

Digital Marketplace Assistance for Gen-Z Community in Commercializing Rumbia Frond Handicrafts: A Community Empowerment Model in Coastal Tanjungbalai

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ABSTRACT

This community service project aims to enhance the economic independence of Generation Z youth in coastal Tanjungbalai through digital-based commercialization of rumbia frond handicrafts. Despite the abundance of local natural resources, previous training programs only succeeded in developing production skills without significantly improving market access and sales performance. This program addressed the gap by providing structured mentoring in product packaging, branding, and e-commerce utilization. The method employed a participatory community empowerment approach involving 20 youth participants under the Youth Development Institute (YDI). The intervention consisted of two Focus Group Discussions (FGDs), two packaging workshops, and three e-commerce mentoring sessions, focusing on digital literacy and online marketplace integration. A Shopee-based store branded as Rumbia Art was developed as the primary sales platform. The results indicate significant improvements across several indicators: active participants increased from 5 to 20, market-ready products from 1 to 5, e-commerce accounts from 0 to 1, product listings from 0 to 5, and monthly sales from 0 to 2 transactions. Additionally, digital literacy scores improved from 2 to 4 on a 5-point scale. These findings demonstrate that integrating digital marketing strategies with local resource-based skills can effectively strengthen youth entrepreneurship capacity. This study highlights the importance of continuous mentoring and digital transformation in community empowerment programs, particularly in coastal and resource-rich areas.

ABSTRAK

Proyek pengabdian masyarakat ini bertujuan untuk meningkatkan kemandirian ekonomi pemuda Generasi Z di pesisir Tanjungbalai melalui komersialisasi kerajinan pelepah rumbia berbasis digital. Terlepas dari banyaknya sumber daya alam lokal, program pelatihan sebelumnya hanya berhasil mengembangkan keterampilan produksi tanpa meningkatkan akses pasar dan kinerja penjualan secara signifikan. Program ini mengatasi kesenjangan tersebut dengan memberikan pendampingan terstruktur dalam pengemasan produk, branding, dan pemanfaatan e-commerce. Metode ini menggunakan pendekatan pemberdayaan masyarakat partisipatif yang melibatkan 20 peserta pemuda di bawah Youth Development Institute (YDI). Intervensi terdiri dari dua Focus Group Discussion (FGD), dua lokakarya pengemasan, dan tiga sesi mentoring e-commerce, yang berfokus pada literasi digital dan integrasi pasar online. Toko yang berbasis di Shopee bermerek Rumbia Art dikembangkan sebagai platform penjualan utama. Hasilnya menunjukkan peningkatan yang signifikan di beberapa indikator: peserta aktif meningkat dari 5 menjadi 20, produk siap pasar dari 1 menjadi 5, akun e-commerce dari 0 menjadi 1, daftar produk dari 0 menjadi 5, dan penjualan bulanan dari 0 menjadi 2 transaksi. Selain itu, skor literasi digital meningkat dari 2 menjadi 4 pada skala 5 poin. Temuan ini menunjukkan bahwa mengintegrasikan strategi pemasaran digital dengan keterampilan berbasis sumber daya lokal dapat secara efektif memperkuat kapasitas kewirausahaan pemuda. Studi ini menyoroti pentingnya pendampingan berkelanjutan dan transformasi digital dalam program pemberdayaan masyarakat, khususnya di daerah pesisir dan kaya sumber daya.

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Introduction

Tanjungbalai is one of the coastal cities located in North Sumatra Province, Indonesia, strategically positioned along the Malacca Strait. The city is often referred to as the "*Pearl of the Malacca Strait at the downstream of Lake Toba*", reflecting its unique geographical and economic potential. Historically, Tanjungbalai has been known as the "*City of Shellfish*" due to its strong marine-based economy. In addition to marine resources, the region is also rich in coastal vegetation, including mangroves and palm species such as rumbia (*Metroxylon sagu*), which has significant

potential for economic utilization beyond its traditional uses (Efendi, 2023).

