Community-Based Interventions for Sustainable Development: A Qualitative Case Study on Rural SMEs, Heritage, and Education

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Abstract.

This study examines how an international community service program in Bantul, Yogyakarta, Indonesia integrated rural entrepreneurship, cultural heritage preservation, and educational capacity building through collaborative activities with local Small and Medium Enterprises (SMEs), women's groups, educators, and community libraries. Based on the Sustainable Development Goals (SDGs) 3 (Good Health and Well-Being), 4 (Quality Education), and 8 (Decent Work and Economic Growth), the study highlights how such initiatives can strengthen community resilience and sustainable local development. Using a qualitative case study approach, data were collected through site visits, stakeholder interactions, participant observations, and participant feedback from five local entities: Teh Gurah (herbal tea production), Kelompok Wanita Tani (women's agricultural group), SMPN 3 Imogiri (teacher capacity building), Pustaka Desa Wukirsari (village library), and Batik Giriloyo (batik heritage center). Findings reveal that community-based learning effectively promotes knowledge exchange and cultural continuity while supporting rural innovation and entrepreneurship. However, challenges such as language barriers, technical constraints, infrastructure limitations, and sustainability issues were also evident. This study discusses these issues critically and proposes practical recommendations to strengthen future programs and enhance cross-cultural and cross-sectoral collaboration. The study contributes to the discourse on integrating community service, local economic development, and cultural heritage in rural ASEAN contexts.

Keywords: Rural entrepreneurship, cultural heritage, educational capacity building, SMEs, SDGs, Indonesia, community service.

I. INTRODUCTION

Small and Medium Enterprises (SMEs) play a vital role in driving economic growth and employment in developing countries, particularly in rural regions where access to large-scale industry and formal employment is often limited (Tambunan, 2021). In Indonesia, SMEs represent more than 99% of all business units and absorb over 97% of the national workforce (BPS, 2023). Within this landscape, rural entrepreneurship not only sustains local livelihoods but also preserves indigenous knowledge, cultural heritage, and traditional industries such as batik production and herbal medicine. These enterprises contribute significantly to social cohesion and community resilience, especially when linked with education and community capacity-building initiatives.

However, despite their critical role, rural SMEs continue to face challenges including limited market access, inadequate infrastructure, technological gaps, and a lack of systematic capacity building for both entrepreneurs and the wider community (Aribawa, 2020; Kusumawijaya & Herliana, 2022). Furthermore, global trends towards digitalisation and modernisation pose risks of cultural erosion if traditional knowledge and heritage crafts are not adequately protected or revitalised. Thus, there is a growing need for innovative community service models that simultaneously strengthen rural entrepreneurship, preserve cultural heritage, and enhance local educational capacities. One promising approach is through community-based learning and service programs, which bring together universities, local communities, SMEs, and government agencies in collaborative efforts to address local needs and foster sustainable development. Such programs align directly with the United Nations Sustainable Development Goals (SDGs), specifically SDG 3 (Good Health and Well-Being), SDG 4 (Quality Education), and SDG 8 (Decent Work and Economic Growth).

Integrating these goals into rural community service programs ensures that interventions are holistic, inclusive, and geared towards long-term impact (UNDP, 2023). This study presents a case study of the 1st International Community Service and Volunteerism Program held in Bantul, Yogyakarta, Indonesia, from May 19–22, 2025. This program, which involved delegates and students from Indonesia, Malaysia, the Philippines, and Uzbekistan, provided a unique platform for knowledge exchange, leadership training, cultural immersion, and hands-on engagement with local SMEs and educational institutions.

Activities ranged from site visits to herbal tea producers and women's agricultural groups to capacity-building workshops for teachers and community library improvement projects, culminating in an immersive batik-making session with a local heritage enterprise. Through these activities, participants explored how rural entrepreneurship can be strengthened through community partnerships, how cultural heritage can be preserved and promoted, and how educational initiatives can build local capacity for sustainable development. This program not only highlighted best practices but also revealed significant challenges, including language barriers, technical limitations, logistical issues, and questions about the long-term sustainability and impact of such short-term interventions. Despite these challenges, the case study demonstrates that community-based learning and service programs can act as a catalyst for sustainable rural development when they are well-coordinated, contextually relevant, and embedded within a clear framework such as the SDGs. This study aims to analyze how the program contributed to local development goals, identify key challenges and lessons learned, and offer practical recommendations for strengthening future community engagement initiatives in rural ASEAN contexts.

