

Nawat Phusa: Promoting innovation of natural banana fibers into product design to enhance cultural creative economy products through performing arts approach

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Abstract: This study investigates the origin and conceptual development of innovative banana fiber fabrics for application in the performing arts. Utilizing qualitative and creative research methodologies, data were collected through academic document analysis, interviews, multimedia sources, field surveys, and the researcher's experiential insights. The data were systematically analyzed and presented in both academic and performing arts frameworks. The findings indicate that banana fiber fabric represents a significant form of cultural capital in Pathum Thani Province, serving as the basis for developing textile innovations derived from banana fibers. This process integrates local wisdom grounded in the philosophy of a sufficiency economy. The study further identifies eight key elements of dramatic arts essential for integrating banana fiber fabrics into the performing arts: (1) performance design, (2) performer selection, (3) choreography design, (4) prop design, (5) sound and music composition, (6) costume design, (7) lighting design, and (8) performance space design. These elements were examined with respect to creativity, symbolism, and theoretical frameworks in dance, music, and visual arts.

Keywords: *Banana fiber fabric, Cultural capital, Local wisdom, Performing arts design, Textile innovation.*

1. Introduction

Cultural tourism has become increasingly significant on both national and international levels, serving as a vital resource for economic development. This growing awareness underscores the importance of preserving and leveraging cultural heritage to promote local tourism. Cultural identities, while abstract, can be transformed into tangible resources, such as handicrafts, festivals, and performing arts, which enhance the uniqueness and appeal of tourist destinations. The National Economic and Social Development Plan No. 13 (2023–2027) highlights the "Good Mood and Happiness Model," emphasizing cultural and geographic diversity as key drivers of the creative economy, or Creative Industries (CI). These industries encompass four categories: cultural heritage, arts, media, and functional creation, relying heavily on creativity to produce goods and services that integrate cultural capital into economic value [1].

Among cultural expressions, performance or dramatic arts stand out as a creative industry that reflects local beliefs and lifestyles. Traditional performances serve as markers of cultural identity, passed down through generations. However, societal changes have disrupted this transmission in many regions. Modern lifestyles often disconnect communities from their cultural roots, leading to the erosion of local performances. This decline results from a lack of engagement from younger generations, who may perceive traditional arts as irrelevant or unprofitable. Consequently, many traditional art forms are

at risk of disappearing. On the other hand, some areas have adapted local arts and culture to align with contemporary life, emphasizing that culture is fluid and evolves with societal changes [2, 3].

Local performances, as a form of cultural capital, have the potential to generate significant economic and social value when developed appropriately. Effective integration of traditional arts into modern contexts requires a balance between preservation and innovation. Previous studies, such as Jaiwisuthansa [4] highlight the role of performing arts in promoting cultural identity, conservation, and tourism. However, gaps remain in understanding how to modernize traditional arts in a way that aligns with contemporary economic and social demands while retaining their cultural essence.

Despite the acknowledged importance of dramatic arts in cultural tourism, traditional performances in many communities face significant challenges. These include a lack of community engagement, insufficient transmission of knowledge to younger generations, and limited adaptation to modern contexts. Additionally, while dramatic arts have been recognized for their economic potential, there is insufficient exploration of how local materials and innovations—such as banana fiber fabrics—can contribute to both artistic and economic development.

Although extensive research exists on the role of performing arts in cultural tourism, few studies have examined the integration of innovative materials, such as banana fiber fabrics, into the development of local performances. The use of banana fiber cloth, a cultural capital of Pathum Thani Province, offers a unique opportunity to modernize traditional arts while preserving their cultural identity. Existing research has not adequately addressed how such innovations can bridge the gap between traditional and contemporary art forms, support sustainable tourism, and enhance community participation.

This study seeks to address these gaps by exploring the development of performances that incorporate banana fiber fabrics as a medium for promoting cultural tourism. It aims to investigate processes that maintain community identity, foster local participation, and enhance the value of cultural products, contributing to the broader goals of sustainable tourism and the creative economy.

