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Documentation of Sarawak Parang Model for Local Preservation

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Abstract *- The deployment of digitization technologies in the realm of culture and heritage is extensively established. Moreover, due to the wide range of current digitization technologies, determining the best solution for a specific problem is a huge difficulty. Other issues, how digital environment interaction links to physiological response of cultural. They suggest important scientific problems and inadequacies that must be solved in order for this shift to progress. To the best of our knowledge, no study on digitizing documentation of Sarawak Parang has been found in the literature. The aim of this research is to explore the viability of digital preservation for Sarawak Parang at the moment. The suggestions for Sarawak Parang further study can assist in developing and improve the traditional conservation of digital history and culture products and results. We were able to define parameters by applying modern digital documenting methods for this Sarawak Parang research. The findings of the study will add to significant information in the field of historical and creative management.*

Keywords *– Digitalization, Culture, Sarawak Parang, 3D.*

I. INTRODUCTION

A. Digitization

In today's increasingly competitive information and communications technology (ICT) environment, every organization essential discover ingenious ways to stay in the "game." Documentation that is currently maintained on paperwork can be digitized, stored in database, and made open to the public (Manaf, 2007). Digitalization's technological phase, which involves the cognition, societal, and administrative effects of digital technology, is known as digitization (Oliveira et al., 2021). Nowadays to be equipped for both the diverse occupations and industries that are evolving, today's workforce demands greater digital capabilities. This is referred to as the fourth industrial revolution by many people. Digitization is a tough balance between two apparently diametrically opposed ideals, rather than a binary choice (Milisavljevic-Syed et al., 2020). The rising digital cultural heritage has a big future for developing new digital applications that will entice people to learn about their background in innovative ways (Zuliana & Razak, 2022). Appropriate digitization techniques are indeed a prerequisite for innovativeness, and determining the best digitization approach for individual difficulties is critical (Siedler et al., 2019). The various sorts of digital culture implementations that have been produced over the last few proofs more about our own modern perspectives and understanding of the past than about historical cultures itself, as with all varieties of heritage conservation. It's fascinating in seeing how the adoption of various digital technologies has changed classic humanities problems in addition to allowing the gathering and management of historic data (Economou, 2017). Digital data has become an inseparable part of our culture and legacy (Manaf, 2007). On the other side, migrating tries to integrate historical materials into future knowledge-based procedures (Schlieder, n.d.).

B. Culture

Cultural policy has indeed been described as a social transformation that allows a population to engage in the artistic demand and supply of its cultural legacy, which is preserved in institutions, universities, and archives, and represented in the visual, literary, and performing arts (Haigh, 2020). Malaysia's multi-racial demographic adds to the nation's multi-cultural richness. Anthropology entails far beyond merely adhering to conventions and traditions (Manaf, 2007). Malaysia has a different culture from the rest of the globe. Peninsular Malaysia, Sabah, and Sarawak are home to over 80 ethnic communities. Sarawak has 28 cultural groups, with the Iban being the most numerous, next by the Chinese, Malays, Bidayuh, Melanau, and Orang Ulu (Mohammed et al., 2018). People in rural communities have a strong sense of belonging to their surroundings. Several publications and studies have been published on topics relating to Borneo's indigenous people, including cultural artefacts, linguistics, cultural characteristics, and creative arts. As a result, heritage is priceless and unreplaceable (Vallone et al., 2014). Therefore, to guarantee that their cultural relevance is preserved, great care must be taken. Mainly remote regions in Sarawak have support structures for indigenous artisans (Haigh, 2020). Artists working in urbanized locations, such as Sarawak, are separated from their villages, which are situated in very inaccessible areas.

An innovative and highly competent craftsman is required to create a high-quality model and carving of a *parang*. There are some similarities mostly in patterns used by *parang* carvers throughout Borneo, whom carve from nature and creatures (Mohammed et al., 2018). In principle, carving themes are part of the art legacy that has been passed down, for every tribe in Borneo, it is generally seen as their uniqueness and a representation of their cultural (Badaruddin et al., 2019). Architectural appearance, materials and texturing, and structural technique and construction are all examples of innovation (Harun, 2017). Heritage is more than just tangible and structural features; it can also be a cultural process (Z D Meutia, 2018). There was no central depository that housed all of the data (Cesaro et al., 2012). Vital resources must be laid available for future generation (Strodl et al., 2007).