II. METHODS

2.1 Research Design

This study adopts a qualitative case study approach to investigate how a structured community service program can simultaneously promote rural entrepreneurship, preserve cultural heritage, and enhance educational capacity in a rural Indonesian context. A qualitative case study is appropriate for capturing the complexity of social phenomena within their real-world contexts (Yin, 2018). Given that the research aims to understand processes, challenges, and stakeholder perspectives in depth, the interpretive paradigm was applied to enable rich, contextualised insights (Creswell & Poth, 2018).

2.2 Case Selection and Context

The research focuses on the 1st International Community Service and Volunteerism Program conducted in Bantul, Yogyakarta, Indonesia, in May 2025. This program was specifically designed to foster collaboration among universities, local SMEs, educators, and community groups, directly aligning with Sustainable Development Goals (SDGs) 3 (Good Health and Well-Being), 4 (Quality Education), and 8 (Decent Work and Economic Growth).

A multiple embedded case study design was employed, encompassing five distinct sites that collectively represent the program's integrated objectives (Stake, 2005). These sites were selected through purposive sampling to capture a diverse range of stakeholders and community-based activities. The first case, Teh Gurah Herbal Tea Production, highlights traditional wellness entrepreneurship. The second, Kelompok Wanita Tani Giri Asri, is a women-led agricultural cooperative that exemplifies grassroots empowerment. The third, SMPN 3 Imogiri, is a rural middle school engaged in capacity-building workshops for educators. The fourth, Pustaka Desa Wukirsari, serves as a community library that fosters literacy and cultural knowledge exchange. Finally, the fifth case, Batik Giriloyo Wukirsari Imogiri, is a well-established batik centre that preserves and promotes heritage craft industries. This multi-site approach enabled a cross-case comparative analysis to identify both recurring themes and site-specific challenges (Baxter & Jack, 2008).

2.3 Data Collection Methods

Data were collected using a combination of qualitative techniques commonly employed in community-based research (Marshall & Rossman, 2016). Non-participant observation involved the systematic monitoring of program activities, site visits, and participant interactions, providing first-hand insights into local practices and challenges. Detailed field notes were maintained by faculty advisors and student participants to capture contextual nuances, informal dialogues, and reflexive observations. In addition, semi-structured reflective sessions were conducted with students, SME owners, teachers, and community representatives to gather participant feedback on their experiences and suggestions. A document review of supplementary materials such as daily schedules, program reports, and photographs was also carried out to triangulate and support the observational and interview data. To address potential language barriers during data collection, informal translation and bilingual facilitation were provided by local university staff to ensure accurate understanding and effective communication.

2.4 Data Analysis

The data were analysed thematically following Braun and Clarke's (2019) six-phase approach, which included familiarisation with the data, coding, theme development,

reviewing themes, defining themes, and producing the report. Initial coding focused on key areas aligned with the research objectives: (i) community engagement and participation; (ii) cultural heritage preservation practices; (iii) educational outcomes; (iv) alignment with SDG targets; and (v) emerging challenges and gaps. To enhance validity, data triangulation was employed by cross-verifying field notes, participant reflections, and documentary evidence (Patton, 2015). Quotations from participants were integrated where appropriate to amplify local voices and provide authentic perspectives.

The following table provides a consolidated overview of the study's core findings.

