

Co-Creation for Sustainable Development: A Community-Driven Innovation Model in Bang Nam Phueng, Thailand

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Abstract

This study explores a community-driven co-creation model for localizing the Sustainable Development Goals (SDGs) in Bang Nam Phueng, Thailand. Using a participatory action research (PAR) approach, the research engaged 70 international youth participants and local stakeholders across five thematic areas: inclusive tourism, waste management, circular packaging, sustainable mobility, and digital transformation. The study applies the SMCR communication framework to analyze how intercultural collaboration can generate practical, scalable solutions aligned with SDGs 11, 12, and 13. Results demonstrate that youth-led innovation, grounded in local culture and facilitated through stakeholder communication, can effectively enhance sustainability outcomes in community contexts. The research proposes two key outputs: (1) a Co-Learning Framework for youth engagement and (2) a Stakeholder Communication Toolkit adapted from the SMCR model. These models offer a transferable blueprint for participatory SDG implementation through community-based innovation.

Keywords: Youth Empowerment, SDGs, Co-Creation, Transcultural Learning, Participatory Communication

Introduction

Efforts to localize the United Nations Sustainable Development Goals (SDGs) have increasingly recognized the limitations of top-down governance approaches, especially in culturally diverse regions like Southeast Asia. Conventional models often overlook community-specific contexts, resulting in solutions that lack long-term relevance or engagement. In contrast, participatory and youth-led innovations have shown greater potential in aligning global sustainability goals with local realities (Kruger et al., 2018; Rahman & Baddam, 2021; Indrawan & Sofjan, 2021). Community co-creation, where solutions are developed collaboratively by local stakeholders and beneficiaries, offers a compelling framework for deepening grassroots sustainability.

Within this paradigm, youth empowerment plays a vital role. Young people, particularly when positioned as co-designers and co-learners, bring creative insights, intercultural sensitivity, and a strong commitment to action (Voorberg et al., 2015; Marisa, 2019; Zimmerman, 2000). Transcultural learning environments allow youth to engage across boundaries of language, culture, and sector, thus enriching the co-creation process. Such dynamics not only enhance personal transformation but also facilitate social innovation that resonates with both community values and SDG frameworks.

The present study focuses on the Bang Nam Phueng community in Thailand, which served as a living laboratory for the 2025 UN SDGs Bootcamp. Over 70 youth participants from 30 countries collaborated with local stakeholders to design and prototype community-driven solutions in five thematic areas: inclusive tourism, waste management, circular packaging, sustainable mobility, and digital transformation. Drawing on participatory action research (PAR) and the SMCR communication model, the initiative emphasized inclusive message design, code-sharing, and adaptive stakeholder dialogue (Berlo, 1960; Leesakun, 2017; Borojević et al., 2023). The outputs of this study, namely the SDG Co-Learning Framework and the SMCR-based Stakeholder Communication Toolkit, are offered as transferable models for future youth-led sustainability programs.

Research Objectives

This study aims to explore and synthesize the intercultural co-creation processes of international youth participating in the UN SDGs Bootcamp Forum 2025, with the following specific objectives:

1. To examine how youth-led co-creation contributes to the localization of the Sustainable Development Goals (SDGs) in a Thai community context.
2. To explore the role of participatory communication, particularly the SMCR model, in facilitating stakeholder engagement across cultural boundaries.
3. To develop transferable frameworks for community-driven SDG implementation through youth empowerment and intercultural collaboration.

Literature Review

In the pursuit of localizing the Sustainable Development Goals (SDGs) through youth-driven initiatives, co-creation has emerged as a pivotal paradigm in both educational and community development settings. Kruger et al. (2018) emphasize that co-creation processes must move beyond mere participation to embrace mutuality, where all stakeholders, including, youth contribute equitably to solution design. Particularly in Southeast Asia, co-creation has proven effective when embedded within local cultural systems and traditional knowledge frameworks (Wibeck, Eliasson, & Neset, 2022; Zohar & Newhouse, 2019; Bueno et al., 2023).

A core aspect of this approach lies in intercultural and transcultural learning, which facilitates not only the exchange of knowledge across groups, but also the emergence of shared values. Zohar and Newhouse (2019) propose a transcultural model of education that bridges Indigenous and Western paradigms to promote sustainability mindsets. Similarly, Knoth et al. (2022) highlights the efficacy of virtual exchange and co-teaching in developing students' intercultural competencies. These models are particularly valuable in contexts where international youth collaborate in community-based SDG actions, as demonstrated in the ENG Co-Creation project.

The theoretical backbone of the project rests on Berlo's SMCR model of communication, which conceptualizes message transmission in terms of Source, Message, Channel, and Receiver (Berlo, 1960). This

model has been adapted for participatory contexts in sustainability education, where dialogic communication ensures inclusivity and power balance (Leesakun, 2017; Wang, Aenis, & Siew, 2019). Moreover, participatory communication strategies that enable marginalized voices to be heard, especially those of youth, are critical to the success of SDG localization efforts (Camargo, Flores, & Quijano López, 2025).