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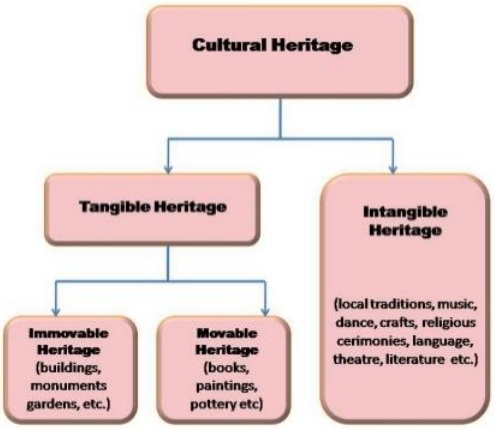

Fig. 1. Forms of Cultural Heritage (Vallone et al., 2014)

II. METHODOLOGY

This study utilized approaches such as in-depth interviewing, field observations, and supplementary data gathering in its research design. It's worth noting that qualitative research necessitates the use of reliable data gathering methods as well as the recording of the research study, hence to minimize bias and establish trustworthiness, documents is coupled with analysis of interviews and observations. (Bowen, 2009).

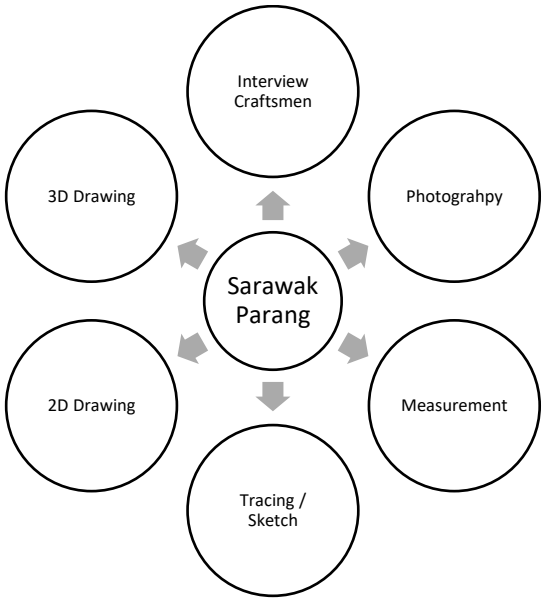

Fig. 2. Author methods applied during field work documentation

TABLE 1. Analogue signals to Digital signals analogue (GB (GuoBiao), 2010)

	Sample Digitization	
Analogue Signals	**Digitizing Device**	**Digital Signals**
video in video tape	video capture card	digital video files (.mpg, .avi)
sound captured by microphone	sound card	digital audio files (.wav, .mp3)
image from books	scanner	digital images (.jpg, .gif, .bmp)
real life image	digital camera	digital images (.jpg, .gif, .bmp)

Additionally, secondary data were collected from scholarly books, academic papers and research papers, as well as journal articles that had been produced. Prior to conducting a physical study, previous investigation is necessary (Harun, 2017). Writing, photo, and audio of cultural and heritage resources have significance (Manaf, 2007).

Fig. 3. Process flow for documentation

C. Two and Three Dimensional

By expressing geometric models, conceptual sketches are widely utilized to explore design concepts and make recommendations (Camba et al., 2022). The new primary purpose was to interpret sketches. The various options of 2D/3D model development in cultural heritage, as well as in generic cultural heritage recording, presentation, and assessment, typically result in accumulation of very disparate types of information for a single cultural site, with varying qualities, accuracy, surfaces qualities, coordinate systems, and so on (Economou, 2017). In a 2D image, lines provide a hint to the object's 3D geometry (Uchida & Saito, 2020). The large percentage of 3D design software does not take advantage of many users' natural artistic ability and the difficult subject of developing high-quality 3D model straight from sketches should also be studied (Camba et al., 2022). Several techniques are required to convert input sketching into precise Computer Aided Design (CAD) models usable for engineering disciplines, some of which are very difficult. In interpreting this 3 dimensional data, authors tend to use Rhinoceros software as a tools to produce it in a proper digital documentation. Using CAD software, components and installation drawings are created on storage media that can then be used in other ways (Vijayaraghavan & Technology, 2018).

