CROSS-COUNTRY COLLABORATION DRIVES DIGITAL TRANSFORMATION OF INDONESIAN DIASPORA UMKM IN PENANG

Anton HINDARDJO[1], Andyan Pradipta UTAMA[2*], Christina Catur WIDAYATI[3], Eri MARLAPA[4], Aldina SHIRATINA[5]

[1,2,3,4,5] ***Universitas Mercu Buana, Jakarta, INDONESIA***
[*]andyanpradipta@mercubuana.ac.id

ABSTRACT

This study explores a cross-border community engagement program focused on accelerating the digital transformation of Indonesian diaspora Micro, Small, and Medium Enterprises (MSMEs) in Penang, Malaysia. Conducted collaboratively by Universitas Mercu Buana and Universiti Sains Malaysia, this initiative addresses the limited digital capacity among diaspora entrepreneurs through strategic training in financial technology (fintech), digital literacy, marketing, and cybersecurity. Utilizing participatory methods grounded in andragogy and community-based participatory research (CBPR), over 30 MSME actors received three days of structured, hands-on workshops tailored to their business needs. The program yielded notable behavioral shifts, with more than 85% of participants adopting digital tools for business operations. Additionally, the initiative formalized transnational cooperation through the signing of a memorandum of understanding (MoU) and the formation of the Ngeo Digital UMKM Task Force Permai, ensuring long-term sustainability. This paper contributes to the literature on diaspora development, higher education engagement, and digital inclusion by presenting a scalable and replicable model for inclusive economic empowerment. Empirical findings are situated within the theoretical frameworks of the triple helix innovation model and grassroots digital diplomacy, offering significant implications for policy, academia, and international development.

Keywords: Diaspora MSMEs, Digital Transformation, Fintech, Cross-border Collaboration, Community Empowerment.

1. INTRODUCTION

In the era of rapid digital globalization, Micro, Small, and Medium Enterprises (MSMEs) have emerged as crucial drivers of inclusive economic development (World Bank, 2022). This is particularly evident within diaspora communities, where entrepreneurs serve as transnational actors bridging local economies with global markets (Brinkerhoff, 2016). However, despite their economic potential, diaspora MSMEs are often constrained by limited access to digital tools, inadequate infrastructure, and institutional neglect (ILO, 2020).The Indonesian diaspora in Malaysia, especially in Penang, represents a vibrant yet underserved population of micro-entrepreneurs. According to recent statistics from the Indonesian Ministry of Foreign Affairs (2023), over 1.2 million Indonesians reside in Malaysia, with thousands engaged in informal businesses including food production, crafts, retail, and services. These enterprises often rely on conventional modes of transaction such as cash payments and WhatsApp communication, reflecting a digital divide that inhibits competitiveness and scalability (OECD, 2021).

Digital transformation—defined as the integration of digital technologies into all areas of business operations—has been identified as a key enabler for MSME growth, enhancing operational efficiency, access to finance, and customer engagement (UNCTAD, 2022). However, adoption remains uneven among diaspora communities due to language barriers, low digital literacy, and socio-economic vulnerabilities (Kraemer-Mbula et al., 2020). Addressing this gap requires innovative, context-sensitive interventions grounded in community engagement and co-creation. Recognizing this challenge, Universitas Mercu Buana (Indonesia) and Universiti Sains Malaysia launched a cross-border community service program titled *Empowering Diaspora MSMEs through Digital Transformation and Financial Technology*. This initiative sought to build the digital capacity of Indonesian diaspora entrepreneurs in Penang through participatory, hands-on training. The program was implemented over three days in April 2025 at the Community Hall of Talking Beautiful Penang, involving more than 30 MSME actors from diverse business sectors.