In response to this local potential, a previous community service program implemented through a Life Skill Bootcamp successfully trained Gen-Z youth in producing handicrafts from rumbia fronds. This program, conducted collaboratively with the Youth Development Institute (YDI), focused on developing practical skills such as cutting, assembling, and finishing craft products. As a result, participants were able to produce various creative products, including miniature ships, motorcycles, and other decorative items, demonstrating the effectiveness of skill-based community empowerment initiatives (Husein et al., 2022).

Beyond technical skills, the program also incorporated elements of social and leadership development, including communication, teamwork, and time management. These competencies are essential in preparing youth to adapt to real-world challenges and entrepreneurial environments (Nopaldi & Setiawati, 2018). Furthermore, the training emphasized the importance of economic independence by introducing basic marketing concepts, financial management, and collaboration with local industry actors.

However, despite the success in developing production capabilities, the previous program revealed a critical limitation: the absence of a structured marketing strategy. The handicraft products produced by participants had not yet reached optimal market value due to limited knowledge of packaging, branding, and digital marketing. As a result, the products remained largely uncommercialized and lacked consistent sales performance.

Product packaging plays a crucial role in enhancing product value and consumer attractiveness. Packaging is not only a protective element but also a strategic marketing tool that influences purchasing decisions and brand perception (Husein et al., 2022). In the modern market, visual appeal, labeling, and product information significantly contribute to consumer trust and buying interest (Efendi, 2023). Therefore, improving packaging quality is essential for increasing competitiveness, especially for community-based products.

In addition to packaging, the rapid development of digital technology has transformed traditional business models into digital-based systems. Electronic commerce (e-commerce) enables buying and selling activities to be conducted online through internet-based platforms, allowing businesses to reach broader markets more efficiently (Pujiyanto, 2022). The use of digital platforms not only reduces operational costs but also accelerates transaction processes and enhances market accessibility (Musyaffi et al., 2016).

For small-scale community enterprises, adopting e-commerce is no longer optional but necessary to remain competitive in the digital era. Digital platforms such as online marketplaces provide opportunities for product promotion, customer interaction, and business scalability. However, the adoption of such technologies requires adequate digital literacy and technical support (Riyanto, 2021). Without proper guidance, communities—especially youth in coastal areas—may struggle to utilize digital tools effectively.

Moreover, competition in the current business environment demands not only product quality but also strategic positioning, branding, and customer engagement. Effective marketing strategies must integrate both online and offline approaches to sustain customer loyalty and increase sales performance (Efendi, 2023). In this context, packaging and e-commerce serve as complementary components that enhance product visibility and market reach.

Based on the observations conducted, several key issues were identified among the Gen-Z community in Tanjungbalai: (1) limited knowledge of product packaging and branding; (2) lack of skills in digital marketing and e-commerce utilization; (3) absence of structured online sales platforms; (4) low product competitiveness in broader markets; and (5) minimal collaboration with industry stakeholders. These challenges indicate the need for a more comprehensive and integrated empowerment strategy.

Therefore, this study aims to provide a follow-up community mentoring program that focuses on improving product packaging, developing branding strategies, and facilitating e-commerce-based marketing. The program also includes training in online and offline marketing strategies, financial management, and industry collaboration. By integrating these components, the study seeks to enhance the economic independence of Gen-Z youth and increase the commercial value of rumbia frond handicrafts in Tanjungbalai.

Literature Review

The literature review in this study aims to establish a theoretical and empirical foundation for the implementation of community empowerment programs based on digital transformation. Specifically, this section synthesizes key concepts related to youth empowerment, product value enhancement through packaging and branding, and the role of e-commerce in expanding market access for community-based products.

Previous studies indicate that empowerment initiatives often focus primarily on skill development without adequately integrating market-oriented strategies and digital capabilities, resulting in limited economic impact (Nopaldi & Setiawati, 2018; Efendi, 2023). In the context of small-scale community enterprises, particularly those utilizing local resources, the absence of effective marketing strategies and digital literacy remains a critical barrier to sustainability.

