostum kontemporari mendapat inspirasi daripada teknik anyaman manik tradisional Marik Empang di Sarawak. Di Sarawak, hasil anyaman manik yang unik dikenali sebagai “Marik Empang” merupakan lambang budaya yang mencerminkan kemahiran kraf tangan turun-temurun kaum Iban. Melalui penggabungan elemen Marik Empang ke dalam reka bentuk kostum kontemporari, projek ini bertujuan untuk menggabungkan tradisi dan kemodenan, sekali gus memberikan perspektif baharu terhadap warisan budaya. Walaupun kebolehsuaian buluh dalam aplikasi kreatif telah diakui, masih terdapat kekurangan ketara dalam reka bentuk kreatif berasaskan buluh, terutamanya dalam bidang reka bentuk kostum moden. Kajian terdahulu menunjukkan bahawa pereka kostum jarang bereksperimen dengan reka bentuk menggunakan buluh. Hal ini menekankan keperluan untuk meneroka domain kreatif yang belum diterokai. Di samping itu, terdapat jurang yang dikenal pasti antara kraf tradisional dan reka bentuk kontemporari, yang memerlukan kajian lebih mendalam tentang bagaimana kedua-dua bidang ini boleh digabungkan. Kajian ini menggunakan pendekatan berasaskan studio dengan menggabungkan analisis berasaskan data dan pendekatan artistik untuk menentukan jenis buluh mentah yang paling sesuai digunakan dalam pembuatan manik. Hubungan kolaboratif antara pembangunan kreatif dan pemeliharaan budaya ingin dicapai melalui gabungan teknik anyaman tradisional dengan proses reka bentuk kontemporari. Kajian ini telah menilai empat jenis buluh untuk pembuatan manik, dan jenis B dan C didapati terbaik berdasarkan saiz lubang dalam yang lebih besar serta ciri-ciri yang dianalisis melalui SEM. Tiga jenis bahan tali yang diuji menunjukkan prestasi yang baik

dalam ujian rendaman air, membolehkan penyelidik meneruskan proses berdasarkan keperluan reka bentuk. Penambahan manik biji semula jadi telah meningkatkan nilai estetik reka bentuk. Satu tinjauan yang dijalankan melalui Google Forms dan pameran di Sarawak Ethnic Elegance: Sustainable Fashion Design Competition 2.0 and Booth 2025 telah menunjukkan maklum balas positif terhadap aspek estetika, fungsi, nilai budaya, kualiti, dan harga reka bentuk kostum. Kajian ini secara jelas menunjukkan bahawa integrasi manik buluh ke dalam reka bentuk kostum kontemporari mampu meningkatkan nilai estetik sambil memelihara warisan budaya tempatan corak Marik Empang.

Kata kunci: *Buluh asli, Manik buluh, Reka bentuk kostum kontemporari, Corak Marik Empang, Warisan budaya*

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LIST OF ABBREVIATIONS

BDC	Borneo Development Corporation
S.D.	Standard Deviation
SPSS	Statistical Package for the Social Sciences
STIDC	Sarawak Timber Industry Development Corporation

CHAPTER 1

INTRODUCTION

1.1 Study Background

This study discusses the reimagining of *Marik Empang* beadwork with a sustainable framework for contemporary costume design in Sarawak. The utilization of raw bamboo in contemporary costume design was an insightful investigation into sustainable materials and cultural identity. The integration of new sustainable materials, such as bamboo, has added creativity and innovation to traditional crafts in Sarawak, creating new possibilities for incorporating cultural meanings into contemporary costume design.

Contemporary represents something happening or occurring at the same time (Man, 2010). According to Pitts and Price (2020), contemporary art can be described as innovation or pushing boundaries forward into the future, rejecting traditional forms or something that is different and has not been done before. Contemporary design and contemporary costume design are distinct yet interrelated fields that focus on current trends, innovation, and their significance to modern culture. A contemporary piece can spark with the idea of using technology to reflect the changes from ordinary to extraordinary creatively (Pitts & Price, 2020).

Currently, the next-generation textiles (NGTs), a contemporary textiles that incorporate the latest developments in materials, technologies, and functions, represent a paradigm change in the textile industry in a contemporary way (Hossain et al., 2024). The utilization of innovative materials, including recycled materials and bio-fabrics (Rognoli et al., 2022), with techniques such as restructuring, laser cutting, natural dyeing, and 3D

printing (Chen et al., 2021), has been observed in recent years to explore the possibility of creating more durable, lighter, comfortable (Yang & Moody, 2021), aesthetic and eco-friendly products (Hossain et al., 2024). According to Sriyadi et al. (2024) and Sokari (2024), the costume design delivered messages, emphasized storytelling and cultural expression by showcasing the purpose of the costume through design themes, thereby achieving a performance or specific event aesthetic. Recently, the collaboration of costume designers with other industries has become a common practice, including artists, architects, and product designers (Gerrie, 2024). This interpretation of skills, techniques, materials, or ideas is effective in producing more creative, innovative, and meaningful costumes, thereby widening the market to attract a broader audience (Gerrie, 2024).

