

THE OPTIMIZING OF MUSEUM BATIK TRUSMI WAYFINDING: SIGNAGE SYSTEMS STUDY FOR ENHANCED VISITOR CIRCULATION

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ABSTRACT

Cirebon, nestled on the north coast of Java in Indonesia, is a treasure trove of cultural richness that has withstood the test of time. Its cultural heritage is a testament to the fascinating interplay of Javanese, Sundanese, and Chinese influences, creating a unique and enchanting tapestry. The heart of Cirebon's cultural richness lies in its traditional arts and crafts. The city is renowned for its exquisite batik, a form of textile art where intricate patterns are painstakingly hand-drawn or stamped onto fabric. Cirebon's batik designs are characterized by vibrant colors and intricate motifs, reflecting a harmonious blend of Javanese and Chinese aesthetics which have earned it a special place in the world of textile art. This research focuses on enhancing visitor navigation within the Batik Trusmi Museum, recognizing that effective wayfinding is crucial for a fulfilling museum experience. The study comprehensively evaluates the museum's current signage system, examining its clarity, effectiveness, and functionality. It explores the potential of innovative signage solutions to improve visitor circulation, addressing existing challenges and incorporating cutting-edge design principles. Additionally, the study aims to infuse local cultural elements like Batik fabric and indigenous materials into signage design, creating sustainable and culturally resonant solutions. By analyzing user feedback and considering the unique cultural context, this research aims to provide practical recommendations to make the museum more accessible, engaging, and inclusive for all visitors. The goal is to offer insights into tailoring signage systems to enhance visitor circulation, foster cultural engagement, and elevate the overall museum experience at Batik Trusmi.

Keywords: Universal design, sustainable, tourism, signage, wayfinding

1. PREFACE

Amidst the challenges posed by the Covid-19 pandemic, the importance of effective signage and wayfinding systems within the tourism industry cannot be overstated. Travel restrictions and the closure of tourist attractions disrupted the flow of visitors, impacting the sector's revenue. However, as regions embarked on economic recovery while striving to meet Sustainable Development Goals (SDGs), tourism began to make a gradual comeback. Designed to address a wide range of global challenges from poverty and inequality to environmental sustainability, peace, and justice, the SDGs provide a shared blueprint for peace and prosperity for people and the planet.

Among the wide range of sustainable goals, 'inequality' as one of the main issues within a lot of different aspects is often neglected. The purpose of reducing inequality within the scope of SDGs is to create an environment where everyone has the opportunity to live a dignified life, regardless of their background or disabilities. Achieving this goal requires addressing the main cause of inequality, implementing regulations and measures which promote equality, ensuring that no one is left behind in the pursuit of sustainable development (The 17 Goals, 2015). The revival of tourism results in not only the reopening of tourist destinations but also improvements in tourism

facilities, such as museums. Improvements in tourism facilities also resonate with universal design that could result in an economic impact. One standout example is the Batik Trusmi Museum, which has not only embraced sustainable practices in line with SDGs but has also prioritized universal accessibility. In this context, signage and wayfinding play a crucial role in guiding visitors, including those with disabilities, through the museum's enhanced facilities and interpretations.

Aligning with SDG objectives, the Batik Trusmi Museum's commitment to sustainability preserves both the environment and local culture. Furthermore, by ensuring universal access, the museum widens its reach to all segments of society, contributing to economic growth in the surrounding region. This approach symbolizes how focusing on sustainability, universal access, and thoughtful signage can be instrumental in the post-pandemic recovery of the tourism sector. The development of the Batik Trusmi Museum serves as a beacon of positive potential for the tourism industry as it evolves in a post-pandemic future. With this approach, the Batik Trusmi Museum strives not only to preserve the cultural heritage of Batik but also to contribute to the economic growth of the surrounding region. With improved facilities, better interpretation, and broader accessibility, this museum serves as an example of how the tourism sector can recover from post-pandemic by focusing on sustainability and universal access. Thus, the development of the Batik Trusmi Museum reflects the positive potential that the tourism sector can generate in the post-pandemic future. (Camodeca et al., 2022).

