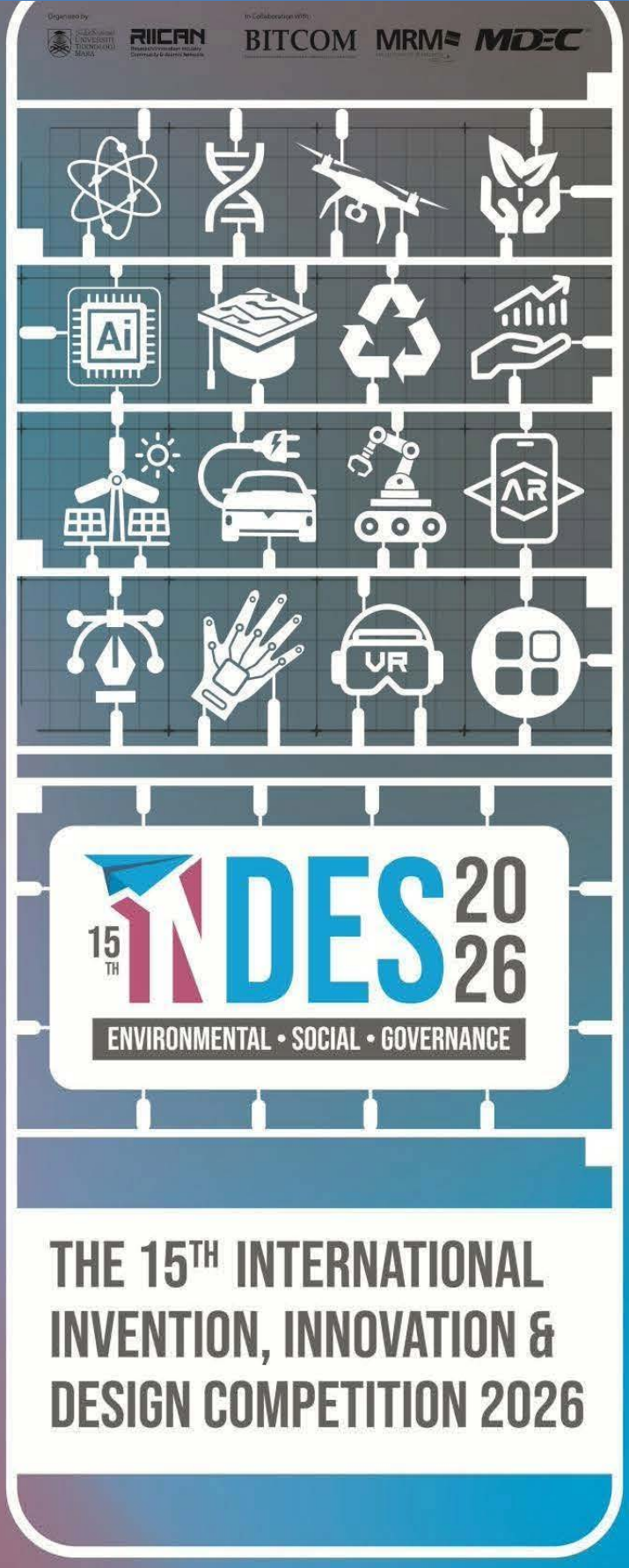

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DEVELOPMENT OF DIGITAL ARCHIVE TO PRESERVE INDONESIAN CRAFT CULTURE: A CASE STUDY IN TRANGSAN RATTAN VILLAGE

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ABSTRACT

Lab Desain Budaya is an initiative in Universitas Sebelas Maret to preserve local identity through collaboration between international partners, Universitas Sebelas Maret students, and local craftspeople in rural areas. One of the Lab Desain Budaya's main partners is the craftspeople of Trangsan Village. Situated in Central Java, the village is recognized as one of Indonesia's major centers for the rattan industry. It is the largest producer of rattan crafts in the province and holds the second position nationwide. However, current conditions indicate a significant shift in market preferences toward instant designs influenced by global trends, the limited regeneration of younger artisans, and the lack of documentation of traditional knowledge has resulted in the diminishing identity of Trangsan Village local craftsmanship. The development of Lab Desain Budaya website is to create an interactive, sustainable, scalable digital archive and online publication. The project involved collaborating with Trangsan Village to collect data on Trangsan Village history, rattan production tools, types of weaving, and previously undocumented rattan products with ethnographic research method that was done in the span of 6 months in the village. The process followed the Waterfall model, beginning with user requirement analysis, system design, implementation, verification, and maintenance. The resulting platform served as a tool for preserving Indonesian craft culture, which provides accessibility for a wider audience. The impact on Trangsan Village lies in strengthening its distinction from other craft centers, while also serving as an educational platform for artisans to better understand and develop their local potential.