Furthermore, the rapid advancement of digital technology has transformed traditional business practices into more efficient and scalable digital systems. The adoption of e-commerce platforms and digital tools has been proven to enhance business performance, increase competitiveness, and improve access to broader markets (Laudon & Traver, 2021; UNCTAD, 2022). However, the successful implementation of such technologies depends on users' readiness, perceived usefulness, and digital competencies (Musyaffi et al., 2016; UNESCO, 2021).

Therefore, this study positions itself at the intersection of community empowerment, product value enhancement, and digital transformation. The integration of these aspects is essential to address existing gaps and to develop a sustainable model for improving the economic capacity of Gen-Z youth in coastal areas. To further clarify the urgency of this intervention, a gap analysis is presented in Table 1.

Table 1. Gap Analysis and Urgency of the Program

Aspect	Existing Condition	Identified Gap	Urgency of Intervention
Natural Resources	Abundant rumbia fronds available	Underutilized for economic purposes	Need for value-added processing
Youth Skills	Able to produce handicrafts	Limited marketing and business skills	Need for entrepreneurship training
Product Quality	Basic craft products available	Weak packaging and branding	Need for packaging innovation
Digital Literacy	Low understanding of e-commerce	No digital marketing practice	Need for digital training
Market Access	Limited to local environment	No online marketplace presence	Need for e-commerce integration
Technology Use	Minimal use of digital systems	Lack of structured digital platform	Need for digital infrastructure

2.1 Community Empowerment and Youth Skill Development

Community empowerment is a strategic approach to improving individual and group capacities through skill development, knowledge transfer, and sustainable economic activities. In non-formal education settings, empowerment programs are often designed to increase participants' motivation and engagement in productive activities (Nopaldi & Setiawati, 2018). This is particularly relevant for Generation Z, who require adaptive skills to face dynamic socio-economic challenges.

Skill-based training programs, such as life skill bootcamps, have been widely implemented to enhance youth productivity and independence. These programs not only focus on technical abilities but also integrate social competencies, including communication, collaboration, and problem-solving skills. Such competencies are essential for preparing youth to participate in entrepreneurial activities and community-based economic development.

Community empowerment refers to a process that enables individuals and groups to gain control over their economic and social conditions (Sufyan et al., 2019). Youth empowerment is particularly important in the digital era, where Generation Z is expected to possess adaptive skills, creativity, and technological competence (OECD, 2021).

2.2 Product Value, Packaging, and Marketability

Product competitiveness is significantly influenced by packaging and branding. Packaging is no longer limited to product protection but has evolved into a critical marketing communication tool that shapes consumer perception and purchase intention (Husein et al., 2022; Rundh, 2016). Empirical studies show that attractive packaging design—through color, shape, labeling, and information—has a significant impact on consumer buying behavior (Abadi et al., 2022; Ampuero & Vila, 2006). For small and medium enterprises (SMEs), packaging innovation plays a vital role in

increasing product value and differentiation in competitive markets (Efendi, 2023).

In addition, branding contributes to building customer trust and loyalty, which are essential for long-term business sustainability (Kotler & Keller, 2016). Therefore, improving packaging and branding is a strategic intervention in community-based entrepreneurship programs.

2.3 Digital Transformation and E-Commerce Utilization

The digital transformation era has fundamentally changed how businesses operate, particularly through the adoption of e-commerce platforms. E-commerce enables transactions to be conducted efficiently without physical interaction, reducing costs and expanding market reach (Pujiyanto, 2022; Laudon & Traver, 2021). Technology Acceptance Model (TAM) explains that perceived ease of use and perceived usefulness significantly influence users' intention to adopt digital systems (Musyaffi et al., 2016; Davis, 1989). This is highly relevant in community contexts, where digital adoption often depends on user familiarity and perceived benefits. Recent studies confirm that e-commerce adoption significantly improves business performance, especially for SMEs and community-based enterprises (UNCTAD, 2022; Nguyen et al., 2021).