Cirebon is known for its rich cultural heritage, including the art of batik. Batik is a traditional Indonesian textile art form that involves using wax and dye to create intricate patterns on fabric. The process of making batik is intricate and requires great skill. Different regions of Indonesia have their own unique styles and patterns of batik, and Cirebon has its own distinct tradition. (Dienaputra et al., 2021). In Cirebon, batik is an integral part of the local culture and has been practiced for generations. Cirebon batik is known for its vibrant colors and intricate designs, often featuring motifs inspired by nature and local traditions. One of the most famous Batik designs originated from Cirebon, this Batik design is also known as 'Mega Mendung' which represents the clouds of Cirebon and symbolizes the meaning of God's power over nature. The name 'Trusmi' itself is now a well-known brand that specializes in the art of Batik that has now become its own region that focuses on Batik. Besides having one of the largest Batik and souvenir shop in Cirebon, there's also a small museum dedicated on showcasing the diversity of Batik from all over Indonesia but also mainly to show the amount of hard work and craftsmanship that goes on behind making hand-made Batik (Nas & Ilham, 2021).

Since it first opened in November 2018, the Batik Trusmi Museum, created with hopes to preserve the heritage of hand-made Batik for future generations, also serves both recreational and educational purposes for local and international visitors. Having existed for nearly five years, the Batik Trusmi Museum rarely gets the amount of recognition it deserves, this is mainly caused by the lack of information or signage provided showing the existence of the museum itself.

In the context of human evolution, the primary aim of design is to enhance the species' chances of survival. Design goes beyond mere aesthetics, which are essentially superficial aspects. Its core objective is to modify the structure and arrangement of human interactions with the physical world. For instance, decisions like altering the dimensions of schools or devising a non-verbal language for computer control both fall under the umbrella of design, surpassing in significance the choices related to the color, material, or shape of buildings or computer casings. Design

serves as a flexible tool that amplifies the efficacy of human adaptive behaviors. Different environments offer varying levels of support, with people often settling for lower performance levels than what could be attainable. Occasionally, they tolerate obstacles for certain individuals but not others, and, in some cases, intentionally create barriers to segregate specific groups from the larger community, as seen in residential institutions. Other objectives, such as aesthetics or cost considerations, may at times take precedence over the degree of empowerment provided by a constructed environment, product, or system. (Julier, 2014).

Universal design aims to optimize usability for individuals with diverse characteristics, making it valuable and marketable when it can accommodate a broad spectrum of individual preferences and abilities. The primary objective of design is to enable users to easily comprehend and efficiently utilize a product or environment, ensuring comfort and minimizing fatigue, regardless of the user's sensory abilities, experience, knowledge, language proficiency, or current level of focus. (Coleman et al., 2016). It achieves this by effectively conveying essential information while minimizing the risks and adverse consequences of accidental or unintended actions. Simultaneously, in pursuit of an engaging and captivating layout, design adheres to a set of universal principles crafted to maximize accessibility for all users, which encompass seven key principles: emphasis, balance and alignment, contrast, repetition, proportion, movement, and the use of white space. (Christopherson, 2022).

The fundamental principle of design centers around emphasis, which pertains to highlighting a design's focal point and emphasizing the significance of each element within it. Another crucial element contributing to a well-balanced composition in design encompasses choices related to color, size, and texture. However, the creation of space and differentiation between elements necessitates the use of contrast. Repetition serves as an essential design principle that introduces rhythm and harmony into the overall design. The visual dimensions and visual weight of components within the composition, as well as their relationships, are described as proportion. This proportion should naturally manifest once alignment, balance, and contrast have been established. The art of directing elements in a composition in a manner that guides the viewer's eye from one element to another while effectively conveying information to the audience is known as movement. (Christopherson, 2022).

Even though white space might appear vacant, it plays a vital role in structuring and establishing hierarchy. The presence of white space surrounding an element has always been associated with the visual appeal for viewers. It signals to the human eye that objects within one area are distinct from those in other regions. Utilizing active negative space allows for the communication of various themes in a single, imaginative design. It's important to note that a design doesn't necessarily have to strictly adhere to these guidelines to be considered "good." Some exceptionally impressive designs deliberately overlook one or more design principles to create visually stunning and functional work.

Signage is a collection of signs and visual identities intended to help people determine and find directions through the surrounding environment. Rubenstein (1992) states that signage has four main functions such as, mall identity, traffic signs, commercial identity, information signature. In short, signage is more an expression of wayfinding visualized through pictograms, visual graphics, and directional signboards. (Audia, 2021).

Figure 1
Signage



Wayfinding is the whole concept of a building/space/area visual that serves to create a form of mental map on a visitor's location/area/environment. Thus, visitors have an overview of the characteristics of the area/building, and the availability of access for each room. (Audia, 2021).