1.1. Objective

1. To examine the historical origins and conceptual framework underlying the development of innovative fabrics derived from natural banana fibers.
2. To identify and analyze patterns and presentation elements of natural banana fiber fabric innovations that can be applied to product design, with the aim of enhancing cultural creative economy products through the lens of creative performance.
3. To evaluate the conceptual insights and implications gained from the process of creating performance works utilizing natural banana fiber fabrics.

2. Method

Research Design: This study employs a mixed-method approach integrating qualitative research and creative research methodologies. It involves four stages: literature review and data collection, field data collection, data analysis and synthesis, and creation and dissemination of creative works. The research emphasizes the exploration of innovative natural banana fiber fabrics and their application in performance art to enhance cultural creative economy products.

Sample: The sample comprises two main groups:

1. Documents and Media: Academic books, research papers, journals, and other media relevant to banana fiber fabric innovation, semiotic theory, and creative work in the performing arts.
2. Respondents for Field Data Collection: Key informants including academics, local artisans, and experts in performance art, selected through purposive sampling.

Research Instrument: The study utilized the following research instruments:

1. Document Analysis Guide: A checklist for extracting data related to the development of banana fiber fabrics and their application in performing arts.

2. Interview Guides: Structured and semi-structured interview protocols tailored for individual and group interviews. These focused on the origins of banana fiber fabric innovation and creative performance art.

3. Evaluation Framework: Criteria for assessing the creative performance, including eight performance elements: performance design, style, actors, music, costumes, props, lighting, and stage design.

2.1. Data Collection Method

1. Literature Review and Documentary Research: Data were gathered from books, academic papers, articles, and other information sources on banana fiber fabrics, semiotic theory, and dramatic arts.

2. Field Data Collection: Conducted through in-depth individual and group interviews with stakeholders and experts. Interview topics included: Origins and development of banana fiber fabric innovation, Creative dance forms and their integration into performance art.

3. Creative Development and Experimentation: Creative experiments were carried out to design performances based on the eight performance elements.

4. Performance Evaluation and Dissemination: Consultations and evaluations with six experts in the field of dance were conducted after a preliminary presentation, Dissemination occurred through public performances, exhibitions, and online platforms.

2.2. Data Analysis

1. Document and Field Data Analysis: Data from literature, interviews, and field observations were analyzed qualitatively. Thematic analysis was used to synthesize insights for the creative development process.

2. Creative Performance Evaluation: Expert evaluations were analyzed statistically to measure satisfaction and appropriateness. The creative performance Nawat Phusa (Pha) Yaikluay received the highest satisfaction level with a mean score of 4.70 (SD = 0.47).

3. Creative Outputs Dissemination: Feedback from exhibitions, performances, and online dissemination was analyzed to assess the impact and reception of the creative work.

Dissemination: The Nawat Phusa (Pha) Yaikluay performance was showcased at multiple venues and events, including The 5th RMUT Innovation Awards 2023, The 8th International STEM Education Conference 2023, and The 11th SWU International Festival of Art and Culture. The performance was also published online via the YouTube channel "RMUTT Channel."

3. Result

3.1. Objective 1: To Study the Origin and Ideas for Developing Innovative Fabrics from Natural Banana Fibers

The study reveals that bananas are a significant economic crop in Thailand, with increasing global demand driven by health-conscious consumer trends. This demand has led to an expansion in banana cultivation areas, particularly in Pathum Thani Province, which ranks as the largest banana-growing region in the central part of the country. Annual banana production in this province is approximately 44,590.98 tons. Apart from their medicinal properties, banana fibers from sheaths and stalks exhibit exceptional characteristics suitable for further processing into various products, aligning with the findings of the Farmers Council Office [5]. Department of Intellectual Property [6] bananas are registered as Geographical Indications (GI) by the Department of Intellectual Property, Ministry of Commerce, emphasizing their economic importance.