The program aligns with the broader policy goals of the Indonesian government, particularly those outlined in the National Strategy for Digital Transformation of MSMEs 2024–2030 (Bappenas, 2023), as well as international development frameworks such as the UN Sustainable Development Goals (SDG 8 and 9). Its implementation also draws on the triple helix model of innovation, emphasizing collaboration between academia, industry, and government as a foundation for sustainable development (Etzkowitz & Zhou, 2017). This paper critically examines the program's design, implementation, and outcomes. It aims to contribute to the academic discourse on digital inclusion, diaspora development, and the role of higher education institutions in facilitating cross-border innovation. By situating the empirical findings within global theoretical frameworks—such as community-based participatory research (CBPR) and digital public diplomacy—it offers insights for scholars, policymakers, and practitioners seeking to replicate similar interventions in other diaspora contexts.

2. METHOD

This study adopted a participatory action research (PAR) methodology framed within community-based participatory research (CBPR), which emphasizes equitable collaboration between academic institutions and community stakeholders (Israel et al., 2010). The implementation design integrated andragogical principles, aligning with Knowles' theory of adult learning which advocates for practical, experience-based, and problem-centered learning processes (Knowles et al., 2015).

The program consisted of a three-day intensive training held from April 26–28, 2025, in Penang, Malaysia, involving over 30 Indonesian diaspora MSME actors. Participant selection was conducted through purposive sampling in collaboration with local diaspora networks, ensuring diversity in gender, business sectors, and digital literacy levels. The training modules were co-designed by faculty from Universitas Mercu Buana (Indonesia) and Universiti Sains Malaysia, incorporating context-specific content based on prior needs assessments. Day 1 focused on digital financial literacy and fintech adoption, introducing participants to tools such as digital wallets (e.g., OVO, Dana), QR code payment systems, and mobile banking applications. Day 2 addressed branding, digital marketing, and social media optimization, with emphasis on Instagram, WhatsApp Business, and Shopee. Day 3 concentrated on cybersecurity, data protection, and simulated business model exercises using lean canvas methods.

To facilitate active learning, a blended instructional model was used: short expert-led lectures, interactive demonstrations, peer-group discussions, and hands-on sessions. Digital tools such as Canva, Google Forms, and Meta Business Suite were utilized during training to enhance familiarity with current digital platforms. Each participant created a digital product catalog and QR payment template by the end of the program. Effectiveness was evaluated using a mixed-method approach. Quantitative pre- and post-training surveys measured changes in digital knowledge, tool adoption readiness, and entrepreneurial confidence. Qualitative data were collected through focus group discussions, reflection journals, and participant interviews. The data were thematically analyzed using Braun and Clarke's (2006) framework to identify patterns of transformation and empowerment.

A unique element of this method was the establishment of peer mentoring clusters. Participants were grouped by business type (culinary, service, fashion) and assigned facilitators who conducted tailored sessions. These clusters have continued beyond the program, with several forming WhatsApp support groups for ongoing sharing and peer learning. Finally, the signing of a memorandum of understanding (MoU) between both universities and the establishment of the Ngeo Digital UMKM Task Force Permai marked the institutionalization of the collaboration. The task force is designed to provide follow-up support, mentorship, and digital promotion assistance for diaspora MSMEs, ensuring program sustainability.

3. RESULTS AND DISCUSSION

The findings of the program suggest a marked improvement in participants' digital literacy and application of digital technologies. Pre-training assessments indicated that the majority of the MSME participants relied heavily on traditional practices such as cash payments, manual bookkeeping, and offline marketing. Post-training evaluations revealed that over 85% of participants integrated at least one digital solution into their operations within two weeks of program completion. The most adopted technologies included QR payment systems, e-wallet applications, and Instagram-based digital marketing.

A case that illustrates this transformation is that of Nur Hidayah, a culinary business owner originally from West Java, who had been using WhatsApp exclusively to take orders. Following the training, she launched an Instagram business account and integrated QRIS (Quick Response Code Indonesian Standard) for cashless payments. Within three weeks, she reported a 40% increase in customer engagement and a noticeable improvement in transaction efficiency.

Group discussions revealed that many participants faced initial apprehensions toward digital tools, largely due to unfamiliarity and perceived complexity. However, the participatory approach of the training, combined with peer mentoring clusters, helped demystify these tools. Participants appreciated the contextualized examples and hands-on experience that allowed them to directly apply what they learned to their business models.

