

Community Empowerment Through Technological Innovation and Digitalization for the Development of Bamboo Weaving Educational Tourism in Sumuragung Village

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ABSTRACT

Sumuragung Village has great potential in bamboo weaving crafts that have been passed down through generations, but faces various challenges in business development, such as limited market access, low digital literacy, weak financial management, and a lack of product innovation. This community service program aims to empower bamboo weaving artisans and educational tourism managers through the application of technological innovation and digitalization. The method used includes four stages: socialization to build mutual commitment, training to improve technical and managerial capacity, the application of technology in the form of bamboo slicing tools and an educational tourism website, and mentoring and evaluation to ensure program sustainability. The results of the activities show significant improvements in various aspects, including an increase in production capacity of up to 70%, an increase in artisan income by 65%, the development of 5 new woven product variants (pencil cases, photo frames, and decorative lampshades), and the establishment of a digital marketing system through a website and social media that reaches a wider market. In addition, the formation of professional Pokdarwis (Tourism Awareness Groups) with a clear organizational structure and a transparent financial system is the foundation for the program's sustainability. This program proves that collaboration between academics, village governments, and communities can create sustainable economic transformation based on local wisdom and modern technology.

Keywords: Community Empowerment, Bamboo Weaving, Educational Tourism, Appropriate Technology, Digitalization.

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1. INTRODUCTION

Grogol Hamlet, Sumuragung Village, Sumberejo District, Bojonegoro, is a center of hereditary bamboo-weaving crafts with high cultural and economic potential. Dozens of residents are weavers. Many residents of Grogol Hamlet have run bamboo craft businesses that have been passed down through generations. However, the bamboo artisans of Grogol-Sumuragung Hamlet, who generally have little education and rely solely on sales through intermediaries, have struggled to develop their bamboo weaving businesses. Their turnover has even declined over time due to the shift from woven products to more durable plastic equipment (Badan Pusat Statistik Kabupaten Bojonegoro, 2023)

The Sumuragung Village community formed the Bamboo Craft Tourism Awareness Group (POKDARWIS) to pioneer educational tourism based on bamboo weaving. Operating since 2018,

POKDARWIS Bamboo Craft has pioneered educational tourism in bamboo crafts to attract visitors to Sumuragung Village (blokbojonegoro.com, 2018). Driven by POKDARWIS Bamboo Crafts and the Sumuragung Bamboo Weaving Craftsmen Association, the bamboo educational tour offers an overview of the process and practice of bamboo weaving, as well as an educational tour of weaving painting.



Figure 1. Bamboo Weaving Educational Tour in Sumuragung Village

Bamboo weaving educational tourism is used as a branding and primary marketing model and is a fairly effective marketing tool (aksaratimes.com, 2020). This is consistent with the fact that the arrival of bamboo weaving educational tourism visitors to Sumuragung Village results in labor and marketing efficiencies. Furthermore, the process of ordering bamboo weaving products directly from the weavers is also enhanced.

Currently, the Bamboo Crafts Community (POKDARWIS) and the bamboo weavers of Sumuragung Village are experiencing difficulties in reaching a wider market. Despite developing various marketing strategies, POKDARWIS has yet to maximize its market potential.

Adopting adequate technology and infrastructure can also play a significant role in increasing the marketing of Grogol Hamlet's woven products. The development of digital technology and advances in logistics can open new opportunities to expand the market for woven bamboo products and educational woven tourism (Luo et al., 2020). Another obstacle faced by bamboo weavers is product innovation, including limited traditional designs, limited access to modern market trends, and limited skills in developing products based on consumer demand. The resulting woven products tend to be monotonous and less competitive than synthetic products.

The objectives of this community empowerment program are to increase the marketing reach of Grogol Hamlet's educational bamboo woven tourism program, develop the managerial capacity of POKDARWIS, and provide innovative touches to the woven bamboo products produced by partners.

2. METHODS

The bamboo weaving educational tourism development program in Sumuragung Village is implemented through four main, interrelated, and continuous stages. The first stage is outreach, which aims to build mutual understanding and commitment among the community service team, partners, and the village government (Safii et al., 2023). This stage involves initial meetings with the Pokdarwis (Tourism Group) managers and artisan associations to introduce the program comprehensively. It involves relevant agencies such as the Tourism Office and the Trade Office to open access and opportunities for development (Fizzanty, 2024). Outreach also

serves as an opportunity to explore the partners' real needs through discussions and focus group discussions (FGDs), allowing for targeted program design tailored to the challenges faced by each group (Anom et al., 2024).