The innovative use of banana fibers has been spearheaded by Associate Professor Dr. Sakorn Chonsakorn from the Faculty of Home Economics Technology, Rajamangala University of Technology Thanyaburi. Dr. Chonsakorn has developed a method to extract fibers from banana sheaths and stalks, which are subsequently spun into yarn. These fibers are noted for their strength and gloss [7] findings corroborated by prior research. For example, Rattanachaisit, et al. [8] demonstrated that mechanical improvement processes enhance the characteristics and properties of plant fibers, making them finer,

softer, and easier to spin. Similarly, Aekularn and Chaumphon [9] emphasized the importance of improving fiber quality to meet specific functional requirements, including producing yarn with high fiber content and distinct physical properties.

Further development involves weaving the banana fibers into fabrics using techniques such as 2-heddle, 4-heddle, and 6-heddle looms. These methods, combined with variations in color and weft patterns, result in fabrics with unique textures and lightweight properties, similar to wool. Such fabrics are comfortable to wear and versatile for various applications, including apparel and home textiles.

One notable example of the application of banana fiber innovation is the Mae Baan Saeng Tawan Community Enterprise Group in Krachaeng Subdistrict, Sam Khok District, Pathum Thani Province. This group has pioneered the production of BUALUANG-Banana Fabric, recognized as the provincial fabric of Pathum Thani Province. Their production processes incorporate traditional weaving techniques and modern innovations, transforming banana fibers into a symbol of local identity and economic value.

These findings highlight the potential of banana fiber as a sustainable resource for textile innovation. They also demonstrate the integration of traditional craftsmanship with technological advancements to create products that support cultural and economic development. This aligns with broader efforts to promote sustainability and the creative economy through the innovative use of natural resources.



Figure 1.
The process of developing innovative natural banana fiber fabrics.
Source: [10].

Objective 2: To Identify Patterns and Presentation Elements from Innovative Natural Banana Fiber Fabrics Toward Product Design to Enhance Cultural Creative Economy Products through the

3.2. Dimension of Creative Performing Arts

The study identified the following key findings:

3.2.1. Performance Design

The creation of the performance, titled Nawat Phusa (Pha) Yaikluay, was inspired by the innovative development of banana fiber fabric, a cultural capital of Pathum Thani Province. The design was structured into three phases:

Phase 1: From Natural Fibers – Depicts the origins of banana fiber production, symbolizing the natural environment and agricultural practices of banana plantations.

Phase 2: Woven into Cloth – Highlights the innovation of transforming banana fibers into textile products, emphasizing the process of weaving and fabric production.

Phase 3: Upgrading Cultural Products – Demonstrates the application of banana fiber fabrics to cultural products, enhancing their commercial and cultural value.

This performance reflects the use of local knowledge and the sufficiency economy philosophy in creating sustainable and culturally significant products. The findings align with Natayakul [11] who emphasized that artistic creations originate from inspiration influenced by external or internal factors. The study also confirms that performance design involves conceptualizing and structuring artistic ideas to align with objectives, as suggested by Charassri [12] and Chantanasaro [13].

3.2.2. Performer Selection

Sixteen performers (10 female and 6 male) were selected based on their experience, physical characteristics, acting skills, and understanding of the performance's concepts. The performers demonstrated high levels of discipline, dedication, and the ability to convey emotions effectively. The selection process adhered to criteria outlined by Natayakul [11]; Saitongkum [14] and Iamsakul [15] emphasizing the importance of matching performers' skills and personalities with the creative vision of the performance.

3.2.3. Style of Dramatic Arts

The performance style incorporated natural gestures and imaginative choreography to depict the banana fiber production process. The movements were designed to express inner emotions and narratives through modern dance techniques, creating a balance between visual symbolism and rhythmic synchronization. The choreography integrated elements of traditional Thai dance with contemporary styles, resulting in a unique and meaningful presentation.