Bamboo is readily available and widely cultivated in Kuching, Malaysia, due to the country's ideal climate (Huang, 2021). Bamboo is a low-maintenance plant, as it does not require special care, chemical fertilizers, or pesticides, unlike other plants (Saxena & Khare, 2024; Nayak, 2022; Dorfman, 2011). Bamboo can rapidly grow naturally by adapting to its surroundings through the spread of its root system, eliminating the need for replanting (Dorfman, 2011). Additionally, bamboo has been notable for its strength, lightweight, flexibility, durability, and sustainability as an ideal material for a wide range of uses in daily life and traditional crafts over the past few decades (Chattopadhyay P. K. B.Tech. et al., 2022). Its ability to bend without breaking allows it to be shaped into various forms, while its durability ensures longevity. Local natives and artisans utilized bamboo to craft a wide range of items, including buildings, furniture, baskets, mats, containers, and decorative objects (Ratuannisa et al., 2024; Lee, Al-Edrus, & Tahir, 2023; Kumar et al., 2021; Hassan et al., 2015). This made bamboo remain in use by designers and artisans due to its versatility, durability, and sustainability.

Marik Empang (*Marek Empang*), also known as *tango* or *tangu*, is a beaded necklace or part of the traditional costume of the *Iban* ethnic group in Sarawak, Malaysia (Sutlive & Sutlive, 2001; Munan, 2005). This beaded work was often worn as a collar during cultural ceremonies, celebrations, significant events, and most importantly as an accessory for the *Iban* bride to wear around the neck (Ong, 2004). It is strung up with threads and numerous colorful, tiny seed beads to create intricate patterns and motifs that carry the *Iban*'s symbolic identity and meanings (Sutlive & Sutlive, 2001). It is believed that the *Marik Empang* serves as a modern alternative to the traditional, heavy, and uncomfortable layers of the *Iban* beaded costume (Munan, 2005). Although *Marik Empang* is still used for decoration and ornamentation during ceremonies, it has been observed that it has evolved into stylish modern ornaments or souvenirs to meet current market demand, due to its lightweight, comfort, and simplicity of wear.

In short, this research aimed to explore the utilization of bamboo as an alternative material for making *Marik Empang*. It was clear that bamboo was widely used in various industries, such as construction, furniture, and crafts; however, its use in the fashion industry, especially in beading design, remained very limited or almost unseen. This study aimed to investigate the potential of bamboo as a beading material due to its lightweight nature, strength, flexibility, durability, and sustainability. By doing so, the research developed contemporary costume designs that were lighter and more comfortable to wear, while preserving the traditional and cultural value of *Marik Empang*.

1.2 Problem Statement

Sarawak is renowned for its local handicrafts, including textile weaving, forest-based crafts, and traditional costume craftsmanship. Malaysia's natural resources, such as rattan

and bamboo, are ideally suited for creating eco-friendly furniture. The strong fronds of the sago palm, dyed in various shades, are then woven into intricate jewellery, baskets, hats, and rugs (Hospitality, 2019). According to Lias et al. (2020), bamboo is one of the natural resources that are easily found in our environment and widely used in the production of handicrafts and interior decorating products. The recent resurgence of the bamboo industry in Sarawak can be attributed to both government support, such as the expansion of bamboo plantations, and the innovations within the bamboo industry itself.

According to Luo et al. (2020), the size, functions, and materials of local bamboo crafts, as well as their marketing strategies, have been modified to adapt to new development trends and cater to the market. Additionally, weavers used various materials and colors to improve the longevity and attractiveness of their creations (Liufu et al., 2023). The first challenge was that the innovative bamboo designs are rare (Sun & Liu, 2022). Secondly, the bamboo designs in Sarawak were primarily focused on furniture, decorative products, and craft designs. However, the spark of bamboo innovation in Sarawak was focused on handicrafts, food containers, toys, furniture, musical instruments, flooring material, paper, pulp, and vessels (Osman, 2021). Despite the growing innovations in bamboo utilization in Sarawak, the bamboo designs were not applied in Sarawak's costume design, as Perumal et al. (2022) stated that bamboo was employed by various communities in a range of applications, including agriculture, construction, arts and crafts, and furniture production, without mentioning its application in Sarawak's costume design. Additionally, Sun and Shao (2021) noted that the gap between traditional craftsmanship and modern design requires further investigation. There is limited existing research that considers bamboo as a material in fashion and costume studies in Sarawak, particularly in its application to *Marik Empang*. This lack of a theoretical basis has created a gap in the understanding of how bamboo can

be considered both a sustainable material and an innovation for cultural expression in fashion design research.

Bamboo is well-known for its ecological benefits and versatility. However, its potential for use in beadwork and textile applications in costume design in Sarawak has not yet been systematically explored or documented. There is a lack of research examining the properties of bamboo beads, their compatibility with various stringing techniques, and their potential to reimagine *Marik Empang* motifs in a contemporary way. Transforming bamboo into suitable costume materials that balance aesthetics, durability, and cultural value is challenging for designers and artisans without such investigations. The modern development of traditional handicrafts has been well combined with the bamboo industry, contributing to the sustainability of crafted items (Luo et al., 2020). Bamboo beading offered a unique natural texture and appearance, provided a distinct aesthetic, and the lightweight bamboo beads make it comfortable to wear. Adding creativity to bamboo beading patterns aimed to attract and raise awareness among youngsters, bringing back a heritage identity that can be used daily.

1.3 Research Questions

Based on the challenges mentioned above in the problem statement, this research aimed to address the following questions:

Research Question 1: What types of bamboo materials are most suitable for crafting sustainable beads inspired by the *Marik Empang* patterns of Sarawak?

Research Question 2: Which *Marik Empang* patterns are most adaptable for integration into contemporary sustainable costume design?