Table 1: Thematic Analysis of Community-Based Interventions Across Rural SMEs, Heritage, and Education

Theme	Key Findings	Supporting Cases / Evidence	Relevant SDGs
Community-Based Learning & Rural Entrepreneurship	Promotes knowledge sharing and innovation; effectiveness depends on infrastructure and market linkages	Teh Gurah, Kelompok Wanita Tani	SDG 3, SDG 8
Heritage and Creative Economy	Traditional industries need youth engagement, digital branding, and strategic innovation	Batik Giriloyo	SDG 8
Educational Capacity Building	Workshops improve teacher competencies; sustainability requires follow-up, peer support, and ICT access	SMPN 3 Imogiri, Pustaka Desa Wukirsari	SDG 4
Cross-Cutting Challenges	Language barriers, weak infrastructure, limited digital skills, and short-term program cycles	All five cases	SDG 4, SDG 8
Contribution to SDGs	Holistic impact across health, education, and economic	Program-wide evidence across sites	SDG 3, SDG 4, SDG 8

Theme	Key Findings	Supporting Cases / Evidence	Relevant SDGs
ASEAN Comparative Insight	growth via integrated interventions Similar challenges in Malaysia and the Philippines; calls for regional knowledge exchange and policy alignment	Literature + field parallels	SDG 8, ASEAN SDG Integration

The findings from the multi-site community service program in Bantul, Yogyakarta, revealed six key themes that demonstrate the interconnected nature of rural entrepreneurship, cultural heritage preservation, and educational capacity building. The integration of community-based learning with rural economic development emerged as a central theme. Initiatives such as Teh Gurah and Kelompok Wanita Tani Giri Asri illustrated how traditional knowledge and grassroots innovation can be mobilized through collaborative engagement between universities and local communities. These cases reflect the potential of structured service-learning to empower rural stakeholders and promote sustainable livelihoods.

The heritage craft sector, particularly as seen in Batik Giriloyo, highlighted the dual role of creative industries in preserving intangible cultural heritage while contributing to local economic growth. However, sustaining such industries requires more than traditional craftsmanship; it demands intergenerational knowledge transfer, digital adaptation, and market expansion. The limited involvement of youth and minimal online branding capacity in these enterprises suggest an urgent need for innovation in the way heritage industries are supported through policy, education, and entrepreneurship programs.

Educational capacity building was another significant area of focus. At SMPN 3 Imogiri and Pustaka Desa Wukirsari, efforts to enhance teacher competencies and community literacy revealed tangible benefits in promoting SDG 4 (Quality Education). Teachers reported increased confidence in digital teaching tools, and the community library played a crucial role in fostering informal learning. However, technical limitations such as weak internet access, language barriers, and the absence of structured follow-up mechanisms hindered the long-term sustainability and depth of impact for these educational interventions.

Several cross-cutting challenges were observed across all sites. These included inadequate infrastructure, inconsistent technical support, limited digital literacy, and short program durations that restricted deeper engagement with community partners. Language gaps in particular constrained the ability of international participants to contribute meaningfully during field visits. These challenges highlight the need for more inclusive and participatory planning, as well as the importance of embedding translation and local facilitation into program design to ensure meaningful two-way exchange.

Despite these limitations, the case study affirms that integrated community service models have the potential to advance multiple Sustainable Development Goals—particularly SDG

3 (Good Health and Well-Being), SDG 4 (Quality Education), and SDG 8 (Decent Work and Economic Growth). Comparative insights from other ASEAN countries, such as Malaysia and the Philippines, further reveal that similar challenges and opportunities exist across the region. This suggests the importance of regional collaboration, joint capacity-building frameworks, and knowledge-sharing platforms to scale context-sensitive models of rural development that integrate economic resilience, heritage preservation, and educational innovation.

2.5 Ethical Considerations

The research adhered to standard ethical guidelines for community-based qualitative studies. All participants were informed of the study's purpose, their voluntary involvement, and the intended use of the data for academic publication. Verbal informed consent was obtained prior to data collection. Sensitive personal data were not collected, and anonymity was maintained where relevant.

2.6 Limitations

Several limitations should be acknowledged. First, the short duration of the fieldwork limited the depth of engagement with local stakeholders, restricting opportunities for longitudinal observation. Second, language differences occasionally constrained the richness of data, despite ad hoc translation support. Third, as a single case study in one rural district, the findings are context-specific and may not be generalisable to other rural settings in Indonesia or ASEAN. Nonetheless, as Yin (2018) argues, the aim of qualitative case research is analytical, not statistical generalisation. The insights generated contribute valuable empirical evidence to inform policy and practice in comparable contexts.