In addition, recent research stresses the importance of developing innovation through community-grounded, transdisciplinary collaboration. Van den Berg and Verster (2023) show how the Quintuple Helix Model incorporating academia, industry, government, civil society, and the natural environment enables sustainable-smart innovations rooted in local contexts. When paired with co-learning approaches such as those found in youth-led social labs and hackathons (Andersson et al., 2024), these innovations become replicable and scalable.

In summary, the current literature supports the integration of co-creation, intercultural learning, and participatory communication as synergistic approaches in community driven SDG initiatives. The project builds on these foundations, offering a youth-centric, culturally sensitive, and innovation-oriented framework for sustainable development.

Research Methodology

This study employed a qualitative Participatory Action Research (PAR) approach to explore how international youth engage with local stakeholders in co-creating community-based solutions aligned with the Sustainable Development Goals (SDGs). PAR was selected due to its emphasis on shared learning, empowerment, and iterative action, which aligns with the objectives of youth-centered sustainable development (Kindon, Pain, & Kesby, 2007; MacDonald, 2012). The study was conceptually framed by Berlo's SMCR communication model (Berlo, 1960), which supports the analysis of dialogue, message adaptation, and cultural interpretation across stakeholder groups (Wang, Aenis, & Siew, 2019).

Fieldwork was conducted in Bang Nam Phueng, Thailand, during the 2025 SDGs International Bootcamp, a community-based learning initiative that brought together 70 youth participants from 30 countries. These youth were divided into five thematic project groups focusing on SDG-relevant challenges: inclusive tourism, waste management, circular packaging, sustainable mobility, and digital transformation. Local community stakeholders, including monks, market vendors, educators, and NGOs were integrated into project activities through co-design sessions, workshops, and stakeholder dialogues.

Data collection was based on two primary qualitative methods: participant observation and semi-structured group interviews. The research team engaged in direct field observation during design workshops, site visits, and community co-creation activities. In addition, semi-structured interviews were conducted with youth participants in each of the five project groups, both during and after the Hackathon-style innovation sessions. These sessions provided insight into the learning dynamics, communication challenges, and stakeholder engagement strategies experienced by each group.

The data were analyzed using thematic analysis, following Braun and Clarke's (2006) six-phase process. Coding was carried out manually and inductively, with themes emerging from the documented results of the five

youth groups and transcripts from discussion sessions. The focus of the analysis was to identify patterns of co-creation, communication strategies within intercultural teams, and the contextual nature of community-driven innovation. While no computer-assisted software was used, analytical rigor was maintained through iterative coding cycles and peer review among the research team.

To uphold research ethics and trustworthiness, all participants were informed of the study's purpose and gave verbal consent before participation. Anonymity and confidentiality were maintained in the reporting of findings. Although no formal institutional ethics approval was required for this educational initiative, the study was guided by ethical principles aligned with human-centered, participatory research practices (Lincoln & Guba, 1985; Flick, 2018). Measures to ensure credibility included prolonged engagement, triangulation between observation and interview data, and team debriefing to reduce interpretive bias.

Table 1: Manual Thematic Analysis Procedure

Phase	Description of Process
1. Familiarization	Researchers reviewed data sources, including group presentations, interview summaries, and field notes from participant observations across five project groups.
2. Initial Coding	Recurring words, concepts, and stakeholder interactions were manually highlighted. Notes were written in the margins to capture early impressions and insights.
3. Grouping Ideas	Related codes were clustered together into preliminary categories (e.g., "youth–monk collaboration," "market-driven innovation," and "barriers to communication").
4. Theme Formation	Categories were analyzed across groups to generate broader themes that captured shared patterns or contrasting practices across contexts.
5. Team Validation	The research team collaboratively refined and named final themes through discussion, ensuring consistency, relevance, and alignment with the SDG framework.

Adapted from Braun & Clarke (2006).

Table 1 outlines the manual thematic analysis procedure used in this study, based on Braun and Clarke's framework. The process includes five iterative phases, starting from familiarization with field data to collaborative theme validation by the research team.

Research Limitations

While the participatory and intercultural design of the study enhanced its authenticity and contextual relevance, several limitations must be acknowledged. First, language differences among participants occasionally posed challenges to communication fluency and depth. Although English was the working language, varying levels of proficiency may have limited some participants' ability to articulate nuanced ideas, a limitation commonly observed in intercultural educational settings (Deardorff, 2006; Knoth et al., 2022). Informal peer translation and the use of visual aids were employed to bridge these gaps during fieldwork.

Second, time constraints inherent to the short-term format of the Bootcamp limited opportunities for extended data collection and follow-up interviews. This is a common constraint in action-based, time-bounded

research initiatives (O'Brien, 2021), where the focus on experiential learning and real-time co-creation often requires methodological compromises.

Third, the richness of cultural and disciplinary diversity within the youth groups, while a strength, also created occasional difficulties in reaching group consensus and managing divergent expectations. These dynamics mirror findings from prior research on transdisciplinary co-creation, where collaboration can be both a source of innovation and a site of friction (Bueno et al., 2023).

Finally, the absence of qualitative data analysis software necessitated a fully manual coding process, which increased the risk of oversight and subjectivity. To mitigate this, a structured coding matrix was used, and theme validation was conducted through peer discussion and triangulation of data sources.