This finding aligns with Charassri [12] and Sensai [16] who highlighted the importance of blending traditional and modern elements in creative dramatic arts. The approach also reflects the emphasis on developing new movement styles that resonate with the emotional and thematic essence of the performance, as described by Wisedsing [17]. These findings illustrate how the integration of cultural heritage, innovative materials, and creative performing arts can enhance the cultural and economic value of products, contributing to the sustainability of local communities. The performance serves as a model for utilizing artistic expression to promote cultural identity and the creative economy.



Figure 2.

Designing the style using symbols that convey the nature of the banana tree in the context of the performance.

Source: [10]

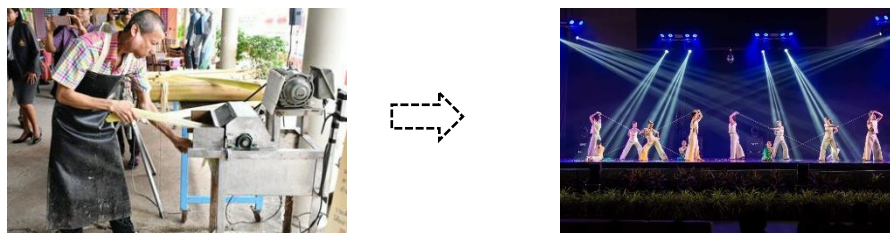


Figure 3.

Designing a style using symbols that convey the banana fiber development process in the context of performance.

Source: [10]

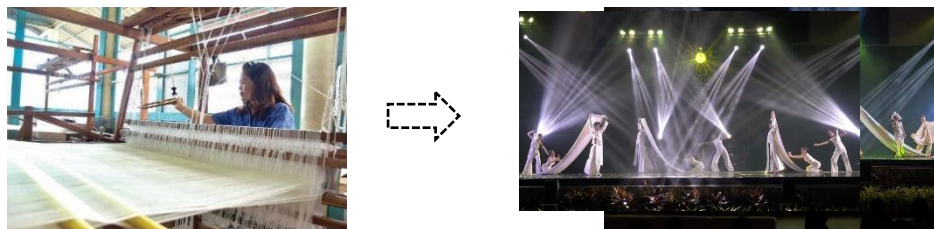


Figure 4.

Designing the style using symbols that convey the weaving of banana fiber fabric in the context of the performance.

Source: [10]

4. Sound and music design, the research team prioritized emotional conveyance in designing the sound and music for the performance, aiming to foster a shared imaginative experience between the performers and the audience. The following elements were emphasized:

Emotional Atmosphere: Different musical arrangements were used to represent each phase of the performance. Natural sounds and overtones were integrated in the first phase to evoke the essence of nature. In the second phase, dynamic interplay of music was used to symbolize the weaving process. The third phase incorporated rhythmic diversity to depict the variety of products made from banana fiber cloth.

Fusion of Traditional and Electronic Sounds: The music combined traditional Thai elements with electronic instruments, creating a unique identity while preserving Thai cultural essence.

This approach aligns with Tunthong [18] who stated that sound design should evoke emotions that complement the performance and engage the audience. The findings also resonate with Saitongkum [14] who emphasized the importance of transitions in tempo and rhythm to enhance grandeur and emotional impact. Additionally, Phanomrak (cited in Poonpakdee [19]) noted that sound design is integral to storytelling, creating imagination, and enhancing the audience's experience.

5. Costume design Costumes were designed to harmonize with performers' movements, reflecting the gestures of the performance and emphasizing elegance and modernity. Key considerations included:

Integration of Natural Banana Fiber: The natural color and texture of banana fibers were utilized to unify the costumes with the theme of the performance.

Visual and Functional Design: Costumes featured splashes of color to add dimension while maintaining comfort and freedom of movement during the performance.

These findings are consistent with Nopudomphan [20] and Ngerndang, et al. [21] who emphasized the importance of aligning costume design with performance concepts, styles, and elements. Phochanatarn [22] highlighted those costumes should reveal the personality, status, and background of the performer, supporting the narrative while facilitating physical expression. Furthermore, Patkulpisan (cited in Poonpakdee [19] and Bootchai [23]) noted that costume design should consider the practicality of movement and the communication of thematic elements through color and form.