The second stage is training, designed to enhance the partners' technical and managerial capacity. The training covers three main areas: business management, encompassing financial management and business strategy; digital marketing, encompassing social media management and product photography techniques; and the development of the Pokdarwis organizational structure and bylaws. For artisan associations, training also covers modern product design, such as decorative lampshades, pencil cases, and photo frames, which have higher sales value (Aqmala, 2013). All training is conducted through a participatory approach and hands-on practice, ensuring that partners not only understand the theory but also develop the skills to apply it (Dewi et al., 2021).

The third stage is technology implementation, which is the concrete implementation of the solutions offered. For the Tourism Awareness Group (POKDARWIS), technology implementation includes the development of an educational tourism website, a transparent online financial system, and social media-based marketing content management (Safii & Rahayu, 2020). For the artisan association, technological innovation is achieved through the procurement of a bamboo threshing tool that can increase production efficiency by up to 3 times compared to manual methods (Yuniwati et al., 2021). This tool was specifically designed to meet the artisans' needs and demonstrated live by a team of experts to ensure safe and effective operation. This technology implementation marks a turning point for partners in shifting from traditional methods to a more modern and productive system (Pratistha, 2018).

The fourth stage is mentoring and evaluation, which aim to ensure the program's sustainability after the service period ends. Intensive mentoring is provided through regular visits, technical consultations, and assistance with problem-solving that arise in the field (Anom et al., 2023). Evaluations are conducted through questionnaires, interviews, and customer testimonials to gauge the effectiveness of the training and technology implementation (Angraini et al., 2022). The evaluation results are used to inform improvements and develop sustainability action plans, including the formation of internal teams within each partner responsible for maintaining the established systems (Supardi et al., 2023). These four stages run synergistically and have succeeded in creating a positive transformation for the development of bamboo weaving educational tourism in Sumuragung Village.

3. RESULTS AND DISCUSSION

1. Socialization and Focus Group Discussions (FGDs) with the Tourism Awareness Group, Bamboo Weaving Craftsmen, the Village Government, and the Sumuragung Village Community.

Socialization fosters a shared understanding and commitment between the service team and partners (Anom et al., 2023). Through this forum, real needs and challenges in the field can be identified in more depth, allowing for more targeted program design (Safii et al., 2022).



Figure 2. Program Socialization to Partners and the Sumuragung Village Community

The socialization also included focus group discussions, which revealed priority issues for immediate resolution: limited market access, low digital literacy, and weaknesses in financial and organizational management. The socialization also fostered a shared commitment among all parties, enabling the subsequent activities to proceed with the community's support and active participation.

2. Training and Mentoring for Innovation in Woven Bamboo Pencil Boxes and Photo Frames.

One of the main activities was training in making more modern woven bamboo products. We introduced how to make pencil cases and photo frames, two products that are more appealing to young consumers. Production skills training is an effective strategy for increasing the added value of craft products and expanding market share (Ibrahim & Nurdian, 2020).



Figure 3. Bamboo Woven Product Innovation Training

In this activity, artisans were introduced to making more modern woven bamboo products, namely pencil cases and photo frames. These two products were chosen because they have a strong appeal to young consumers, especially students and millennials. During the training, artisans were taught everything from raw material selection and new weaving techniques to finishing processes that produce high-quality products. Intensive mentoring was provided to ensure each artisan mastered these new skills.

By shifting from traditional products to more modern and functional ones like pencil cases and photo frames, artisans can reach a wider market, particularly among students and the younger generation. This innovation not only increases sales value but also preserves the core skill of bamboo weaving in a contemporary context.

3. Digital Marketing Training and Mentoring for Bamboo Woven Products and Educational Tourism

To support promotion, the community empowerment team provided digital marketing training. We taught them how to use social media platforms like Instagram and Facebook to promote products and educational tours. Digital marketing has proven effective in expanding the marketing reach of craft and educational tour MSMEs (Aprilani et al., 2025; Ni'mah et al., 2025). The artisans learned how to photograph their products attractively, write effective captions, and interact with potential buyers online.