Results

The findings from the five project groups revealed shared patterns in how international youth collaborated with local stakeholders to address sustainability challenges in Bang Nam Phueng. Through thematic analysis, five overarching themes emerged: (1) Sustainability Through Local Culture, (2) Transcultural Learning and Empowerment, (3) Communication for Behavioral Change, (4) Systems Thinking and Stakeholder Mapping, and (5) Digital Innovation for SDG Impact. These themes are summarized in Table 2 and discussed below.

Many groups rooted their solutions in local culture, drawing inspiration from temples, traditional products, and community storytelling. This approach helped connect global SDG concepts to everyday community life, reflecting previous studies that advocate for culturally embedded innovation (Ansell et al., 2022; Zulkefli et al., 2022). For example, one group partnered with temple leaders to design sustainable packaging for local products. Participants also engaged in meaningful transcultural learning. Working in international teams enhanced their global perspectives, problem-solving abilities, and intercultural fluency, outcomes consistent with research on youth development through co-creation (Knoth et al., 2022; Dixon & Tahmaz, 2020). This process empowered participants to shift from passive learners to proactive sustainability actors.

Communication strategies were central to each group's initiative. Youth employed gamified content, interactive signage, and social media storytelling to influence behavioral change within the community. These findings support theories of participatory communication, which emphasize message co-design, visual rhetoric, and adaptive feedback (Bennett, 1998; Fischer & Radinger-Peer, 2024). A notable outcome was the emergence of systems thinking. Some teams mapped local challenges using stakeholder frameworks and time-based planning. Their ability to integrate multiple actors—vendors, monks, tourists, and youth into sustainable solutions aligns with current literature on collaborative systems change in SDG contexts (Padthar & Ketkaew, 2024; Bueno et al., 2023).

Finally, digital innovation was used not as a substitute for cultural insight but as an amplifier. Teams employed tools such as QR codes, social media analytics, and mobile apps to enhance impact. These approaches demonstrate the potential of technology-supported youth innovation for SDG localization, as shown in

recent studies (Perello-Marín et al., 2018; Chinapaw et al., 2024). The themes and examples are summarized in the following table:

Table 2: Thematic Summary of Youth Co-Creation Outcomes

Theme	Description	Illustrative Example
Sustainability Through Local Culture	Emphasizing traditional values, rituals, and spaces (e.g., temples) to promote sustainability	Group 1 used temple tourism to promote circular packaging
Transcultural Learning & Empowerment	Gaining global awareness and leadership through intercultural teamwork	Group 5 emphasized cross-cultural storytelling via workshops
Communication for Behavioral Change	Using creative messaging to influence awareness and practices within the community	Group 2 applied social media challenges to promote recycling
Systems Thinking & Stakeholder Mapping	Integrating multiple actors and long-term perspectives in innovation design	Group 3 developed a mobility model linking vendors and youth
Digital Innovation & SDG Impact	Leveraging technology for social change and SDG education	Group 4 created a QR-based platform to trace sustainable use

Table 2 summarizes the five core themes identified through thematic analysis of the Hackathon groups' outputs. Each theme is paired with a description and a practical example from one of the youth teams, illustrating how local and global knowledge were integrated in co-creating sustainability solutions.

Conclusion and Recommendations

This study explored how international youth, working in transcultural teams, co-created community-based solutions aligned with the Sustainable Development Goals (SDGs) in Bang Nam Phueng, Thailand. Using a participatory action research framework and thematic analysis, five key themes emerged: cultural grounding, transcultural learning, strategic communication, systems thinking, and digital innovation. These findings suggest that community-centered co-creation, when facilitated through experiential learning, can serve as a powerful mechanism to localize SDGs in culturally diverse and ecologically sensitive settings.

The integration of intercultural dialogue and local wisdom proved especially effective in generating context-specific innovations that were both socially acceptable and practically implementable. By engaging directly with monks, vendors, educators, and NGOs, youth participants demonstrated not only creative problem-solving but also the ability to negotiate meaning and adapt solutions to local realities. These outcomes align with previous research highlighting the importance of co-design, trust-building, and communication in grassroots sustainability initiatives (Bueno et al., 2023; Zulkefli et al., 2022; Chinapaw et al., 2024).

However, challenges such as language barriers and time constraints limit the depth of engagement in some cases. Therefore, future initiatives should incorporate pre-project intercultural orientation, allocate more time for field-based reflection, and consider multilingual facilitation to enhance participation equity.

Based on the findings, the study offers the following recommendations:

1. Educational institutions should integrate transcultural co-creation experiences into sustainability curricula, particularly through short-term immersive programs and community labs.
2. Community stakeholders are encouraged to view youth not just as visitors, but as active co-developers of solutions. Structured partnerships between local leaders and international youth can yield mutual capacity building.
3. Policy makers and Development Agencies should support platforms that fund and mentor youth-led innovations at the local level, especially those grounded in cultural sustainability and community resilience.

Ultimately, this study reinforces the idea that youth empowerment, when coupled with participatory communication and local collaboration, can act as a transformative force in sustainable rural development.

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