Keywords: cultural preservation, rattan craft, digital archive, Trangsan Village, website development

1. INTRODUCTION

Traditional crafts in many rural and marginalized areas remain embedded within local economic systems, whereas in more affluent urban contexts they are declining, yet simultaneously represent a potential market for these crafts (Zbuchea, 2022). The preservation of traditional crafts should not be passive but requires active agency from artisans and surrounding communities (Połeć & Murawska, 2021). Universitas Sebelas Maret has developed an initiative called Lab Desain Budaya, where the goal is to preserve local identity through collaboration between international partners, Universitas Sebelas Maret students, and local craftspeople in rural areas.

One of Lab Desain Budaya's initiatives is located in Trangsan Village in Gatak, Sukoharjo, Central Java, Indonesia, as the 2nd biggest rattan center nationwide (Dadtun et al., 2024). The rattan culture in Trangsan Village dates back to the 1910s. Currently, the number of craftspeople in Trangsan Village has declined from 400 to 200 active craftspeople, posing a risk to the preservation of local handicrafts, particularly in terms of the decline in distinctive designs and production techniques. This condition is caused by a shift in market preferences toward instant, trend-based global designs and a decrease in the

regeneration of young craftspeople. Most of the history and culture are also undocumented, meaning they existed solely within the oral tradition and tacit knowledge of active artisans.



Figure 1 Trangsan Village Location

To address these issues, the development of a digital archive platform is undertaken. Digital archiving refers to the collection of data in the form of documents, images, audio, video, and other digital files, which enables users and researchers to easily access and recall information (Hahn, 2024). Moreover, digital strategies such as social media and other means of technologies is an affordable way of promoting traditional crafts (Bhattacharya et al., 2021). Therefore, the Lab Desain Budaya website was created to develop and provide knowledge on the potential of Trangsan Village's rattan crafts tradition. The website has the potential to open new market opportunities in the global era for craftspeople in Trangsan, as well as in other regions of Indonesia, as the initiative expands. In addition, it opens up new ways for students, scholars, and the community to actively engage in traditional crafts through research and innovation.

2. METHODOLOGY

2.1 Ethnographic Research Method in Trangsan Village

Ethnography is a qualitative research approach that seeks to understand social and cultural phenomena within their natural context through direct observation, participation, and interaction with the research subjects (Yonjan et al., 2026). Compared to other social approaches, this method is characterized by a relatively longer research duration (Sunaryanto, 2023). The ethnographic method in this study was conducted over a six-month period and adopts a visual ethnography approach to gain an in-depth understanding of the social, cultural, and artisanal activities in Trangsan Village.



Figure 2 Ethnographic Research Method

2.2 Waterfall Method for Website Development

The waterfall method is a structured and systematic approach to software development, widely used in website development (Kurniyanti & Murdiani, 2022). The waterfall method is linear because each phase must be completed before the next one begins, and the process follows a sequential order

(Wahid, 2020). The project team and UI/UX designer identify and define the features for the digital platform. Priorities are determined based on user needs (Ly et al., 2025).

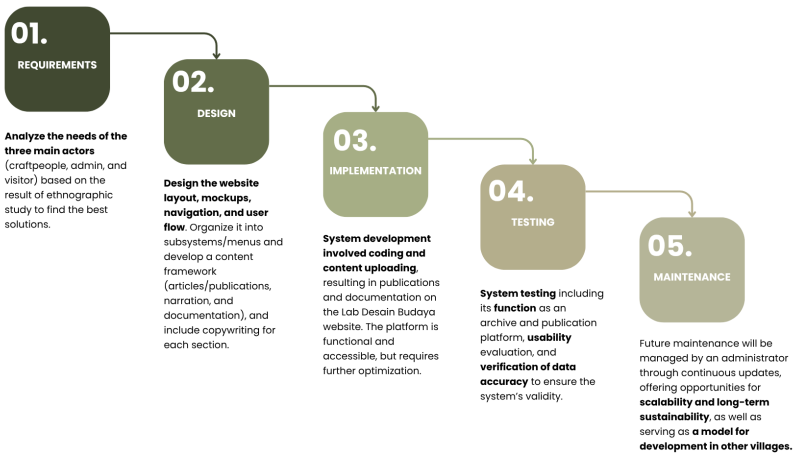


Figure 3 Waterfall Model for Website Development.

3. FINDINGS

3.1 Ethnographic Data Result

Over the course of 6 months of research in Trangsan Village, we were able to gather information on the history of the rattan culture, the types of rattan weaving, materials, production tools, products and craftspeople. A total of 23 workshops were interviewed across the village and 16 traditional crafts were identified.

3.2 Website Development Process

The process follows the Waterfall model across 5 phases. Table 1 summarizes each phase.