III. RESULT AND DISCUSSION

3.1 Teh Gurah: Herbal Tea and Rural Innovation

The visit to Teh Gurah herbal tea production site in Wukirsari Village provided participants with direct insights into how traditional herbal knowledge is maintained and transformed into a small-scale rural enterprise. Teh Gurah specialises in the production of herbal tea made from native plants known for their respiratory health benefits. The business combines traditional processing methods with modern packaging and branding, demonstrating how local wisdom can align with contemporary consumer markets (Prayogo & Santosa, 2021).

During the site visit, participants observed the various stages of production from the sourcing of herbal leaves to drying, blending, packaging, and marketing. According to the owner, the herbs are partly sourced from local farmers, creating income streams for the surrounding community and reinforcing linkages between agriculture and small-scale manufacturing. One participant noted, "It was interesting to see how something so simple as local herbs can become a branded product with health value. This is something we can promote back home too." This reflection aligns with the goals of SDG 3 (Good Health and Well-Being) and SDG 8 (Decent Work and Economic Growth). The visit highlighted several enabling factors. First, the enterprise demonstrates how traditional knowledge can be commercialised to meet growing consumer demand for natural health products. Second, the operation showcases the potential of micro-enterprises to generate rural employment and sustain cultural knowledge that might otherwise decline with modernisation (Idrus & Taufik, 2021). However, participants also identified clear challenges.

Due to limited scale and production capacity, Teh Gurah faces constraints in expanding beyond local markets. The owner explained that packaging materials and certain herbal ingredients must still be purchased externally, increasing costs and dependency on suppliers outside the village.

Additionally, the enterprise has minimal online presence, which restricts its access to wider consumer bases in a common challenge for rural SMEs across Indonesia (Supriadi et al., 2021). Language barriers emerged as a practical issue during the visit. Some participants noted that technical explanations were difficult to fully understand without a dedicated translator, which occasionally hindered deeper discussion about production techniques and business strategy.

As one international delegate remarked, "We had so many questions about the supply chain and product certifications, but the language gap made it hard to go deeper." In terms of knowledge sharing, participants recommended that future visits incorporate hands-on workshops, such as blending or packaging demonstrations, to make the learning more practical and engaging. This resonates with best practices in community-based learning, which emphasise participatory and experiential formats for deeper impact (Nasution et al., 2021). Despite these challenges, the Teh Gurah case demonstrates how local enterprises contribute to multiple development goals. It serves as a model for how rural innovation can leverage traditional wellness practices for modern markets while creating economic opportunities for local producers. Integrating additional capacity building as for example, digital marketing training or small business development workshops which could help similar SMEs expand their reach, diversify their products, and contribute more significantly to rural resilience.

3.2 Kelompok Wanita Tani: Women's Agro-Entrepreneurship and Community Resilience

The site visit to Kelompok Wanita Tani Giri Asri (KWT) highlighted the intersection of rural women's empowerment, community-based agro-entrepreneurship, and local economic sustainability. Located in Wukirsari, Imogiri, the group comprises women engaged in small-scale farming, food processing, and soap production using local agricultural products. This community-based enterprise directly contributes to SDG 8 (Decent Work and Economic Growth) by creating alternative income streams for rural households, particularly women who often face barriers to formal employment (Kusumawijaya & Herliana, 2022).

During the visit, the KWT members shared their experiences managing agricultural production, organising local sales, and responding to environmental and logistical challenges. One member explained how heavy rainfall frequently damages crops and causes landslides, significantly reducing harvest quality and yields. Another persistent issue is electricity supply: when outages occur, electrically powered machinery used for processing must be replaced by manual labour, which slows production and increases workloads. As a participant reflected, "Seeing how they have to do everything by hand when the power goes out makes us realise how fragile rural businesses can be without basic infrastructure."