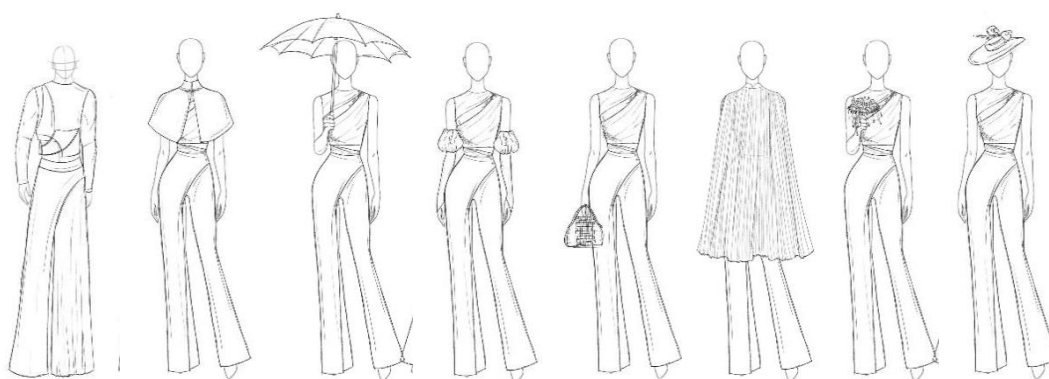


Figure 5.
Draft of costumes and equipment for male and female actors.
Source: [10].



Figure 6.
Prototypes of costumes and equipment for male and female actors.
Source: [10].



Figure 7.
Costume sets and equipment for male and female actors.
Source: [10].



Figure 8.
Organizing group shots of male and female actors' costumes and equipment.
Source: [10].

6. Design of performance equipment, the research team developed performance equipment to symbolize the narrative progression across the stages of the performance: from natural fibers, through the weaving process, to product development as cultural economic items. The props were designed to enhance the connection between scenes and events and represent the themes of innovation and cultural

significance associated with banana fiber. This aligns with Jirakanon [24] who emphasized that props are essential for creating a believable performance environment, helping the audience engage with the world depicted on stage. Similarly, Cooper [25] noted that props can convey contextual information about time, place, and meaning, serving as visual storytelling tools.

7. Lighting design, Lighting was crafted to convey emotions, support the atmosphere, and stimulate audience imagination. The following design choices were made: Dim Lights: Used at the beginning to evoke a natural, serene atmosphere and encourage imagination. Bright Lights with Color Effects: Green and yellow lights highlighted banana trees, while flashing effects marked transitions. Continuous Bright Lighting: Emphasized the transformation of banana sheaths into fiber cloth, culminating in a vibrant fashion show presentation. These techniques are consistent with Charassri (cited in Wisedsing [17]), who highlighted the importance of lighting in enhancing emotions and the overall appeal of performances. Additionally, Kosolhemani [26] supported integrating modern lighting techniques with traditional performances to create unique and engaging visuals.

8. Designing the performance space, the performance space was meticulously designed to harmonize choreography, actor movements, and lighting. The key design elements included: Actor Placement: The strategic positioning of all 16 performers was designed to highlight focal points and ensure clarity in the narrative. Use of Stage Area: The stage was arranged in a balanced, dynamic way to evoke emotions and maintain the audience's engagement throughout the performance. These design principles are in line with Iamsakul [15] who stressed the importance of aligning stage size with performer placement. Saitongkum [14] similarly emphasized the emotional depth created by utilizing varied stage spaces. Moreover, Natayakul [27] pointed out the need to define stage boundaries to effectively guide the audience's focus. Rungthanapirom [28] advocated for applying artistic composition principles, such as balance, focal points, and relationships between elements, to amplify both the visual and emotional impact of the performance.