Table 1 Website Development Process

Phases	Duration	Output
User Requirement Analysis	3 weeks	Project planning, asset document gathering, stakeholder alignment
System Design	4 - 5 weeks	Website framework and design development
Implementation	6 weeks	Functioning website deployed
Verification	2 weeks	Tested and reviewed website
Maintenance	Ongoing since launching in Feb 2026	Regular content update

3.3 Website Framework and Features

The website is designed to fulfill five core functional requirements: detailed information on Lab Desain Budaya and Trangsan Rattan Culture, scientific publications around the topic to foster educational exchange, a categorization system on rattan products for easier access, a dashboard for administrators to add new data, and English language features for international users.

The final website is organized into:

a. Landing Page of Lab Desain Budaya's website main goal is to capture the attention of visitors through snapshots of the craftsmen in Trangsan Village, a general introduction to Lab Desain Budaya's activities in Trangsan Village, and a call to action to buy a research book about rattan and collaborate with its initiatives.

b. “About Us” page provides information about Lab Desain Budaya's main philosophy, founders, and partners.
c. “Initiatives” provide in-depth data about Trangsan’s rattan culture, facilitating partnership inquiries from researchers, institutions, and industry stakeholders.
d. “Publications” page shows previous scientific publications and news articles about Lab Desain Budaya’s activities.
e. “Collaboration” button leads straight to Lab Desain Budaya email to facilitate partnership inquiries from researchers, institutions, and industry stakeholders.

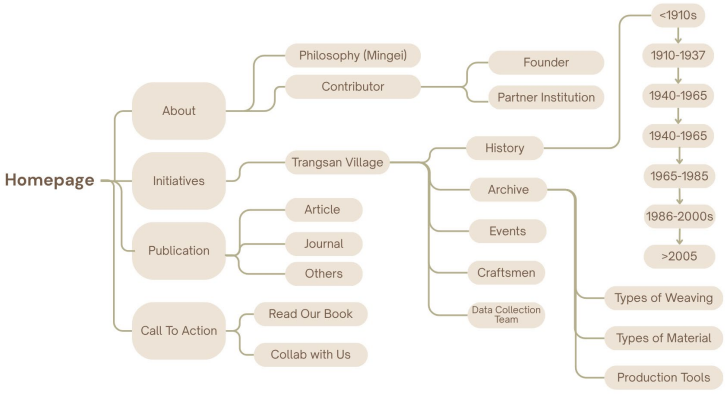
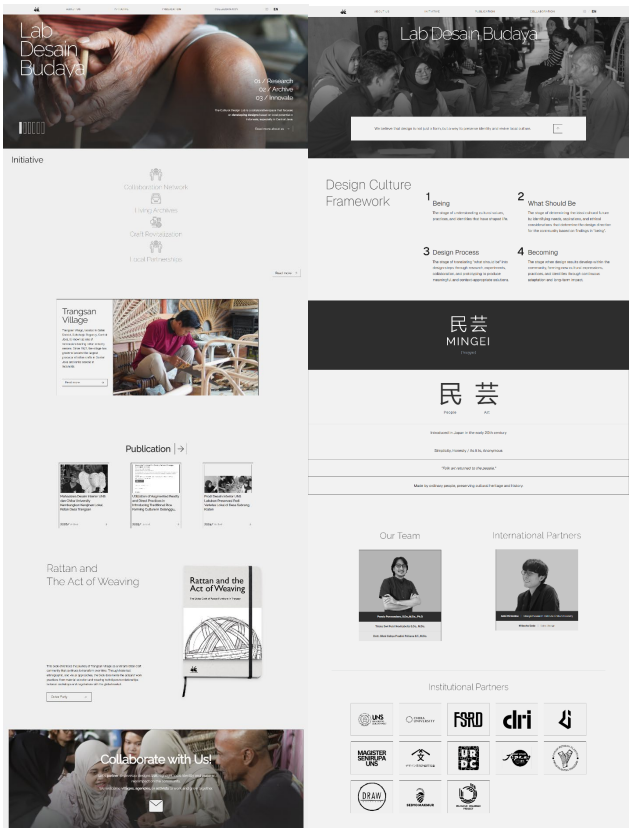