III. DISCUSSION / FINDINGS

Fig. 4. Image Map of Asajaya, Sarawak location

The retrieval of *parang* photos and specific information from respondents were documented throughout the research project. The core of our information comes from quasi face-to-face interviews with respondents. Based on the 15 sampling of *parang* that were taken during the process to be analyzed from both of the craftsman during the fieldwork. In attempt to

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optimize the investigators' understanding of the various forms of *parang* , sampling in the form of images were also collected. Figure 4 shows the area of location. The data collection is carried out through observation and interviewing the artisan in producing local *parang* in Sarawak located at Asajaya and Sadong Jaya. The informants for the interviews were Mr. Razali Adan and Mr Budiman Hipni. Asajaya is a tiny town in Sarawak's Samarahan Division. Asajaya and Sadong Jaya is an hour drive from Kuching, Sarawak, Malaysia.

D. Comparison

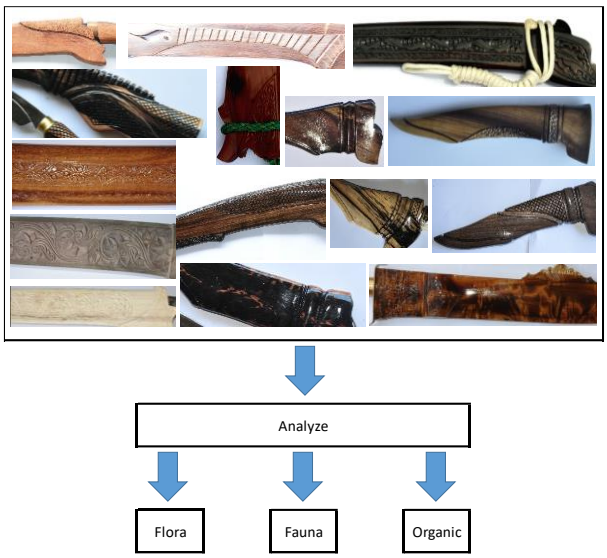

Fig. 5. Summarize exploration process of motif for Sarawak *Parang* sheath design

TABLE 2. Summarize analysis of motif for Sarawak *Parang* design sheath.

No	Motif design on the sheath (format image .jpeg)	Illustrations of the motif design digitize 2 dimensional format	Design form and composition of motif	Philosophy
1			Fauna	Also known as *Parang Sepat*. The fish tail form inspired this rendition.
2			Flora	Also known as Parang Ukiran Bunga Kangkong. This term describes the type of indigenous vegetable.
3			Organic	Also known as *Parang Lasak* or Parang Kerbau. Observations based on sheath surface parang's symbolist strength flow and power.

The key characteristics that are implicitly defined by his *parang* include ferns, fishtails, and cross-stitch techniques (Mohammed et al., 2018).

IV. Conclusion

In this article, we looked into how and if digitization has an impact on a person's life. Nonetheless, the actual evidence we gathered demonstrates that digitalization is a critical component that organisations may use to upgrade their value chains especially in heritage conservation. This transition is expected to occur as a result of cooperative relationships involving academia and industry, resulting in a changed educational system and present workers' upgrading skills. As a result, the attention should be moved to teaching and learning today's new technologically savvy workforce, as well as developing new and necessary government policies and industry approaches to attain the ideal digital transformation (Milisavljevic-Syed et al., 2020). It is expected that the demand for customisation and individualization of products and industrial processes will continue to rise. All operations and products/services in completely digital value chains exist only in virtual form. It provides for almost unrestricted exploration in the multiple disciplines that enable the development of digital innovation at all levels and sectors (Oliveira et al., 2021). It is vital to have a planned goal as part of the society's and participants' involvement into something that can be followed up on. The abundance of reinterpretable and reusable digitized cultural content might prompt us to reconsider these problems. The digital sociocultural is growing more critical of topics such as digital heritage copyright, integrity, originality, and personality (Economou, 2017). In Malaysia, the process of digitizing culture and heritage documentation is still very much in infancy. Another difficulty is to use the digital technologies presented to improve traditional procedures, such as on-site training and documenting approaches. The study's findings will be useful in a variety of ways, to newfound knowledge in cultural and historic management of digitized cultural and historic materials. We may use digitization to bridge this gap between both the old and young groups now that we are in the twenty-first century, thanks to technological advancements. Likewise, technological inheritance is the continual process of connecting the present with the past. It is intended that each country will take the opportunity to safeguard and sustain the heritage places and cultural riches.

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