Figure 2
Wayfinding



The problem at hand involves the need to transform the Batik Trusmi Museum into an environmentally sustainable and economically beneficial institution while enhancing its accessibility for all, including individuals with disabilities. Additionally, the museum faces the challenge of attracting visitors in the post-pandemic era by adapting to evolving traveler preferences and improving the overall visitor experience through effective signage and directions. Furthermore, the museum must devise strategies to actively engage the local community and safeguard the rich heritage of batik culture, thereby addressing a multifaceted set of concerns encompassing sustainability, inclusivity, tourism revival, signage enhancement, and cultural preservation.

2. RESEARCH METHOD

The qualitative research method is conducted to explore and understand the complexities of human behavior, experiences, and phenomena through non-numerical data through interviews and observations in attempt to gather rich, in-depth information and content analysis. This method also aims to delve into the nuances, context, and subjective interpretations to uncover insights into diverse perspectives from individuals' motivations, beliefs, perceptions, and social

interactions. Based on the book of "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches" by John W. Creswell and J. David Creswell, qualitative research consists of several steps as follows:

- a) Description and Interpretation of a social phenomenon that focuses on gaining a deep understanding of the context, meaning, and experiences of individuals or groups involved in the research.
- b) Data Collection through interviews, observations, document analysis, and case studies to gather rich data about the phenomena under investigation.
- c) Nonnumeric Data, which often consists of text, interview transcripts, or field notes used to analyze through descriptive and interpretative approaches.
- d) Context and Depth: This method emphasizes the importance of understanding the deep context of the social phenomena being studied. Qualitative researchers often approach their subjects in a flexible manner, allowing them to explore various relevant aspects.
- e) Theory and Hypothesis that often occurs inductively, based on data collected during the research process.

3. RESULT AND DISCUSSION

Signs are especially important where there is no direct visual access for the occupant to a potential destination because lack of reference points makes orientation difficult. To facilitate orientation of occupants during circulation and evacuation, signage systems are vital to assist user's navigation under both non-emergency circulation situations and emergency signs to locate exit in emergency situations. (Galea et al., 2014). The information conveyed by signage systems aims to compensate for the complexity of an enclosure and when exits are not fully visible, thereby increasing the efficiency of wayfinding (Azis et al., 2021). Considering the vital role of signage systems in aiding user navigation and information communication (Purba, 2019), it becomes essential to enhance and elevate the sensory aspects for more effective occupant use regarding the effectiveness of occupant utilization to address the problem of the low detectability of conventional, static signage in the Batik Trusmi Museum Cirebon.

Table 1
Batik Trusmi Museum's Existing Condition






Area	Existing	Wayfinding	Circulation
Entrance		To indicate the entrance into the museum, there is a barrier gate with an "enter" sign and an arrow pointing towards the museum. However, the machine itself is ineffective because the museum does not require any ticketing.	The circulation is a one-way linear path leading to the auditorium room.
Auditorium		There aren't any visible entrance or exit signage to guide visitors into and outside the auditorium area.	The circulation is a one-way linear path leading to the exhibition area.
Exhibition area		This area lacks entrance and exit signage to guide the visitors into the exhibition area.	The circulation is a one-way linear path leading to the gift shop area.
Gift shops		Information provided on this signage is ambiguous and unable to direct visitors.	The circulation is a one-way linear path leading to the exit area.
Exit		There aren't any exit signs to direct the way out.	The circulation is a one-way linear path leading to the parking area.

Table 2
Batik Trusmi Museum's Signage Design and Circulation Solutions

Area	Solution	
	Wayfinding	Circulation
Entrance	Implementing floor stickers leading to both the entrance and the following area could help enhance the signage, or alternatively, utilizing the ticketing system as a voucher for a complimentary souvenir from the Museum's gift shop.	The assessment of the current Batik Trusmi Museum's circulation pathway has revealed that there are no critical issues currently impeding its functionality. The pathway appears to be free from major obstacles or hindrances that could potentially disrupt the flow of traffic or pose safety concerns for our visitors. This is a positive indicator of our facility's design and maintenance, suggesting that the circulation pathway is operating smoothly and effectively, providing a hassle-free experience for those navigating through our space. However, it's important to continue routine inspections and maintenance to ensure that this favorable condition is consistently maintained, promoting a safe and efficient environment for all.
Auditorium	Employing projection signs to direct visitors towards the exhibition space.	
Exhibition Area	One sustainable approach to decrease energy usage involves substituting traditional spotlights with energy-efficient LED lamps, while another entails utilizing locally sourced materials like rattan and leftover Batik fabric scraps to craft eco-friendly signage.	
Gift shops	One sustainable approach involves cutting energy consumption through the adoption of energy-efficient LED lamps, while another entails utilizing locally sourced materials like rattan and leftover Batik fabric to craft environmentally friendly signage.	
Exit	To install clearly marked exit signs and emergency exit signs in strategic locations to provide clear and visible guidance to occupants in case of emergencies.	