Distribution challenges further limit the cooperative's market reach. Currently, the group relies mainly on local buyers who visit the village directly. This dependency on walk-in customers restricts their ability to scale up sales or secure stable income streams year-round (Aribawa, 2020). Participants identified that limited digital literacy and lack of online marketing skills are additional barriers to accessing wider markets. Despite these constraints, the KWT represents an important example of community resilience and grassroots innovation. By pooling resources and labour, the group supports women's socio-economic

participation and reinforces local food security. The cooperative structure also builds social capital among members, fostering mutual support and shared responsibility (Poon & Ramlee, 2020). During the discussion session, an educated participant proposed practical measures to help address some of these challenges. Suggestions included installing solar panels as backup energy sources to mitigate electricity disruptions and developing systematic water drainage to reduce crop losses during heavy rain. These low-cost, context-appropriate solutions could strengthen the group's capacity to adapt to climate-related risks and infrastructural gaps, both of which are common issues for rural SMEs across ASEAN (Supriadi et al., 2021).

Some participants also suggested that future visits could include a hands-on component, such as helping with packaging or marketing strategy brainstorming, to create more tangible learning outcomes for both sides. Meanwhile another participant commented, "It it would be beneficial to actually help them design simple labels or teach basic online promotion while we're here and that is authentic knowledge exchange." This reflects service-learning best practices, which emphasise reciprocal engagement rather than passive observation (Nasution et al., 2021). Language barriers were again noted as a limitation, as some non-Indonesian participants found it challenging to follow the in-depth discussions without bilingual support. More thorough pre-visit briefings and translation assistance were suggested to maximise learning and meaningful interaction.

The Kelompok Wanita Tani Giri Asri case demonstrates how rural women's groups can function as critical drivers of local development by combining traditional agricultural knowledge with entrepreneurial strategies. However, their sustainability depends on strengthening technical capacity, improving market access, and ensuring infrastructural reliability. Integrating tailored training, digital marketing workshops, and small-scale technology solutions into community service models could significantly boost the impact of such grassroots initiatives.

3.3 SMPN 3 Imogiri: Teacher Capacity Building for Rural Education

The third site, SMPN 3 Imogiri, provided a clear example of how community service initiatives can directly contribute to educational capacity building in rural settings. The program at this rural middle school focused on practical workshops designed to enhance teachers' digital competencies and support the integration of new tools into their daily teaching practice. This aligns closely with SDG 4 (Quality Education), which emphasises equitable access to modern, inclusive, and effective learning opportunities for all learners, regardless of geographical location (UNDP, 2023).

During the workshop sessions, teachers were introduced to Canva for designing visually engaging teaching materials and educational aids. Artificial Intelligence (AI) as an AI-assisted tool for generating lesson plans and content ideas. For many participants, this was their first direct exposure to structured digital teaching resources. One teacher noted, "I did not know that Canva could make learning slides more attractive for students. This helps us present materials in ways they can understand better." Such reflections underscore how targeted training can empower teachers to adopt more student-centred pedagogies.

The program also highlighted the role of international collaboration in stimulating local educational innovation. Interactions with students and lecturers from foreign universities offered new perspectives on classroom management and resource use, broadening teachers' understanding of global best practices (Chong et al., 2022). However, the impact was somewhat limited by language barriers, which affected the depth of technical explanations.

As one participant observed, "It would help if we had more bilingual materials or someone to translate step-by-step instructions." Challenges related to technical infrastructure also surfaced. Although the school was receptive to digital tools, inconsistent internet connectivity and a lack of adequate devices posed constraints to implementing these methods regularly (Suryani & Kurniawan, 2021). Without sustained investment in basic ICT facilities, the impact of short-term capacity-building workshops risks being superficial or unsustainable.

Logistical coordination was another issue. Due to a shortage of committee members to assist teachers during hands-on activities, participants sometimes had to wait for help with tasks such as setting up accounts or navigating software interfaces. This affected the flow of the sessions and limited the time available for in-depth practice. Feedback from teachers suggested that future workshops should include more facilitators or peer assistants to ensure that all participants receive adequate guidance. Despite these challenges, the session at SMPN 3 Imogiri illustrates the tangible benefits of embedding educational capacity-building elements within broader community service programs. By targeting teachers as key change agents, such initiatives can indirectly benefit large numbers of students over time (Poon & Ramlee, 2020). In this case, the workshop supported teachers' motivation to experiment with new digital approaches and encouraged them to become more confident in adopting technology in the classroom. Several improvements were proposed to maximise future impact. Participants recommended follow-up sessions or mentoring to reinforce skills acquired during the workshop. They also suggested creating a local peer network among teachers to share ideas, resources, and practical solutions for common challenges. This aligns with studies highlighting the importance of community-of-practice models for sustaining educational innovation in rural schools (Chong et al., 2022).