Digital platforms such as Shopee, Tokopedia, and social commerce channels provide opportunities for broader market access and customer engagement. Digital literacy is a key determinant of successful participation in the digital economy. It encompasses the ability to access, evaluate, and utilize digital technologies effectively (UNESCO, 2021). Low levels of digital literacy often limit the ability of communities to adopt e-commerce and digital marketing strategies. Studies indicate that training and mentoring significantly improve digital literacy and technology adoption among community members (Riyanto, 2021). Moreover, digital literacy is closely linked to entrepreneurial success, as it enables individuals to utilize online platforms for promotion, communication, and sales (Ismail et al., 2022).

2.4 Information Systems and Digital Infrastructure in Community Development

Information systems play a crucial role in supporting community empowerment by enhancing efficiency, accessibility, and data management. Web-based and mobile-based systems have been widely implemented in educational and organizational contexts to facilitate communication and service delivery (Susanti, 2016; Maharani, 2017). The development of digital platforms, including web services and mobile applications, has improved system integration and user interaction (Arianto, 2016; Sinsuw & Najoan, 2013). Furthermore, structured system architecture frameworks such as TOGAF support the design of scalable and sustainable digital systems (Fitriana & Bakri, 2019).

In community learning centers (PKBM), digital systems have been used to manage learning activities and improve institutional performance (Oktavia et al., n.d.; Sulistiono, 2020). These findings highlight the importance of digital infrastructure in supporting community-based programs. The integration of information systems in community development plays a significant role in improving efficiency and accessibility. Web-based systems and digital platforms have been widely used in educational and organizational contexts to manage information and support decision-making processes (Susanti, 2016; Maharani, 2017). Furthermore, system architecture frameworks, such as TOGAF, provide structured approaches in designing and implementing information systems that align with organizational needs (Fitriana & Bakri, 2019). In community empowerment programs, the use of digital infrastructure can enhance coordination, monitoring, and sustainability of activities.

2.5 Urgency of E-Commerce-Based Community Empowerment

Despite the availability of local resources and prior success in skill-based training, many community products fail to achieve economic sustainability due to limited market access and weak digital capabilities. This gap indicates that empowerment programs must move beyond production-oriented approaches and incorporate digital transformation strategies.

Innovation and digitalization have become essential factors in improving competitiveness in today's business environment (Efendi, 2023; UNCTAD, 2022). Without integrating e-commerce, community-based products are likely to remain confined to local markets with minimal economic impact. Therefore, an integrated approach combining product development, packaging improvement, branding, and e-commerce utilization is urgently needed to enhance the economic value and sustainability of community-based enterprises.

Method

This study employed a participatory community service approach involving 20 Gen-Z participants from the Youth Development Institute (YDI) in Tanjungbalai.

3.1 Research Design

This study employed a community-based participatory approach, focusing on mentoring and capacity building for Gen-Z youth in the Youth Development Institute (YDI) community in Tanjungbalai. The program was designed as a follow-up intervention to address the limitations of

previous life skill training, particularly in terms of product commercialization and market access.

The method emphasized collaborative engagement between the community partners and the service team to ensure that the intervention was aligned with the needs and conditions of the participants (Riyanto, 2021).

3.2 Program Procedure

The implementation of the community service program followed a structured procedure consisting of four main stages: planning, implementation, evaluation, and sustainability.

a. Planning Stage

The planning stage involved joint coordination between the community service team and the YDI partner institution to ensure alignment of objectives and activities. This stage included:

- Needs assessment through observation and interviews with YDI mentors to identify participant challenges and required training materials
- Participant preparation, where Gen-Z youth were selected as the target group
- Administrative and partnership preparation, including agreement formalization between both parties

This stage ensured that the program was designed based on real community needs and readiness.

b. Implementation Stage

The implementation stage consisted of a series of mentoring and training activities designed to enhance both technical and entrepreneurial skills. The main activities included:

- Conducting Focus Group Discussions (FGDs) (2 sessions) to align participants' understanding and evaluate previous training outcomes
- Providing e-commerce platform development, including the creation of an online marketplace (Shopee store: *Rumbia Art*)
- Delivering packaging training (coaching clinic) to improve product quality in terms of hygiene, aesthetics, and economic value
- Facilitating product finishing and coloring training by providing painting tools and hands-on practice
- Supporting branding development, including product naming and identity creation