Custom signs crafted from commonly used rattan and repurposed fabric scraps from Batik Trusmi's factory will be utilized at both the Batik Trusmi Museum and its gift shop (Figure 4). Integrating Cirebon's exquisite batik and the artistry of rattan into signage design is a remarkable fusion of heritage and functionality. These two distinct cultural elements lend a touch of elegance and authenticity to signage, transforming them into captivating works of art.

Figure 3
Signage design concept



Figure 4
Signage design implementation



Rattan frames and accents add a warm, natural touch to the signage, while Cirebon batik patterns, with their intricate designs and vibrant colors, infuse each sign with a sense of local identity and cultural significance (Figure 5). Whether used in the design of street signs, wayfinding markers, or even public installations, this integration not only enhances aesthetics but also serves as a testament to Cirebon's proud traditions and craftsmanship. It invites both locals and visitors to engage with and appreciate the city's rich cultural heritage in unexpected and visually stunning ways. (Purnama & Hermawan, 2022). Besides signage and circulation, incorporating Universal Design Principles (2023) such as adding a ramp for wheelchairs at the entrance and exit stairway of the Batik Trusmi Museum, is not just a matter of practicality (The 7 Principles, 2020). It is a statement of inclusivity and a testament to the museum's commitment to serving all members of the community. By providing accessibility for individuals with mobility challenges, the museum not only adheres to legal and ethical standards but also ensures that its cultural treasures are accessible to a broader audience. Everyone, regardless of physical abilities, should have the opportunity to immerse themselves in the beauty and history of Batik textiles. Universal design not only enhances the visitor experience but also fosters a more equitable society where diversity is celebrated, making the Batik Trusmi Museum a truly welcoming and enriching destination for all.

4. CONCLUSIONS AND RECOMMENDATIONS

To enhance the effectiveness of the Batik Trusmi Museum's signage system, various methods can be employed, such as enlarging signs, making them stand out more from their backgrounds, or introducing additional sensory cues. However, it is imperative to ensure that any changes made to the sign's design do not inadvertently compromise the simplicity and clarity of the conveyed information. One recommended approach to achieving this is to conduct a comprehensive audit of the current signage layout and design within the facility. This audit would assess factors like clarity, visibility, and consistency of all signage throughout the museum. Another sustainable solution for signage production involves the utilization of locally sourced rattan and Batik fabric. By embracing these native materials, we not only minimize our environmental impact but also provide support to local communities and uphold traditional craftsmanship. Rattan, recognized for its rapid growth and renewability, serves as an environmentally conscious choice for crafting sign frames and supports. Its pliability allows for the creation of intricate and distinctive signage designs. Additionally, incorporating Batik fabric, which is steeped in cultural significance, can add vibrant and visually engaging elements to our signage. This approach aligns with our commitment to eco-friendly practices while contributing to the preservation of cultural heritage and traditional craftsmanship. With its rich cultural significance, Batik fabric can be incorporated into the signage as vibrant and eye-catching panels or backgrounds. These fabrics are typically

made using natural dyes and traditional techniques, minimizing the use of harmful chemicals and reducing the environmental impact associated with conventional printing and fabric production.

By embracing these local materials, we not only promote sustainability but also create signage that tells a story, connects with the local culture, and enhances the overall aesthetic of our environment. This approach aligns with our commitment to eco-conscious practices and contributes to the preservation of traditional craftsmanship and cultural heritage. Incorporating motion sensors or smart lighting controls can also further optimize energy savings by ensuring that the lighting operates only when necessary. This approach is particularly effective when combined with energy-efficient lamps, which have extended lifespans, reducing the need for frequent replacements and minimizing waste. Additionally, LED lamps, by producing less heat, contribute to a more comfortable indoor environment and can potentially reduce the load on air conditioning systems. These measures align with the Batik Trusmi Museum's dedication to sustainability and energy conservation while still providing adequate and adaptable spotlighting as needed.

Furthermore, it's advisable to establish a standardized signage design guideline encompassing font choices, color schemes, and pictograms to maintain consistency across all signs. Such guidelines can serve as valuable references for signage creation and upkeep, ensuring their effective visibility within the museum environment. Additionally, considering the implementation of interactive touchscreen kiosks or mobile apps to offer visitors personalized navigation assistance and pertinent information about museum exhibits could further enhance the overall user experience and wayfinding. These measures ensure that the museum continues to meet the evolving needs of its visitors and remains an effective tool for communication and navigation within the Batik Trusmi Museum.

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