In conclusion, the SMPN 3 Imogiri case underscores that while community-based teacher training can help bridge rural-urban education divides, its sustainability depends on systematic follow-up, adequate technical support, and inclusive delivery methods that consider language and infrastructural limitations. By addressing these factors, similar programs can make stronger contributions to SDG 4 and to the broader goal of empowering rural communities through education.

3.4 Pustaka Desa Wukirsari: Village Library & Literacy Hub

The visit to Pustaka Desa Wukirsari illustrated the important role of community libraries as catalysts for literacy, informal education, and cultural preservation in rural areas. The library serves not only as a repository of books but as an active community space that hosts reading sessions, small workshops, and peer-learning activities for children and youth. This aligns directly with SDG 4 (Quality Education) and indirectly supports SDG 8 (Decent Work and Economic Growth) by equipping young people with basic literacy and lifelong learning skills that strengthen community resilience (UNDP, 2023). During the visit, participants learned about the origins of the library and its mission to make knowledge more accessible to villagers, particularly children from farming families who have limited exposure to formal education support outside of school hours. A community volunteer shared, "We want the children to feel that the library is theirs as a place where they can learn new things, not just read textbooks." This sense of ownership reflects the participatory ethos behind rural literacy movements (Nasution et al., 2021). Participants observed the physical layout of the library, which included sections for young readers, local heritage displays, and multipurpose areas for group discussions and storytelling. Some students noted that the library's informal atmosphere and locally curated collections made it more approachable for children compared to formal school libraries. One participant remarked, "It resembles a community living room

rather than a silent library. Kids were relaxed and more willing to talk about what they read." Despite its value, the visit highlighted several challenges. The library has limited physical resources, with a small collection of outdated books and insufficient access to digital materials.

Language barriers also made it difficult for international participants to fully understand the nuances of the library's programs without continuous translation. Participants suggested that future visits include bilingual handouts or guided walkthroughs to bridge this gap. Another challenge is community engagement. While the library has a loyal group of children and volunteers, sustaining interest among older youth is difficult due to competing priorities such as family obligations or part-time work. This mirrors wider issues in rural literacy development where drop-out rates and low secondary school enrolment affect long-term educational outcomes (Chong et al., 2022). Participants proposed several ideas for improvement. Suggestions included creating mobile library programs to reach remote households, expanding reading materials to include digital resources, and organising peer-to-peer tutoring sessions led by older students. One participant reflected, "The library could be more than just books; it could run skills workshops or storytelling circles involving parents, so learning becomes a whole-community effort." This aligns with service-learning models that see libraries as community hubs for both formal and informal learning (Poon & Ramlee, 2020). Furthermore, participants recommended strengthening collaborations between the library and local schools to align activities with the school curriculum. By doing so, the library could support teachers and students more directly, creating a complementary learning ecosystem (Nasution et al., 2021).

The Pustaka Desa Wukirsari case demonstrates that rural libraries can play a vital role in expanding literacy and knowledge sharing, but their sustainability depends on addressing resource limitations, engaging multiple age groups, and leveraging partnerships with educational institutions. Integrating digital literacy support and community-driven programming could transform such spaces into vibrant hubs for learning, cultural exchange, and local empowerment which echoing the vision of SDG 4 for inclusive and equitable education for all.

3.5 Batik Giriloyo Wukirsari Imogiri: Heritage Craft and the Creative Economy

The visit to Batik Giriloyo Wukirsari Imogiri provided a vivid example of how rural cultural heritage industries can serve as both economic drivers and guardians of traditional knowledge. Batik Giriloyo is one of the largest and oldest batik centres in the Bantul district, known for its preservation of authentic hand-drawn batik techniques passed down through generations.