These activities were conducted through participatory mentoring, allowing participants to actively engage in learning-by-doing processes.

c. Evaluation Stage

The evaluation stage aimed to assess the effectiveness of the program in improving participants' capacity and economic outcomes. Evaluation was conducted through:

- Monitoring participant progress during mentoring activities
- Assessing improvements in product quality and readiness
- Measuring key performance indicators before and after the intervention

Mentors and facilitators collaboratively guided participants in refining their products and ensuring readiness for market distribution. Continuous assistance was also provided in managing product marketing through e-commerce platforms.

d. Sustainability Stage

The sustainability stage ensured that the program outcomes continued beyond the intervention period. At this stage:

- The community partners continued utilizing the provided tools and e-commerce platforms
- Participants independently managed product production and marketing
- The service team documented outcomes and disseminated results through reports and publications

This stage aimed to foster long-term economic independence among participants and ensure the continuity of community-based entrepreneurship.

3.3 Solutions Implemented

Based on the identified problems, the program implemented several key solutions:

1. Development of an e-commerce marketing platform
2. Training on product packaging (hygienic, economical, and attractive)
3. Provision of tools for product finishing (painting equipment)
4. Training on product finishing techniques

5. Assistance in branding and product naming

These solutions were designed to address both production and market-related challenges in an integrated manner.

3.4 Data Collection and Indicators

Data were collected through observation, interviews, and performance-based indicators before and after the intervention (Musyaffi et al., 2016). The success of the program was measured using the following indicators:

Table 2. Data Collection and Indicators

Indicator	Before	After
Active participants	5	20
Market-ready products	1	5
E-commerce accounts	0	1
Product listings	0	5
Monthly sales	0	2
Digital literacy score	2	4

The approach used in this study emphasizes not only skill transfer but also behavioral change and digital adoption among participants.

Result and Discussion

4.1 Results

The results of the community mentoring program aimed at improving the sales of rumbia frond-based handicrafts through e-commerce are presented in several key stages.

4.1.1 Focus Group Discussion (FGD) Outcomes

The initial stage involved conducting two Focus Group Discussions (FGDs) with community mentors and Gen-Z participants. This activity aimed to evaluate the outcomes of the previous program and align participants’ understanding regarding product development.

The FGD resulted in a mutual agreement on the types of products to be developed and marketed through digital platforms. The selected products included:

- Miniature motorcycles



Figure 1. Motorcycle Miniature

- Miniature ships



Figure 2. Ship Miniature

These products were chosen based on their aesthetic appeal, feasibility of production, and potential market demand. The alignment process played a crucial role in ensuring consistency in product quality and branding direction.

4.1.2 E-Commerce Platform Development

An e-commerce platform was developed prior to the implementation phase to ensure efficiency during training. The selected platform was Shopee, considering its accessibility, popularity, and suitability for small-scale product marketing. The platform, branded as *Rumbia Art*, serves as the primary marketplace for showcasing and selling the products. The establishment of this platform marked a significant transition from conventional to digital marketing practices.

4.1.3 Product Quality Improvement and Technical Mentoring

The mentoring activities focused on improving product quality through:

- Provision of painting tools
- Training on product finishing techniques
- Coaching on aesthetic enhancement

Participants were guided in improving the visual appeal of their products, including color application and finishing quality. The involvement of expert facilitators ensured that participants gained practical and applicable skills.

The activities were conducted collaboratively with stakeholders, including local government representatives and community leaders, which enhanced program legitimacy and participant motivation.

4.1.4 Participant Engagement and Institutional Support

The program involved active participation from Gen-Z youth, community mentors, university lecturers, and local government representatives. The high level of participation reflects strong community engagement and support.

Participants demonstrated enthusiasm throughout the activities, indicating the relevance of the program to their needs and aspirations.

4.1.5 Branding Development (Ongoing Process)

The branding stage, including product naming and intellectual property registration, is currently in progress. This phase focuses on strengthening product identity and market positioning.

Although not fully implemented during the intervention period, this stage represents a critical component for long-term sustainability.

5.1 Discussion

The findings of this study highlight several important aspects of community empowerment

through digital-based interventions.