Figure 4. Digital Marketing Training for Bamboo Woven Products and Educational Tourism

The artisans and managers, who previously relied on conventional marketing, now have the basic skills to independently promote their products and educational tours on social media platforms such as Instagram, Facebook, and TikTok. This opens up opportunities to reach a wider customer base with interactive content.

Ongoing mentoring ensures that partners can manage their social media accounts independently. The results of this activity are very encouraging, as partners who previously relied solely on word-of-mouth sales now have the basic skills to promote their products and educational tours through digital platforms independently. This opens up significant opportunities to reach customers directly without relying entirely on intermediaries, while simultaneously expanding market reach beyond the region. With digital marketing, Sumuragung

Village's bamboo woven products and educational tourism packages are now more widely known.

4. Development of a Bamboo Slicing Tool

Technical innovation in the form of a bamboo slicing tool provides a solution to production efficiency challenges. This tool significantly speeds up the pre-production process, reduces the physical workload of craftsmen, and produces more consistent and high-quality bamboo strips.



Figure 5. Development of a Bamboo Slicing Tool

The development of a bamboo slicing production tool aims to increase the efficiency and productivity of bamboo weavers in Sumuragung Village. This tool is designed to address the main obstacle currently faced: the manual process of splitting and flattening bamboo with a knife, which is time-consuming and tiring. With the bamboo slicing tool, the pre-production process can be significantly accelerated, the physical workload of craftsmen reduced, and the resulting bamboo strips become more consistent and high-quality..

5. Development of a Bamboo Weaving Craft and Educational Tourism Website

The website serves as a professional "digital storefront" for Sumuragung Village. This website serves as a trusted information center, featuring tourism profiles, educational packages, product galleries, and contact details for bookings. The website effectively complements digital marketing strategies and demonstrates the village's readiness to welcome tourists and consumers of bamboo weaving products.



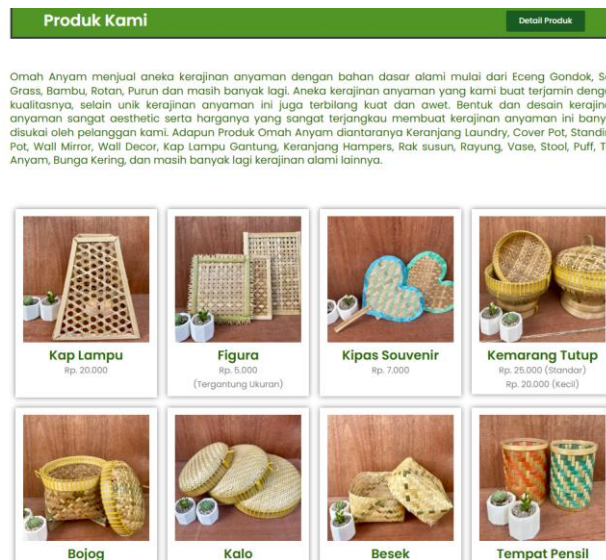


Figure 6. Bamboo Weaving Craft and Educational Tourism Website

The website serves as an effective digital marketing strategy to expand promotional reach, enhance the tourism village's credibility, and broaden market access without geographical limitations (Gupta, 2019). Furthermore, the website aims to support more structured educational tourism management through an online booking system and to serve as a promotional tool for Sumuragung Village's bamboo-weaving products.

4. CONCLUSION

The bamboo weaving educational tourism development program in Sumuragung Village has stimulated the economic growth and independence of the bamboo weaving artisan community. Through a series of structured activities, such as product innovation training, digital marketing assistance, institutional strengthening, and the use of bamboo-weaving tools, this program not only increases artisans' productivity and income but also strengthens digital literacy and business management skills. Collaboration between the community, village government, and academics is key to creating a sustainable educational tourism ecosystem.

The program's output is evident in the 70% increase in artisan production capacity and the opening of broader marketing access through websites and social media. Furthermore, establishing a professional tourism group (Pokdarwis) and developing a strategic tourism development plan are crucial foundations for the program's sustainability. Innovations in woven products such as pencil cases, photo frames, and decorative lampshades have successfully expanded the market segment while preserving the local wisdom of bamboo weaving.

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