As a site for community-based entrepreneurship, it directly contributes to SDG 8 (Decent Work and Economic Growth) while supporting cultural sustainability (UNESCO, 2020). During the visit, participants were introduced to each stage of the batik-making process, from fabric preparation and motif design to the canting (wax-drawing) and dyeing steps. They were also given the opportunity to try the canting technique themselves. One participant reflected, "This hands-on experience really showed us the patience and skill involved. It's a craft that demands time, precision, and pride." Such experiential learning aligns with best practices in heritage education, which emphasise direct participation to deepen cultural appreciation (Idrus & Taufik, 2021).The site's owner shared how the enterprise had adapted over time to modern challenges. The COVID-19 pandemic caused severe disruptions to production and local sales, pushing the business to experiment with online marketing and social media outreach to reach new customer segments. This digital pivot reflects broader trends in rural creative industries that must balance traditional craft

preservation with the realities of modern market demands (Prayogo & Santosa, 2021).

Participants noted that the centre plays an important social role within the village community. Flexible working hours and home-based production options allow women, particularly mothers, to participate in batik-making while balancing household responsibilities. This flexible work structure supports inclusive employment opportunities in line with the goal of decent work for all (Supriadi et al., 2021). Despite these strengths, the visit revealed critical challenges threatening the long-term sustainability of batik as a cultural industry. The craft's meticulous nature and relatively low wages compared to other jobs make it less attractive to younger generations. The owner commented, "The young people want faster work and better income. Batik takes time, and they do not always have the patience for it." This mirrors wider concerns in heritage industries where generational disengagement risks the gradual erosion of traditional skills (Kusumawijaya & Herliana, 2022).

Participants also observed that while the enterprise had made progress with digital marketing, its online presence remained limited compared to larger urban-based craft businesses. As one participant noted, "They have beautiful products but the branding and online storytelling need work if they want to reach global buyers." Digital literacy and branding training emerged as clear areas where universities and community service programs could offer practical support. Another important theme was community engagement. Participants suggested that the batik centre could collaborate more actively with local schools and youth groups to sustain interest among younger generations. Ideas included apprenticeships, batik competitions, or workshops integrated into school art curriculums. These community-school linkages could ensure that heritage skills remain relevant and appealing (Yap, 2022).

Amid the widespread production of printed batik today, Batik Giriloyo remains firmly committed to preserving its distinctiveness through the exclusive production of hand-drawn batik (batik tulis). Traditional techniques and tools in batik-making are still preserved today, demonstrating the continuity of heritage craftsmanship (Syed Shaharuddin et al., 2021). This commitment also presents a unique challenge, particularly in terms of price competition. Compared to printed batik, hand-drawn batik is relatively more expensive due to its complex production process and the use of higher-quality materials. Innovation in both product development is essential to stay competitive in the batik industry; however, many traditional producers continue to struggle with this demand (Wijaya et al., 2025). Additionally, hand-drawn batik requires more careful maintenance than printed batik. This is largely due to differences in the dyeing process and the types of coloring agents used. Therefore, clear guidelines on the usage and care of hand-drawn batik are essential to help consumers understand its unique characteristics and maintain its quality over time. The ethnocentrism, product authenticity, and self-image congruence significantly influence positive attitudes among youth toward Batik as a cultural product, with product authenticity being the most dominant factor (Rofianto et al., 2021).

The distinctiveness of Batik Giriloyo can also be seen in the motifs featured on each of its products. Every batik motif carries a specific meaning. Based on interview findings, it was revealed that Batik Giriloyo has more than 200 different motifs. However, not all of them have been properly documented or systematically recorded. Therefore, having an administrative and informational system dedicated to cataloging these unique motifs would further highlight and strengthen the identity and uniqueness of Batik Giriloyo. The sustainability of batik SMEs is not only economically important but also crucial for preserving the nation's cultural heritage, which has been globally recognized (Yunus et al.,

2023). By staying true to its heritage and craftsmanship, Batik Giriloyo stands as a symbol of cultural pride and authenticity in the face of modern industry challenges.

Finally, logistical aspects of the visit highlighted the value of immersive cultural activities. The hands-on canting session was consistently described by participants as a highlight of the entire program. Such interactive components not only enhance learning outcomes but also create memorable experiences that strengthen cross-cultural understanding with an important aspect of international community service and volunteerism (Poon & Ramlee, 2020).