5.1.1 From Skill-Based Training to Market-Oriented Empowerment

The transition from previous skill-based training to market-oriented mentoring represents a significant improvement in the empowerment approach. Earlier programs focused primarily on production skills, whereas this intervention integrates production, marketing, and digitalization.

This finding supports previous research indicating that empowerment programs must incorporate market access strategies to achieve sustainable economic impact (Efendi, 2023). Without such integration, skill development alone is insufficient to generate income.

5.1.2 The Role of E-Commerce in Expanding Market Access

The development of the *Rumbia Art* e-commerce platform demonstrates the critical role of digital technology in community-based enterprises. E-commerce enables participants to overcome geographical limitations and access broader markets.

This aligns with the concept that digital platforms significantly enhance business efficiency and competitiveness (Pujianto, 2022). Moreover, the adoption of e-commerce reflects the principles of technology acceptance, where perceived usefulness and ease of use influence user engagement (Musyaffi et al., 2016).

5.1.3 Product Value Enhancement through Packaging and Finishing

Improvement in product finishing and aesthetics contributed to increased product attractiveness and perceived value. This finding is consistent with previous studies emphasizing the importance of packaging and visual appeal in influencing consumer purchasing decisions (Husein et al., 2022).

In community-based products, visual quality often determines market acceptance. Therefore, technical mentoring in finishing and packaging is essential to enhance competitiveness.

5.1.4 Participatory Approach and Community Engagement

The participatory nature of the program played a key role in its success. The involvement of multiple stakeholders—including youth participants, community mentors, academics, and local government—created a collaborative learning environment. Such an approach is consistent with community empowerment principles that emphasize active participation and shared responsibility (Riyanto, 2021). High participant engagement also indicates that the program effectively addressed real community needs.

5.1.5 Challenges and Limitations

Despite the positive outcomes, several challenges were identified:

- Branding development was not fully completed during the intervention period
- Sales performance is still in the early stage
- Participants require continuous mentoring to sustain digital marketing activities

These findings indicate that community empowerment is a long-term process that requires continuous support and adaptation.

5.1.6 Implications for Community Empowerment Models

This study contributes to the development of an integrated community empowerment model that combines:

- Local resource utilization
- Youth skill development
- Product value enhancement
- Digital marketing adoption

Such an integrated approach is essential in addressing complex socio-economic challenges in community settings. The findings suggest that combining technical skills with digital transformation strategies can significantly improve the effectiveness of empowerment programs. The findings confirm that empowerment programs must integrate technical skills with digital transformation strategies. This study contributes a practical model combining local resource utilization, youth empowerment, and e-commerce integration—an area still underexplored in community service research. In light of these neuroscientific findings and recognizing the lack of studies on vocabulary competence in secondary EFL context, this study investigates whether vocal training with authentic English pop songs enhances multi-word unit learning.

Conclusion

This community service program demonstrates that integrating product development, packaging improvement, and e-commerce utilization can significantly enhance the economic capacity of Gen-Z youth in coastal areas. The mentoring activities successfully transformed a previously production-oriented training model into a more comprehensive, market-oriented empowerment approach.

The results indicate measurable improvements in participant engagement, product readiness, digital literacy, and initial market access, as evidenced by the establishment of the *Rumbia Art* e-commerce platform and the emergence of early sales transactions. These findings confirm that digital integration plays a crucial role in increasing the competitiveness of community-based products. From a practical perspective, this study highlights the importance of continuous mentoring, particularly in strengthening digital marketing skills, branding strategies, and product standardization. From a theoretical standpoint, the study contributes to the development of an integrated community empowerment model that combines local resource utilization, youth capacity building, and digital transformation.

However, this study also identifies several limitations, including the incomplete implementation of branding strategies and the relatively short observation period for measuring long-term economic impact. Therefore, future programs should focus on scaling up production capacity, strengthening brand identity, and expanding market reach through multi-platform digital strategies.

In conclusion, sustainable community empowerment requires not only skill development but also the integration of digital technology and market-oriented strategies to ensure long-term economic independence.

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