Figure 4 Website Framework

3.4 Final Website



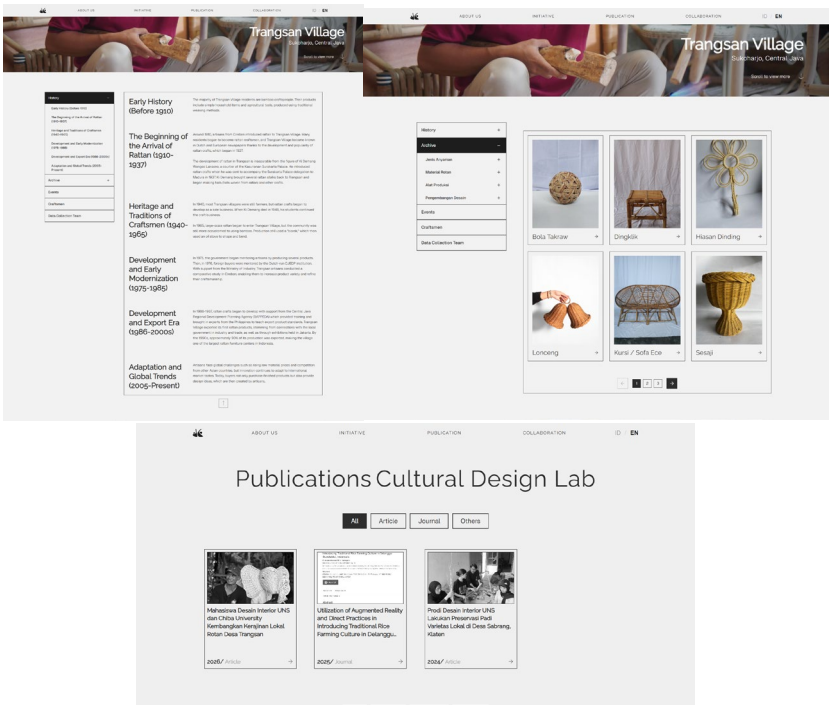


Figure 5 Final Website

4. CONCLUSION

The website demonstrates as an active platform that is able to formally record oral history that risked being lost, foster academic and scientific collaboration between local and international institutions, as well as positioning Trangsan Village's craft within the global academic and cultural preservation network. All Lab Desain Budaya's website functions have been tested and are deemed viable. The website is meant to be sustainable and scalable. Therefore, future iterations and improvements will still be done.

REFERENCES

Allison Hahn. (2024). Digital Archiving. https://www.ebsco.com/research-starters/social-sciences-and-humanities/digital-archiving

Bhattacharya, A., Dutta, M., & Waelde, C. (2021). Designing Heritage-Sensitive IP and Marketing Strategies for ICH-Based Creative Economy. *Culture, Society, Economy, Politics*, *1*(2). 10.2478/csep-2021-0012

Dadtun, Y. S., Ahmad, B., Fathoni, D. M., Albari, F. M., Ulfiyah, L. N., Dita, S. M., & Handayani, S. (2024). Pembuatan Storyline sebagai Media Promosi Wisata Rotan Desa Trangsan, Kecamatan Gatak, Kabupaten Sukoharjo. *Jurnal Abdi Masyarakat Indonesia (JAMSI)*, *4*(2). https://doi.org/10.54082/jamsi.1066

Kurniyanti, V. A., & Murdiani, D. (2022). Perbandingan Model Waterfall dengan Prototype pada Pengembangan System Informasi Berbasis Website. *Syntax Fusion*. https://pdfs.semanticscholar.org/3f22/f56bbbfe6edab25e042ae1392dd138edffc5.pdf

Ly, D., Overeem, M., Brinkkemper, S., & Dalpiaz, F. (2025). The Power of Words in Agile vs Waterfall Development: Written Communication in Hybrid Software Teams. *The Journal of Systems & Software*.

Połeć, W., & Murawska, D. (2021). The Social Constraints on the Preservation and Sustainable Development of Traditional Crafts in a Developed Society. *Sustainability*, *14*(1). https://doi.org/10.3390/su14010120

Sunaryanto. (2023). METODE Penelitian Etnografi: Konsep dan Desainnya. *El-Hikmah: Jurnal Ilmu Dakwah dan Komunikasi*, *18*.

Suranto, & Adcharina Pratiwi. (2020). Model Pengembangan Pemasaran Kain Tenun "Goyor" Berorientasi Pasar Berdasar Keinginan Konsumen di Era Industri 4,0. *Sentra Industri Kain Goyor Sragen Indonesia*. https://proceedings.ums.ac.id/ienaco/article/view/2493

Wahid, A. A. (2020). Analisis Metode Waterfall Untuk Pengembangan Sistem Informasi. https://www.researchgate.net/profile/Aceng-Wahid/publication/346397070_Analisis_Metode_Waterfall_Untuk_Pengembangan_Sistem_Informasi/links/5fbfa91092851c933f5d76b6/Analisis-Metode-Waterfall-Untuk-Pengembangan-Sistem-Informasi.pdf

Yonjan, R., Tandan, R., & Subedi, B. P. (2026). Ethnography in Qualitative Research: A Critical Review of Methods and Applications. *International Journal of Arts and Humanities*. 10.61424/ijah.v4.i1.700

Zbuchea, A. (2022). Traditional Crafts. A Literature Review Focused on Sustainable Development. *Culture, Society, Economy, Politics*, *2*(1). 10.2478/csep-2022-0002

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