3.3. Objective 3: To Study the Ideas Obtained after Creating Performance Works

1. Creativity in Dramatic Arts: Creativity in the creation of the performance script is demonstrated through the integration of innovative natural banana fiber fabrics with performance design elements. The choreography, costumes, and accessories are intentionally minimalist, reducing unnecessary elements and colors to create a unique, post-contemporary dance style. The performance space design aligns with theories of form, shape, and pattern in visual arts, enhancing the performance's appeal and introducing fresh, original elements that distinguish it from past works.

2. Use of Symbols in Dramatic Arts: The use of symbols plays a central role in the creation of dramatic arts, particularly in the choreography. Natural gestures, imaginary poses, and movement directions are utilized to convey meaning, while props, costumes, and lighting design incorporate symbols and colors that reflect the overall mood and themes of the performance. These elements work together to create a dance performance that is engaging, innovative, and distinctive.

3. Theories of Dramatic Arts, Music, and Visual Arts: The integration of dramatic arts, music, and visual arts is central to the creation of the performance, ensuring a cohesive connection between the style of performance and the content of each act. The music design emphasizes a shared imagination between the performers and the audience, with original compositions that tell the story through different musical phases. The orchestral music begins with natural overtones to evoke nature, progresses with a rhythmic interplay to symbolize the weaving of fibers, and culminates in varied rhythms that express the diversity of banana fiber fabric products; evoking emotions aligned with the movement style. In terms of space design, the large stage facilitates the presentation of a creative performance with multiple performers and complex equipment. The entry and exit directions are carefully considered to enhance the flow and impact of the performance. Through the combination of visual arts, dramatic arts, and music, the performance becomes a dynamic and engaging artistic expression.

4. Discussion and Conclusion

The research team has emphasized creativity in the development of a dance performance centered around banana fiber cloth, a cultural asset of Pathum Thani Province. The performance aims to highlight the value of agricultural by-products, such as banana sheaths, by transforming them into innovative textiles. These banana fibers were tested for appearance and strength according to ASTM D 3822-01 [29, 30]. The fibers were found to consist of three distinct layers, each varying in quantity and color. After drying, the fibers were collected and spun into yarn [31] which was then used to create cultural products that promote commercial value, enhancing the creative economy.

The performance integrates knowledge and local wisdom based on the Sufficiency Economy Philosophy, ensuring the production of items that resonate with contemporary lifestyles. These include clothing, accessories, and various household items that represent valuable handicrafts and the identity of Pathum Thani Province. The integration of these cultural elements into the performance helps foster economic sustainability within the community.

The performance design, informed by eight key elements (1) performance design, (2) selection of performers, (3) dramatic arts design, (4) sound and music design, (5) costume design, (6) performance equipment design, (7) lighting design, and (8) performance space design, served as a framework for experimenting with and refining the creative process. The final dance performance, titled Nawat Phusa (Pha) Yaikluay, successfully combined theoretical and creative elements from various art forms, including dance, symbolism, and cultural representation, to create an engaging and meaningful work.

This research aligns with the works of Charassri [12] on contemporary Thai dance, emphasizing the use of cultural diversity and innovative performance formats to appeal to younger generations. It supports the theory of beauty in performing arts, demonstrating how new styles of dance can engage audiences while honoring cultural traditions. Additionally, the study is consistent with Nopudomphan [32] exploration of cultural symbolism in Thai dance and Chantamala [33] study of traditions and identities reflected in dancing performances for worship in Northeast Thailand.

This creative work also contributes to the broader field of contemporary dance by using semiotics and cultural symbols to convey deeper meanings related to beliefs, cultural products, and ways of life. As such, it becomes a part of the growing body of research on creative dance, such as works by Katekeaw and Charassri [34] and Wichasawat [35]. This study further extends the use of local handicraft wisdom, including the creation of costumes and performance elements from traditional materials such as silk and banana fibers, as explored by various researchers in related fields.

By integrating qualitative and creative research methodologies [36] the researcher demonstrates the capacity to produce meaningful work that is both academically rigorous and artistically innovative. As Virulrak [37] and Iamsakul [15] suggest, creative dramatic arts involve the synthesis of philosophy, content, and aesthetics, allowing for the creation of new choreography, music, and costumes while maintaining or transforming traditional structures.