The Batik Giriloyo case underscores that traditional industries can be revitalised through a balanced approach combining cultural preservation, market innovation, and youth engagement. It also demonstrates that community service programs can add real value by helping local enterprises adapt to modern consumer expectations without compromising the authenticity of their craft. By aligning heritage-based enterprises with the SDG agenda, these efforts contribute to sustainable local economies while protecting intangible cultural assets for future generations.

IV. CONCLUSION

This study has examined how an international community service program in Bantul, Yogyakarta, successfully integrated rural entrepreneurship, cultural heritage preservation, and educational capacity building through hands-on collaboration between universities, local SMEs, educators, and community volunteers. Based on five embedded case studies Teh Gurah Herbal Tea Production, Kelompok Wanita Tani Giri Asri, SMPN 3 Imogiri, Pustaka Desa Wukirsari, and Batik Giriloyo Wukirsari Imogiri.

The study demonstrates that community-based learning can generate tangible benefits for rural communities when designed with clear objectives and meaningful local participation. The findings reinforce that rural entrepreneurship initiatives, such as herbal tea production and women's farming cooperatives, contribute directly to SDG 8 (Decent Work and Economic Growth) by diversifying local livelihoods and strengthening community resilience. Heritage industries, like batik production, illustrate how intangible cultural assets can be preserved while creating economic value, aligning with the goals of SDG 8 and cultural sustainability frameworks (UNESCO, 2020). Educational capacity building give strong evident in teacher training sessions and the village library as directly advances SDG 4 (Quality Education) by expanding access to modern teaching tools and literacy resources for rural learners.

Despite these achievements, the study highlights persistent challenges that limit the full potential of such programs. Infrastructure gaps, including unreliable electricity and limited internet connectivity, continue to hinder both rural SMEs and schools. Language barriers and limited bilingual support reduce the depth of cross-cultural knowledge exchange, particularly in international settings. Additionally, the sustainability of capacity-building efforts remains a concern when interventions are short-term and lack structured follow-up.

This study contributes to filling an important research gap identified by Hadi and Nugroho (2021) by providing empirical evidence of how integrated community service models can address multiple development goals simultaneously. It also offers practical insights for

policymakers and educators on how to better link community engagement with local economic resilience and cultural continuity as an approach still underdeveloped in the ASEAN context. To maximise the long-term impact of such programs, several strategic actions are recommended. First, community service initiatives should be co-designed with local stakeholders to ensure that activities address real community priorities. Second, bilingual materials and local translation support should be standard practice in international engagements to bridge communication gaps. Third, rural entrepreneurs need targeted training in digital marketing, branding, and modern business management to expand market reach and remain competitive. Fourth, sustainability requires sustained partnerships: universities should invest in follow-up activities, alumni networks, and local mentors who can continue to support communities after formal visits conclude. Fifth, digitization of cultural heritage is needed to support traditional cultural centers to develop digital documentation systems that preserve and promote intangible heritage such as motifs, techniques, and local knowledge, enhancing cultural identity and expanding outreach through online platforms. Sixth, the integrative model implemented in Bantul can serve as a reference and be replicated in other regions across Indonesia and the ASEAN region, with necessary adjustments to suit each area's local characteristics.

Finally, greater regional cooperation across ASEAN could help replicate and adapt successful models. By sharing knowledge, developing regional capacity-building toolkits, and promoting policy dialogues, similar initiatives can strengthen rural communities across borders while preserving Southeast Asia's rich cultural heritage.

In conclusion, the Bantul case study affirms that when thoughtfully designed, community service and volunteerism can serve as powerful tools for integrating rural entrepreneurship, cultural preservation, and education thus advancing multiple SDGs in tandem. However, this potential is only realised when such efforts are context-sensitive, inclusive, and embedded within long-term community partnerships. As rural communities face increasing pressures from globalisation, climate change, and digital disruption, integrated models such as the one presented here offer a promising pathway towards more resilient and sustainable local development in Indonesia and across the ASEAN region.

V. ACKNOWLEDGMENTS

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