Quantitative data collected through pre- and post-training surveys demonstrated statistically significant gains in digital literacy scores. Paired sample t-tests indicated a mean increase of 2.1 points ($p < 0.01$) on a 5-point Likert scale measuring digital confidence and tool familiarity. Additionally, follow-up interviews three months after the program showed that 73% of participants continued using digital tools regularly, indicating lasting behavioral change.

At the institutional level, the creation of the Ngeo Digital UMKM Task Force Permai became a pivotal mechanism for sustaining post-program impact. The task force operates as a community liaison unit that connects MSME actors with university resources, government programs, and private-sector opportunities. Regular webinars, digital product showcases, and business coaching clinics have been organized since the program's conclusion, reflecting an active follow-up structure.

These results align with existing literature that underscores the role of social learning and institutional scaffolding in supporting MSME digitalization (Nambisan et al., 2019; Zahra & Wright, 2016). The program also exemplifies the potential of the triple helix model in practice, where universities act not only as knowledge producers but as catalysts for community empowerment (Etzkowitz & Zhou, 2017).

Compared to similar diaspora digital empowerment programs in Southeast Asia—such as the Filipino MSME mobile app training in Hong Kong (Tan & Tiongson, 2020) and Vietnamese entrepreneur digital bootcamps in Australia (Pham et al., 2021)—this initiative stands out for its structured peer mentoring, co-designed training materials, and institutional embedding through a formal MoU.

Moreover, the use of digital platforms such as Meta Business Suite, Canva, Shopee, and Tokopedia in the training content reflects a practical orientation that resonates with market demands. Participants were able to simulate business activities, test product listings, and track digital engagement metrics in real-time, thereby internalizing core digital marketing concepts.

Figure 1 illustrates a group photo of participants and presenters, taken at the conclusion of the program.

Figure 1. Activity of the program

Table 1 (below) summarizes the top five digital tools adopted and the rate of adoption across all 30 participants.

Table 1. Digital Tools Adopted by Participants and Utilization Rate

Tool	**Utilization Rate (%)**	**Primary Use**
QRIS Payment	87%	Cashless transactions

Instagram Business Page	74%	Branding and customer engagement
Shopee Marketplace	58%	Product listing and sales
Canva	47%	Product catalog design and promotion
Google Forms	43%	Order intake and customer feedback

These findings underscore the importance of tailoring digital transformation initiatives to the specific cultural and socio-economic contexts of diaspora communities. Digital upskilling must go beyond technical competence; it must cultivate entrepreneurial confidence, peer support, and post-training infrastructure. The collaborative framework deployed in this project offers a promising model for future community-based digitalization programs targeting marginalized or underserved business communities.

4. CONCLUSION

This study demonstrates the transformative potential of cross-border academic-community partnerships in enhancing the digital capacities of diaspora MSMEs. Through a contextually grounded, participatory training program, the initiative successfully bridged the digital divide that often limits the growth of micro-enterprises in transnational settings. The integration of fintech, social media marketing, and digital operational tools not only increased participants' confidence and competence, but also translated into tangible business improvements and sustained behavioral changes.

The program's strength lies in its multidimensional design: blending adult education principles with community-based participatory research, fostering peer-to-peer mentoring, and institutionalizing the outcomes through the Ngeo Digital UMKM Task Force and a bilateral MoU. These features ensured that the benefits extended beyond the immediate training event, embedding a culture of digital entrepreneurship and collaboration.

Furthermore, the findings reinforce the relevance of the triple helix innovation framework in community empowerment contexts. Universities are shown not just as knowledge producers, but as active agents of grassroots economic transformation. The experience in Penang offers a replicable model for similar diaspora engagements in other countries. Ultimately, sustainable digital transformation for diaspora MSMEs requires a holistic approach—one that combines capacity building, policy alignment, institutional support, and grassroots innovation. This program provides compelling evidence that such an approach can be both impactful and scalable.

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