The findings of this research provide a foundation for future developments in the field of dramatic arts, offering insights into the role of creativity, symbolism, and interdisciplinary theories in the creation of dance performances. The outcomes of this study can serve as a model for further artistic endeavors that aim to integrate cultural capital into the creative economy and promote sustainable development within communities.

5. Recommendations

5.1. Implications

1. Cultural and Economic Impact: This research underscores the potential for integrating local cultural resources, such as banana fibers, into the creative economy. By showcasing traditional materials in modern performance arts, the study highlights how cultural capital can be revitalized and transformed into commercially viable products, fostering economic sustainability in communities. The findings emphasize the importance of cultural preservation through innovation and creative expression, offering a model for other regions to follow.

2. **Interdisciplinary Approach:** The research demonstrates the value of combining various artistic disciplines—dance, dramatic arts, music, and visual arts—into a cohesive performance that communicates complex cultural narratives. This interdisciplinary approach enhances the aesthetic quality of the performance while making it relevant to contemporary audiences. It also provides a new framework for future artistic creations that blend different art forms to create more immersive and impactful works.

3. **Symbolism and Contemporary Relevance:** The study shows how the use of symbols in dance and performance can bridge the gap between traditional cultural practices and modern artistic expression. The incorporation of cultural symbols and local wisdom in the performance design makes it accessible and meaningful to today's audiences, especially younger generations. This is particularly significant for preserving cultural identities in a rapidly changing global landscape.

4. **Methodology for Creative Arts Production:** The research provides valuable insights into the methodology for creating performance works that balance creativity with academic rigor. By incorporating reliable reference sources and primary information into the creative process, the study demonstrates how creative arts production can be approached systematically while maintaining artistic integrity. This methodology can be applied in future research projects aiming to create innovative works in the performing arts.

5.2. Recommendations

1. **Promote Cultural Capital in Creative Industries:** Local governments and cultural organizations should invest in programs that promote the use of indigenous materials and traditional knowledge in creative industries. This could include funding initiatives for artists and performers who work with local materials like banana fibers, fostering innovation in textile production and design while preserving cultural heritage. Collaborations between artists, local craftsmen, and entrepreneurs could help build sustainable markets for culturally enriched products.

2. **Expand Interdisciplinary Training for Artists:** Educational institutions and creative arts programs should emphasize interdisciplinary training, encouraging students to integrate diverse art forms such as dance, music, and visual arts. Offering programs that explore the relationship between these forms can equip emerging artists with the tools to create more nuanced and impactful performances. Workshops and mentorship programs should be created to support the development of creative works that draw on multiple disciplines.

3. **Incorporate Symbolism in Performance Art Curriculum:** Given the success of using symbolism in this study, it is recommended that performance art curricula incorporate teachings on the use of cultural symbols, gestures, and local traditions. This will help future artists connect their works with deeper cultural meanings, enriching the emotional and intellectual experience for audiences. Exploring the semiotics of cultural symbols in performance can deepen the relevance of contemporary dance and theater to society.

4. **Support Collaboration Between Artists and Researchers:** Further research should encourage collaborations between artists, researchers, and local communities to explore innovative ways of integrating traditional practices into modern creative works. Such collaborations can generate new insights into how art can preserve and innovate cultural practices, creating a positive feedback loop between art, academia, and cultural preservation.

5. **Document and Share Creative Processes:** Artists and researchers should document their creative processes, including the methods used to develop innovative works. Sharing these findings through conferences, publications, or digital platforms will contribute to the broader discourse on the integration of cultural heritage in modern arts. This can serve as a resource for other creators and provide guidance on how to blend traditional elements with contemporary artistic forms.

By implementing these recommendations, future research and creative works in the performing arts can continue to build on the foundation laid by this study, ensuring the preservation of cultural heritage while fostering economic and artistic innovation.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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